

THE FORGOTTEN HISTORY OF METES AND BOUNDS

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Since long before the settling of the American colonies, property boundaries were described by the “metes and bounds” method, a system of demarcation dependent on localized knowledge of movable stones, impermanent trees, and transient neighbors. Metes and bounds systems have long been the subject of ridicule among scholars, and a recent wave of law-and-economics scholarship has argued that land boundaries must be easily standardized to facilitate market transactions and yield economic development. However, historians have not yet explored the social and legal context surrounding earlier metes and bounds systems—obscuring the important role that nonstandardized property can play in stimulating growth.

Using new archival research from the American colonial period, this Article reconstructs the forgotten history of metes and bounds within recording practice. Importantly, the benefits of metes and bounds were greater—and the associated costs lower—than ahistorical examination of these records would indicate. The rich descriptions of the metes and bounds of colonial properties were customized to the preferences of American settlers and could be tailored to different types of property interests, permitting simple compliance with recording laws. While standardization is critical for enabling property to be understood by a larger and more distant set of buyers and creditors, customized property practices built upon localized knowledge serve other important social functions that likewise encourage development.

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INTRODUCTION

In Worcester, Massachusetts, a rock has lain in the ground for nearly two hundred years with the words of a deed etched into it.¹ Though the transaction is atypical—the grantor proposed to transfer his hilltop parcel to an unusual grantee, God—the idiosyncratic (and now inscrutable) description of the property is not. The boundaries were marked by a “chestnut tree in the wall” where the wall is now gone, “a stake and stones” lost to time, and the names of neighbors long since forgotten.² This is a paradigmatic example of a “metes and bounds” description: records of boundaries that describe a parcel according to monuments (trees, rocks, stakes, or other markers) along its

¹ Dave Rondinone, *Deed Rock*, ATLAS OBSCURA, <http://www.atlasobscura.com/places/deed-rock> [<https://perma.cc/URL9-NP75>].

² *Id.*

outskirts or by reference to neighbors' lands and other nearby features.³ Because it uses local markers, metes and bounds can be used to describe or lay out lots shaped like a rectangle, a many-sided polygon, or anything in between that is produced by the commands in the description.⁴ This method of demarcating boundaries was used in wide swaths of America—not just in the thirteen original colonies and other early states,⁵ but also in isolated sections of states as far west as California.⁶ The recording institutions of the nation are filled with references to piles of stone, all manner of trees, long-lost structures, and dried-up streams.⁷

Metes and bounds descriptions have generally been met with derision from surveyors, lawyers, and scholars.⁸ While it is quaint to mark boundaries with stones, that sort of practice is inconsistent with one of the dominant theories of property's form and function: property institutions and much of property doctrine can be understood as instruments for lowering information costs to parties trying to ascertain the scope and extent of property entitlements from communications about them, whether those communications are the legal forms in which interests are held or other signals of claims.⁹ One can envision different communications about property interests along a spectrum from customized to standardized, depending on how easy it is to ascertain the scope or existence of an

³ See FRANK EMERSON CLARK, A TREATISE ON THE LAW OF SURVEYING AND BOUNDARIES 4-5 (1922); *Metes and Bounds*, BLACK'S LAW DICTIONARY (10th ed. 2014).

⁴ See *infra* Figure 1 (showing area surveyed by metes and bounds with many resulting lot shapes).

⁵ Gary D. Libecap & Dean Lueck, *The Demarcation of Land and the Role of Coordinating Property Institutions*, 119 J. POL. ECON. 426, 429 (2011).

⁶ Gary D. Libecap et al., A Legacy of History: 19th Century Land Demarcation and Agriculture in California (Apr. 2015) (unpublished manuscript), <https://www.econ.pitt.edu/sites/default/files/Lueck.dean.15.pdf> [<https://perma.cc/MC78-Y2L2>].

⁷ CLAIR RUSSELL OSSIAN, INSIGHTS IN EARTH SCIENCE: A LABORATORY MANUAL FOR PHYSICAL AND HISTORICAL GEOLOGY 77 (2001).

⁸ CLARK, *supra* note 3, at 4, OSSIAN, *supra* note 7, at 77-78; Michael P. Conzen, *The Inherent Power in Mapping Ownership*, 92 MICH. L. REV. 1637, 1642 (1994); Sam Bowers Hilliard, *Headright Grants and Surveying in Northeastern Georgia*, 72 GEOGRAPHICAL REVIEW 416, 423 (1982) (describing metes and bounds as “awkward and imprecise” and wondering “how it could possibly have worked under frontier conditions”).

⁹ For examples of some works exploring information-cost theories of property, see Clarisa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465 (2004); Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 YALE L.J. 1 (2000); Carol M. Rose, *Rethinking Environmental Controls: Management Strategies for Common Resources*, 1991 DUKE L.J. 1; Henry E. Smith, *The Language of Property: Form, Context, and Audience*, 55 STAN. L. REV. 1105 (2003).

entitlement from the communication.¹⁰ Customized communications are tailored to individual preferences, permitting specific and infinite numbers of variations, but rendering information about entitlements and obligations legible to a smaller audience with the background knowledge necessary to interpret more idiosyncratic messages.¹¹ In contrast, standardization ensures communications “conform[] to a general pattern”; these communications contain less intensive information and may not precisely satisfy individual preferences, but standardization reduces processing costs and enables communication to a larger, more heterogeneous, dispersed audience.¹² Because they are customized to specific transactions and features of the land, metes and bounds descriptions are quintessentially customized, high-information-cost ways of describing property. And property theory predicts that the high information costs entailed by customization will lead to inefficiencies in property markets.¹³

Some new empirical work has lent support to this criticism of metes and bounds, showing that these descriptions may in certain circumstances cause long-term harm to markets for land. In a series of recent articles, a team of economists led by Gary Libecap and Dean Lueck have demonstrated the relative benefits of the “rectangular system”—the grid laid out in the western states as a result of the Northwest Ordinance—over the street and lot layouts produced by parcels demarcated by metes and bounds.¹⁴ Because the rectangular system standardized information about parcels, permitting them to be described according to a simple pattern by township, meridian, range, and lot, it lowered transactions costs involved in buying property and enforcement costs associated with disputes over boundaries.¹⁵ Libecap and Lueck’s study suggests that, because of these lowered costs, property values may be higher and litigation frequency lower when areas are surveyed in grids and described in standard terms rather than marked and described by fences and trees. Numerous legal scholars have picked up on this study, using

¹⁰ The terms “customized” and “standardized” are sometimes used interchangeably with “informal” and “formal,” but the key point is that customization or informality indicates dependency on local or shared background knowledge and likely a greater degree of idiosyncrasy and variation. Smith, *supra* note 9, at 1112-13.

¹¹ See Merrill & Smith, *supra* note 9, at 3; Smith, *supra* note 9, at 1110-11.

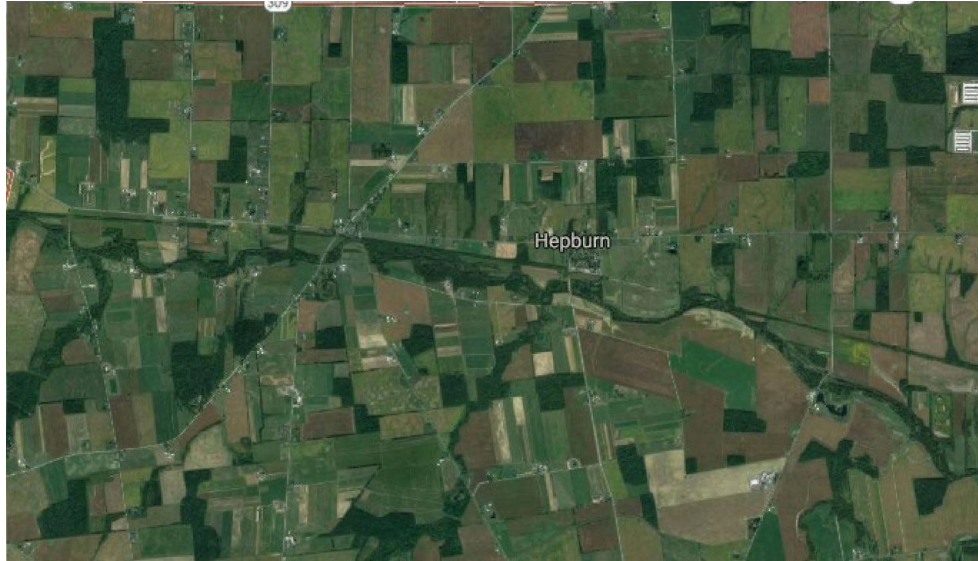
¹² See Smith, *supra* note 9, at 1111-12.

¹³ See Nestor M. Davidson, *Standardization and Pluralism in Property Law*, 61 VAND. L. REV. 1597, 1624-30 (2008) (overviewing the arguments that standardization promotes efficiency in property markets).

¹⁴ Libecap & Lueck, *supra* note 5; Gary D. Libecap et al., *Large-Scale Institutional Changes: Land Demarcation in the British Empire*, 54 J. L. & ECON. S295 (2011); Libecap et al., *supra* note 6.

¹⁵ Libecap & Lueck, *supra* note 5, at 428-29, 430-32; Libecap et al., *supra* note 14, at S296-97.

**Figure 1:
Lot and Street Layouts Produced by Metes and Bounds South of the
Western Grid¹⁶**



it to support broader points about the importance of standardization in property regimes as a precondition for optimal growth or resource value.¹⁷

¹⁶ Dudley Township, Ohio, Google Maps, <https://www.google.com/maps/place/Dudley+Township,+OH/@40.6000392,-83.5132928,13623m/data=!3m2!1e3!4b1!4m5!3m4!1s0x88392e0e6ade7bad:0x8eadb64f0d6b467!8m2!3d40.5931992!4d-83.4856913> (or go to <http://maps.google.com> and search “Dudley Township, OH”). This township contains both a segment of the Virginia Military District surveyed by metes and bounds (lower portion) and an area of Ohio surveyed on the Northwest Ordinance grid (upper portion). The dividing border is the Scioto River, the thick, curving line traveling from left to right in the center of the image. See THE HISTORY OF HARDIN COUNTY, OHIO 300, 599 (1883).

¹⁷ See, e.g., Samuel L. Bray, *Preventive Adjudication*, 77 U. CHI. L. REV. 1275, 1312 (2010) (citing Libecap and Lueck for the proposition that “uncertainty about ownership thwarts the ordinary function of property rules—encouraging owners to make efficient investments and to develop and disseminate information”); Robert C. Ellickson, *The Law and Economics of Street Layouts: How a Grid Pattern Benefits a Downtown*, 64 ALA. L. REV. 463, 465 (2013) (using Libecap and Lueck to argue that street grids are superior to irregular alternatives); Richard A. Epstein, *Disappointed Expectations: How the Supreme Court Failed to Clean Up Takings Law in Murr v. Wisconsin*, 11 NYU J.L. & LIBERTY 151, 178 (2017) (citing Libecap and Lueck for the proposition that “uncertainties associated with [precise boundary] delineation cause major declines in real estate values”); Roderick M. Hills, Jr. & David Schleicher, *Planning an Affordable City*, 101 IOWA L. REV. 91, 118-20 (2015) (using Libecap and Lueck to argue that “standardized forms of property increase property’s value in part because they are more easily sold to a larger market of people”).

Although subjected to these criticisms, metes and bounds systems have not been the object of serious study. Though some historians have written cursory descriptions of metes and bounds to preface histories of the rectangular system in the American West,¹⁸ there are no books or articles focused on metes and bounds descriptions or the laws and institutions surrounding them. Indeed, the primary students of metes and bounds have been not historians or lawyers, but rather ecologists interested in the clues that boundary trees carry about presettlement forest cover.¹⁹ Why have these systems been ignored? Perhaps because, as one ecologist put it, records of private land are “widely scattered and difficult of access.”²⁰ Metes and bounds deeds are buried in county records repositories, if available at all.²¹ Seventeenth- and eighteenth-century court cases and laws on land recording and transfer are inherently local and intermittently published. And besides, how much nuance can attend a system where properties are described by things like “the big hemlock tree where Philo Blake killed the bear”?²²

This Article takes a different view. Using new archival sources, it illuminates the important lessons metes and bounds provide about demarcation, property, and the history of American development. From hundreds of deeds and court records, it uncovers the practices and institutions associated with metes and bounds in one early American settlement: New Haven, Connecticut. As this study reveals, metes and bounds systems were highly contextual and exhibited variations. While the term “metes and bounds” usefully indicates what is common among these systems—descriptions of property boundaries by adjacent features and markers—the

¹⁸ ANDRO LINKLATER, *MEASURING AMERICA: HOW AN UNTAMED WILDERNESS SHAPED THE UNITED STATES AND FULFILLED THE PROMISE OF DEMOCRACY* 7-8, 40, 150-53 (2002); C. ALBERT WHITE, *A HISTORY OF THE RECTANGULAR SURVEY SYSTEM* 9 (2d ed. 1991).

¹⁹ See, e.g., Bryan A. Black & Marc D. Abrams, *Influences of Native Americans and Surveyor Biases on Metes and Bounds Witness-Tree Distribution*, 82 *ECOLOGY* 2574 (2001); Charles V. Cogbill et al., *The Forests of Presettlement New England, USA: Spatial and Compositional Patterns Based on Town Proprietor Surveys*, 29 *J. BIOGEOGRAPHY* 1279 (2002); Robert P. McIntosh, *The Forest Cover of the Catskill Mountain Region, New York, as Indicated by Land Survey Records*, 68 *AM. MIDLAND NATURALIST* 409, 410 (1962).

²⁰ McIntosh, *supra* note 19, at 410.

²¹ Courthouse fires claimed many early deed registries, whether caused innocently or inflicted during the wars of the seventeenth, eighteenth, and nineteenth centuries. See, e.g., *About the Registry of Deeds*, BARNSTABLE COUNTY REGISTRY OF DEEDS, <http://www.barnstabledeeds.org/who-are-we> [<https://perma.cc/VTK3-RSBK>] (describing courthouse fire in Massachusetts in 1827); *Lost Records Localities: Counties and Cities with Missing Records*, LIBRARY OF VIRGINIA (January 2017), https://www.lva.virginia.gov/public/guides/rn30_lostrecords.pdf [<https://perma.cc/2VQ2-B7B4>] (listing over forty jurisdictions with destroyed records of deeds in the state of Virginia).

²² Harold S. Burt, *Local Archives*, 8 *AM. ARCHIVIST* 136, 140 (1945).

use of metes and bounds in different locations was accompanied by different surrounding laws, surveying practices, and supporting institutions. As the history of the New Haven system indicates, metes and bounds systems could offer desirable design features within their specific social and legal context. Furthermore, this history of the New Haven system demonstrates neglected values associated with customization, as well as standardization, within property regimes.

The metes and bounds system explored in this Article has two underappreciated virtues. First, because metes and bounds descriptions were filled with rich, customized information about land, the system built upon these descriptions carried benefits for members of the interpreting community. As some information-cost theorists have argued, there are trade-offs involved in the amount of information provided about an entitlement. On the one hand, standardized information may make transacting less costly by making the entitlement easier for a larger number of interpreters to understand. On the other, thick, customized information is capable of being tailored to the specific needs and preferences of a necessarily smaller audience.²³ Metes and bounds descriptions allowed settlers to map new territory through language that included useful information, such as predicted land uses, natural features, and the people surrounding property. Furthermore, because residents could determine for themselves what information to record—such as detailed or simple descriptions of the

²³ See Carol M. Rose, *Introduction: Property and Language, or, the Ghost of the Fifth Panel*, 18 *YALE J.L. & HUMAN.* 1, 6 (2006); Henry E. Smith, *Community and Custom in Property*, 10 *THEORETICAL INQ. L.* 5, 6 (2009); Smith, *supra* note 8, at 1107-8. There are a variety of messy property doctrines and entitlements that incorporate rich information despite the accompanying costs. In settling property disputes, many doctrines expressly incorporate idiosyncratic community customs—adverse possession, nuisance, and public beach access law, among others—even though the content of those customs is extremely difficult for outsiders to ascertain in engaging in transactions and making other decisions. See Smith, *supra* note 8, at 1107. Relatedly, property scholars, economists, and anthropologists have explored with fascination the enduring and remarkably complex property systems built on social norms and other controls that communities develop to govern everything from fishery rights to trespass liability. See, e.g., JAMES M. ACHESON, *THE LOBSTER GANGS OF MAINE* (1988); ROBERT C. ELLICKSON, *ORDER WITHOUT LAW* (1991); JAMES C. SCOTT, *SEEING LIKE A STATE: HOW CERTAIN SCHEMES TO IMPROVE THE HUMAN CONDITION HAVE FAILED* 309-41 (2008); Stuart Banner, *Two Properties, One Land: Law and Space in Nineteenth-Century New Zealand*, 24 *LAW & SOC. INQUIRY* 807, 811-13 (1999); Robert C. Ellickson, *A Hypothesis of Wealth-Maximizing Norms: Evidence from the Whaling Industry*, 5 *J.L. ECON. & ORG.* 83 (1989); Elinor Ostrom, *Collective Action and the Evolution of Social Norms*, 14 *J. ECON. PERSPECTIVES* 137 (2000). Despite not being formal or legal in the traditional sense, these extralegal systems increase information costs to outsiders trying to operate within the system; it is costly to determine the rules of the group, and noncompliance may carry the risk of heavy social sanctions.

boundaries and contracts governing land use—the system facilitated the establishment and ad hoc development of fledgling recording institutions and new land-related laws on the frontier.

Second, metes and bounds descriptions could be supported by a variety of social and legal practices that mitigated the costs of enforcing boundaries and transferring land. These long-forgotten practices—ritual walking of boundaries, legal processes for communal boundary upkeep, and highly regulated land distributions to closed populations—helped to reinforce shared understanding of the customized descriptions in deeds and to create witnesses and documents that could be used in transferring or disputing the property later. Because the community was relatively homogenous, and land was plentiful, these practices were strikingly effective at reducing conflicts over property.²⁴

In outlining these two virtues, this Article provides a new descriptive account of both metes and bounds recordings and the missing context in which many metes and bounds systems evolved. Moreover, the Article explains why the benefits of metes and bounds were greater—and the associated costs lower—than they might appear to modern readers.

Importantly, the theory articulated in this Article explains not just the rise but also the demise of the metes and bounds system. The imprecision of the metes and bounds system eventually rendered it unwieldy as early American settlements grew and became more heterogeneous. Early in American history, when it was important to the establishment and growth of the colonial enterprise that its institutions be adaptable and its people close-knit, the use of metes and bounds encouraged flexibility and reinforced social bonds. But soon the calculus shifted: under conditions of land scarcity and growing population size and diversity, standardized information demarcating boundaries became more important to facilitate transactions and to reduce a rising tide of litigation. As this history illustrates, in response to these pressures, both top-down and bottom-up standardization occurred within the institutions surrounding metes and bounds.

This evolution teaches us that customization and standardization in property systems can be rational growth strategies in different contexts and at different periods in time. Early on, customized metes and bounds descriptions performed important social and legal functions in tying colonists

²⁴ In this regard, this study builds upon the formative work of others linking legal changes to broader changes in society during the American colonial period. See BRUCE H. MANN, *NEIGHBORS AND STRANGERS: LAW AND COMMUNITY IN EARLY CONNECTICUT* (1987); David Konig, *Community Custom and the Common Law: Social Change and the Development of Land Law in Seventeenth-Century Massachusetts*, 18 *AM. J. LEGAL HIST.* 137 (1974); Bruce H. Mann, *Correspondence, Law, Economy, and Society in Early New England*, 111 *YALE L.J.* 1869, 1871 (2002).

to the land, facilitating compliance with a brand-new system of institutions, and controlling access to outsiders. Later, standardized property descriptions performed different functions: encouraging market transactions and making property ascertainable to distant creditors, buyers, and judges. Not only did both sets of functions yield long-term development, but in the case of metes and bounds, it was growth in an era of customization—rather than standardization—that led to a shift in the property regime and further growth. In other words, the history of metes and bounds should lead us to reevaluate one of the key tenets of economic development theory: the idea that imposing standardization onto property is necessary to spur markets into action and reduce titling disputes.²⁵ This prescription from development economists is partially based on a flawed understanding of American development that caricatures or ignores the history of metes and bounds prior to westward expansion,²⁶ minimizing the importance of customization in enabling institutional buy-in and in making property institutions relevant to those who lived and worked upon the land.

This Article draws these broader lessons about the trade-offs between standardization and customization by studying the evolution of the metes and bounds system in colonial New Haven, Connecticut. Scholars of property, law and society, and law and economics have often used particularized case studies like this to make broader theoretical claims. To cite a few of the most famous examples,²⁷ Harold Demsetz argued that private property rights emerge to internalize externalities using the example of Quebec fur traders;²⁸ Robert Ellickson argued that social norms importantly shape understandings of property rights even in highly formal legal regimes using Shasta County cattle ranchers;²⁹ Elinor Ostrom illustrated that closing access to a limited

²⁵ HERNANDO DESOTO, *THE MYSTERY OF CAPITAL* 164 (2001).

²⁶ *Id.* at 108-49.

²⁷ See, e.g., Michael Abramowicz, *The Uneasy Case for Patent Races over Auctions*, 60 STAN. L. REV. 803, 860 (2007) (describing the “famous” Demsetz theory); Amy Kapczynski & Talha Syed, *The Continuum of Excludability and the Limits of Patents*, 122 YALE L.J. 1900, 1963 n.53 (2013) (same); Russell B. Korobkin & Thomas S. Ulen, *Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics*, 88 CALIF. L. REV. 1051, 1129 (2000) (describing Ellickson’s “now-famous study of actual practices in Shasta County, California”); Stephanie M. Stern, *The Dark Side of Town: The Social Capital Revolution in Residential Property Law*, 99 VA. L. REV. 811, 827 (2013) (describing Ostrom’s “path-breaking” and “influential” work on the role of social capital in property).

²⁸ Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347 (1967).

²⁹ Robert C. Ellickson, *Of Coase and Cattle: Dispute Resolution among Neighbors in Shasta County*, 38 STAN. L. REV. 623 (1986). Ellickson has employed the case study method elsewhere. See Robert C. Ellickson, *Property in Land*, 102 YALE L.J. 1315, 1319-20 (1993) (using “case studies of the land regimes at the Jamestown, Plymouth, and Salt Lake

group is a strategy for common property management using fishermen in Alanya, Turkey;³⁰ and Eduardo Peñalver and Sonia Katyal argued that intentional lawbreaking is an important mechanism for change in property rules using western squatters and Southern sit-in participants.³¹ Following in this tradition, this Article uses New Haven's history to illustrate an alternative form of metes and bounds demarcation and to demonstrate that customized property practices dependent on local knowledge serve a valuable social function.

The Article proceeds in three Parts. Part I describes property institutions in the metes and bounds age. It exhumes information from New Haven deeds and legal records to define the content of metes and bounds descriptions, explains what the information contained in these markers reveals about its authors and audience, and examines the surveying practices and litigation procedures that made these descriptions less uninterpretable than they might appear to a modern reader.

Part II explores the period of history in which metes and bounds descriptions first began posing more problems for contemporaries. As the population grew in New Haven and became more socially and religiously diverse, the localized common knowledge on which metes and bounds descriptions relied became increasingly difficult to maintain. As a result, two parallel sets of changes occurred: first, some high-level legal changes meant to help make property more standardized and transmissible to outsiders, and second, a set of bottom-up adaptations within recording institutions and courtrooms to reduce reliance on localized knowledge and local boundary maintenance.

Part III returns to the lessons this history offers. First, the New Haven metes and bounds system usefully contrasts with other metes and bounds systems, suggesting that differences among these schemes might meaningfully affect the consequences of adopting them. Second, the history of New Haven illustrates that its metes and bounds system carried important benefits and lower costs because of the specific context in which it operated. This indicates that social networks and legal practices may play a key role in mitigating negative outcomes associated with customized demarcation methods. Third, the history recounted here shows that in the same way that standardized property facilitates market transactions, locally customized

settlements; Hutterite colonies and Israeli kibbutzim; Mexican ejidos; and medieval open-field villages" to analyze developments in land institutions).

³⁰ ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* 18-21 (1990).

³¹ Eduardo Moises Penalver & Sonia K. Katyal, *Property Outlaws*, 155 U. PA. L. REV. 1095 (2007).

property furthers growth in surprising ways: enabling buy-in, reinforcing social ties, and limiting threats from outsiders.

Indeed, in New Haven, it was growth that preceded standardization—not the other way around.³² Because of this complex relationship, groups may use standardization or customization in property institutions depending on different short-term goals, an observation which may explain the emergence of some more recent forms of customization in threatened communities in both the developed and developing world. Some of these modern property practices bear a close and surprising relationship to the lands described according to neighbors' identities and ash trees three hundred years ago.

I. PROPERTY INSTITUTIONS IN THE METES AND BOUNDS AGE

This Part begins by identifying the subject of its case study, colonial New Haven, Connecticut, and discussing the content of the colony's metes and bounds descriptions. It then discusses forgotten legal mechanisms that reduced the astronomical information costs of interpreting these descriptions. It focuses on two schemes in particular: the perambulation system, which compelled neighbors to learn about and maintain each other's boundaries; and the land distribution system, which helped minimize the problems associated with haphazard surveys made over time. This Part concludes by drawing observations from New Haven court records, noting how judges resolved disputes involving metes and bounds. Significantly, boundary disputes were extremely infrequent in the earliest period of New Haven history. Despite the apparent incoherence of metes and bounds descriptions to modern readers, legal practices and social forces appear to have assisted both in resolving the disputes over them that did make it to court and in preventing disputes from coming to court in the first place.

A. The Case Study

This Article uses a case study to develop its account of metes and bounds. Understanding how land is governed, transferred, and used requires fine-grained analysis of local rules and institutions to draw out larger lessons, because land has long been the subject of remote and highly localized

³² In other words, this provides evidence of legal change following economic and social change, rather than acting as a precursor to growth or development. *Cf.* Richard C. Schragger, *Decentralization and Development*, 96 VA. L. REV. 1837, 1844, 1908 (2010) (observing the “causal problems” associated with the idea that legal and institutional change drives economic growth and noting that economic growth often drives legal and institutional change).

control.³³ In addition, historical case studies have long enriched doctrinal and economic accounts of property law.³⁴ Case studies provide illustrations of how property institutions operate on the ground, which can yield new, generalizable insights about the workings of particular rules and institutions. Alternatively, case studies may falsify other descriptive or theoretical assertions. In property, as elsewhere, if a predicted theoretical outcome does not occur over time, or occurs differently in different conditions, the study of history can help make modifications to or reveal flaws in theoretical models.³⁵ In other words, case studies offer the potential for both generalization and refinement: a case study in property can act both to provide more generalizable insights about laws and institutions and to refine existing generalizations and theories.

Demarcation systems are especially good candidates for case study because of the potential for important local variations. Local surveyors exert substantial control over the content of written descriptions of property. The laws governing demarcation and transfer vary, too: in the United States alone, a combination of town, colony, and later state laws governed property transfer, recording, and boundary maintenance over the period of American settlement.³⁶ Different regions of America were also settled by individuals with different motivations for settlement and cultural backgrounds. All these physical, legal, and social factors could generate variations in demarcation systems and their associated consequences.

And yet, despite being “the most prevalent” type of land demarcation,³⁷ no metes and bounds systems have been studied in detail. This dearth of scholarship has made it hard to determine both the generalizability of and variation among metes and bounds institutions in different regions and time periods. In work referenced in the Introduction, Gary Libecap and Dean Lueck identified some features of the metes and bounds system in the

³³ WILLIAM CRONON, CHANGES IN THE LAND: INDIANS, COLONISTS, AND THE ECOLOGY OF NEW ENGLAND 71-75 (2003) (discussing the king, colony, and town having overlapping sovereign authority over lands within local boundaries and developing different governance and use approaches). Property regulation continues to be largely the province of state and local actors. Abraham Bell & Gideon Parchomovsky, *Of Property and Federalism*, 115 YALE L.J. 72, 74 & n.1 (2005).

³⁴ See Ellickson, *supra* note 29, at 1398-99.

³⁵ *Cf. id.* (noting how historical case studies can provide insight into the most efficient type of property system).

³⁶ For instance, the division system for distributing land, described in Section I.C. below, was not ubiquitous, though it was common in New England. See EDWARD T. PRICE, DIVIDING THE LAND: EARLY AMERICAN BEGINNINGS OF OUR PRIVATE PROPERTY MOSAIC 29-33 (1995).

³⁷ Libecap & Lueck, *supra* note 5, at 427.

Virginia Military District region of Ohio after the late-eighteenth century.³⁸ A subsequent paper by the same authors and Trevor O’Grady provides some high-level information about metes and bounds systems elsewhere in the British Empire.³⁹ But additional case studies are needed to develop a more complete picture of metes and bounds institutions and to test the theories of when and why demarcation systems are adopted or evolve.

As mentioned in the Introduction, this Article uses as its case study colonial New Haven, Connecticut. New Haven was founded around 1638 as a separate colony, though it was later annexed by Connecticut and became a Connecticut county, town, and city.⁴⁰ The New Haven colonists were overwhelmingly English Puritans, and many had come by way of Boston.⁴¹ Like other early colonies, New Haven’s history is filled with disputes among and within colonial powers and conflict with Native Americans.⁴² Additionally, the settlement of New Haven was religiously infused: its “fundamental law” required freemen to be church members.⁴³

New Haven is a good candidate for a case study of metes and bounds because its history offers opportunities both for testing existing theories against new circumstances and for gleaning new generalizable insights about demarcation in similar settlements. As a subject of study for refining existing theories, the New Haven system is likely to provide contrast to the Ohio metes and bounds system examined by Libecap and Lueck. New Haven was settled much earlier than Ohio was, by a very different group of settlers under a different legal regime. Thus, contrasting these two institutions permits exploration of how factors such as the timing, character of the population, and applicable laws could change the demarcation system or alter the consequences of the system chosen.

Further, while these variations may make New Haven different from the Virginia Military District, New Haven’s demarcation system is likely to be representative of other early colonial metes and bounds systems, especially those in New England. The New England colonies were settled by farmers

³⁸ *Id.* at 432-33.

³⁹ Libecap et al., *supra* note 14, at S300-01.

⁴⁰ HISTORY OF THE CITY OF NEW HAVEN 422-24, 446 (Edward E. Atwater ed., 1887). The colony was controversially annexed by Connecticut between 1662 and 1664, and this change modified some of New Haven’s laws. *Id.* at 8-10. Before its annexation, the colony at one point included not just several parts of southern Connecticut, but also Southold in what is now Long Island, *see id.* at 3-4, and a part of what is now New Jersey, *see* Wayland Fuller Dunaway, *The English Settlers in Colonial Pennsylvania*, 52 PA. MAG. HIST. & BIOGRAPHY 317, 318 (1928).

⁴¹ HISTORY OF THE CITY OF NEW HAVEN, *supra* note 40, at 1.

⁴² *Id.* at 4-5, 22-26, 30-31.

⁴³ *Id.* at 4.

and families with “strong religious roots,” in contrast to other settlements associated less with a religious community and more with economic extraction.⁴⁴ New Haven—along with the rest of Connecticut and Rhode Island—derived its governance structure and many of its laws from Massachusetts.⁴⁵ And most pertinently, the New England colonies shared a common set of procedures for laying out and distributing new lands.⁴⁶ New Haven’s metes and bounds system even shares some similarities with institutions and laws in other colonial regions, such as early Virginia and what is now New York.⁴⁷ In other words, while New Haven is usefully different from other areas in which metes and bounds demarcation was used, thus allowing for generative comparisons, it is also representative of other significant colonial settlements.

Studying New Haven has another virtue. Because metes and bounds descriptions look primitive, one might assume that the colonists lacked personnel or tools that would have enabled property to be described using more precise terms. While it is possible that other towns lacked surveyors or surveying tools,⁴⁸ New Haven had both the personnel and the capacity to engage in more standardized descriptions and rectangular demarcation, as evidenced by the colony’s use of rectangular parcels in nearly uniform blocks in the modern downtown. The colony was the first planned city in America, and it began as a small grid located between two waterways.⁴⁹ New Haven

⁴⁴ WILLIAM E. NELSON, *THE COMMON LAW IN COLONIAL AMERICA: VOLUME I: THE CHESAPEAKE AND NEW ENGLAND 1607-1660*, at 126-29 (2008).

⁴⁵ *Id.* at 81-99 (describing Connecticut, New Haven, Plymouth, and Rhode Island as “New England satellites” and noting the similarities and more minor differences in legal cultures).

⁴⁶ PRICE, *supra* note 36, at 29-33 (describing the system of proprietors dividing and allocating land in New England).

⁴⁷ For example, laws like those in New Haven encouraging community boundary maintenance could be found in these other regions. See William H. Seiler, *Land Processioning in Colonial Virginia*, 6 WM. & MARY Q. 416 (1949) (describing perambulation of private land in Virginia); 5 *THE COLONIAL LAWS OF NEW YORK FROM THE YEAR 1664 TO THE REVOLUTION 18* (1896) (containing nearly identical perambulation law to the one found in New Haven and later Connecticut).

⁴⁸ See John R. Stilgoe, *Jack-o'-lanterns to Surveyors: The Secularization of Landscape Boundaries*, 1 ENVTL. REV. 14, 27-29 (1976) (describing the efforts of Massachusetts towns to get professional surveyors and surveyors’ equipment to help with boundary drawing).

⁴⁹ Maureen E. Brady, *The Failure of America’s First City Plan*, 46 URB. LAW. 507, 511 (2014). New Haven should still be considered a metes and bounds system: properties were described by markers, and even in the gridded part, New Haven lots were not uniformly sized, in part because land was allocated based upon the different wealth and household size of settlers. There were also irregularly shaped lots outside the grid. See *HISTORY OF THE CITY OF NEW HAVEN*, *supra* note 40, at 10-11 (showing distributions of property and reconstruction of lot layouts in 1641). A few scholars have suggested that the use of

had a legendary surveyor, John Brockett, who was so in demand that he was called on to resolve colony-wide boundary disputes and to lay out parts of New Jersey.⁵⁰ And New Haven residents could also draw on land development patterns back in England: grids were well known in towns there.⁵¹ As one might predict, no New Haven officials or surveyors left records of their reasons for using metes and bounds and occasional irregular lot shapes, rather than continuing to lay the town out in a grid, which might have lent itself to standardized lot descriptions at some earlier point (for example, a parcel that could be described as the fourth lot in the fifth row). Still, because the colony had professionals and tools capable of specific measurements and rectangular lot shapes, that makes it less likely that the New Haven colonists were forced to use imprecise descriptions and a mix of lot shapes out of necessity.

Lastly, more banal reasons make New Haven's metes and bounds system a useful subject of study. Apart from about nine years of some courts' records,⁵² New Haven documents have been well preserved and made available to the public.⁵³ And while major historical changes occurred during the long colonial period, developments in land law were slower, allowing for deep study of the major features of metes and bounds demarcation and the legal and social practices surrounding it. It is to those practices that the next several Sections turn.

rectangles in some portions of the colony had nothing to do with marketing those properties more easily; instead, it derived from Biblical or Roman theories of town planning. *See* John Archer, *Puritan Town Planning*, 34 J. SOC'Y ARCH. HISTORIANS 140, 140 (1975).

⁵⁰ EDWARD J. BROCKETT, *THE DESCENDANTS OF JOHN BROCKETT, ONE OF THE ORIGINAL FOUNDERS OF NEW HAVEN COLONY* 24 (1905).

⁵¹ JOHN W. REPS, *THE MAKING OF URBAN AMERICA: A HISTORY OF CITY PLANNING IN THE UNITED STATES* 6-15 (1965) (tracing to the Renaissance the gridiron plans in France, Holland, Spain, and England before American settlement, although there were few new towns planned in England in this period); Libecap et al., *supra* note 10, at S301.

⁵² By sometime in the eighteenth century, records from two of the three tiers of colonial courts dating from April, 1644 to May, 1653 were lost. *RECORDS OF THE COLONY AND PLANTATION OF NEW-HAVEN, FROM 1638 TO 1649*, at iv (Charles J. Hoadly ed., 1857) [hereinafter *COLONY RECORDS, 1638-1649*].

⁵³ New Haven residents labored to preserve these documents. For example, in 1856, Connecticut directed the state librarian to copy early records from the Colony of New Haven. JON C. BLUE, *THE CASE OF THE PIGLET'S PATERNITY: TRIALS FROM THE NEW HAVEN COLONY, 1639-1663*, at 2-4 (2015). In 1882, two volumes of land records and two volumes of proprietors' records were meticulously copied to avoid their further deterioration. *See* An Act to Replace Certain Defaced Records in the New Haven Town Clerk's Office (Feb. 28, 1882), *in* 9 *SPECIAL ACTS AND RESOLUTIONS OF THE STATE OF CONNECTICUT* 351, 351 (1885). Other than the missing court records in the preceding footnote, New Haven's other records have survived.

B. Recording

Although property has been described in metes and bounds formats as far back in history as Ptolemaic Egypt and the Roman Republic,⁵⁴ the American colonies' use of metes and bounds in property descriptions derived from English practice.⁵⁵ Before and at the time of American settlement, conveyancing documents in England contained descriptions of properties by reference to monuments and markers.⁵⁶ Unfortunately, no study yet exists of the contents of metes and bounds descriptions in different parts or periods of English history. This makes it difficult to assess how different or similar early New Haven metes and bounds descriptions were from any preexisting descriptive practices.

There might be a practical impediment to studying metes and bounds descriptions in early modern England. The laws that created official records of land transfers, which preserved the deeds used in this study, were somewhat of an American novelty.⁵⁷ The first American law governing deed recording dates to 1626.⁵⁸ England instituted recording much later in history.⁵⁹ Scholars have debated why the American colonies maintained

⁵⁴ See J.G. MANNING, *LAND AND POWER IN PTOLEMAIC EGYPT: THE STRUCTURE OF LAND TENURE* 155-56 (2007); WALTER G. ROBILLARD ET AL., *BROWN'S BOUNDARY CONTROL AND LEGAL PRINCIPLES* 82-83 (2011).

⁵⁵ GABY M. NEUNZERT, *SUBDIVIDING THE LAND: METES AND BOUNDS AND RECTANGULAR SURVEY SYSTEMS* 75-76 (2011).

⁵⁶ See 2 WILLIAM BLACKSTONE, *COMMENTARIES* *136; see also *HISTORY IN DEED: MEDIEVAL SOCIETY & THE LAW IN ENGLAND, 1100-1600* (Carol Symes ed., 1993) (containing scattered records of English charters conveying land and some isolated metes and bounds descriptions).

⁵⁷ W. Scott Van Alstyne, *Land Transfer and Recording in Wisconsin: A Partial History—Part I*, 1955 WIS. L. REV. 44, 45-47.

⁵⁸ These earliest acts used recording to target fraudulent conveyances, which were last-ditch disposals of realty to prevent creditors from accessing it. Accordingly, they typically required recording only if the grantor remained in possession. A grantor still living on the property while claiming to have transferred it looked suspicious, like an effort by the grantor-debtor to transfer property beyond the reach of creditors while still enjoying de facto ownership. Joseph H. Beale, Jr., *The Origin of the System of Recording Deeds in America*, 19 GREEN BAG 335, 335 (1907); George L. Haskins, *The Beginnings of the Recording System in Massachusetts*, 21 B.U. L. REV. 281, 284 (1941).

⁵⁹ See C. Dent Bostick, *Land Title Registration: An English Solution to an American Problem*, 63 IND. L.J. 55, 67 (1987) (“Interestingly, no comparable [recording] system evolved in England.”); P.H. Marshall, *A Historical Sketch of the American Recording Acts*, 4 CLEV.-MARSHALL L. REV. 56, 62 (1955) (“[F]or the most part the idea of recording acts never became generally accepted throughout England and registry was limited to certain English counties and boroughs . . .”). Nowadays, England has a land registration system, which involves recording transfers, but also provides a “definitive summary of the state of the title” backed by government assurance. Because England never mandated recording

official registers of deeds so many years before they came into common use abroad.⁶⁰ Regardless of the reason, this illustrates an important point: colonial clerks, surveyors, and other officials were designing new recording laws and institutions as they settled new lands. Put another way, the colonists who transferred properties and recorded deeds in the first century of American history were taking part in new legal practices.

To be sure, there were some sources of inspiration for American recording laws and institutions. England had tried unsuccessfully to institute a sort of land recording with the Statute of Enrollments in 1536, which required enrolling in court all transfers of inheritances or freehold estates.⁶¹ However, crafty English transferors were able to get around the enrollment requirement using leasing,⁶² not all estates were required to be enrolled,⁶³ and enrollments would have created only an index, rather than containing full descriptions of properties.⁶⁴ The Dutch had a land registration system, and some of America's earliest settlers spent time in Holland before migrating to American shores; though different in particulars, the Dutch did record full deeds containing land descriptions, though historians have disagreed about the plausibility that those procedures influenced American recording.⁶⁵ Some early Americans might have had exposure to local or manorial customs of acknowledging some transfers of interests in courts or before other officials.⁶⁶

Yet while American recording laws and institutions bore some similarities to these earlier practices, they were unique in combining a variety of features: recordings full of dense information about property rather than

before these registration laws, the initial registration of land involves bringing many documents to the official registry. *See* Jerry L. Anderson, *The Divergent Evolution of English Property Law*, 29 PROB. & PROP. 50, 50-51 (2015).

⁶⁰ *See* Bostick, *supra* note 59, at 67 & n.34; Marshall, *supra* note 59, at 64; Van Alstyne, *supra* note 57, at 47.

⁶¹ Haskins, *supra* note 58, at 291.

⁶² Landowners were so used to getting around the requirement that the "lease and release" method of conveying interests was the most common method of conveyance from 1620 to 1845. SHELDON F. KURTZ, *MOYNIHAN'S INTRODUCTION TO THE LAW OF REAL PROPERTY* 245-46 (5th ed. 1988).

⁶³ Haskins suggests that "the Pilgrims" were unlikely to have been the sorts of owners required to enroll land transfers in England at the time. Haskins, *supra* note 58, at 292.

⁶⁴ 4 AMERICAN LAW OF PROPERTY: A TREATISE ON THE LAW OF PROPERTY IN THE UNITED STATES § 17.5, at 536 (1952).

⁶⁵ *Compare* Haskins, *supra* note 58, at 289-91 (suggesting that Dutch land registration influenced the development of American recording) *with* Beale, Jr., *supra* note 58, at 338 (stating "it is not probable that any of the Puritan colonists were influenced by" the Dutch system).

⁶⁶ Haskins, *supra* note 58, at 296-98; Marshall, *supra* note 59, at 59.

cursory indices, records of transfers kept on file with central authorities, and lastly, new incentives to encourage recording.⁶⁷ Although there were earlier recording provisions in Virginia and elsewhere, in 1640, Massachusetts passed the recording law that would become the template for most colonial recording acts. It required settlers to record all transfers “[f]or avoyding all fraudulent conveyances, & that every man may know what estate or interest other men may have in any houses, lands, or other hereditaments they are to deale in.”⁶⁸ This law would prove influential in several respects. First, it appointed recorders to write land descriptions into books at the colony court, creating the architecture for recording institutions.⁶⁹ Second, it required the recording of the names of the grantor and grantee, the “thing & the estate” granted, and the date of transfer.⁷⁰ Finally, in addition to penalties associated with recording—for example, fines for failure to record in a timely fashion⁷¹—the new act added an incentive. For the first time, recording a conveyance carried with it a benefit to the grantee—priority. Recording an interest would give an owner claims against any others asserting title to the property.⁷²

New Haven’s recording laws tracked this provision both before and after the colony’s merger with Connecticut. The rules governing recording remained essentially the same for the duration of the colonial period.⁷³ New

⁶⁷ See Beale, Jr., *supra* note 58, at 339; Haskins, *supra* note 58, at 293-98; R.G. Patton, *Evolution of Legislation on Proof of Title to Land*, 30 WASH. L. REV. & ST. B.J. 224, 226 (1955).

⁶⁸ Haskins, *supra* note 58, at 282. Decades ago, Mark DeWolfe Howe argued that the Massachusetts act was not as different from the fraudulent conveyance statutes as it seemed and that recording may not have been required if “livery of seisin or transfer of possession” had taken place. Mark DeWolfe Howe, *The Recording of Deeds in the Colony of Massachusetts Bay*, 28 B.U. L. REV. 1, 2, 6 (1948).

⁶⁹ Haskins, *supra* note 58, at 282-83.

⁷⁰ *Id.* at 283. Though the first Massachusetts recording statute affirmatively banned recording full deeds, that provision was removed by 1648. *Id.* at 282 n.5.

⁷¹ *Id.* at 287.

⁷² Beale, Jr., *supra* note 58, at 337.

⁷³ New Haven’s 1642 recording law provided that “a booke shall be kept by the Secretary, of all the alienations whether houses or lands belonging to this plantation, butt no entry to be made without order of the Court” and guaranteed that the entry of an alienation would make it good against any “formr promise, covebant, bargaine or margage nott so entered.” COLONY RECORDS, 1638-1649, *supra* note 52, at 83. A 1656 reiteration of this provision may have changed this standard, requiring the recording of interests only if the grantor remained in possession after the transfer. NEW-HAVEN’S SETTLING IN NEW-ENGLAND: AND SOME LAWES FOR GOVERNMENT 33-34 (1656). When New Haven merged with Connecticut around 1664, see 2 CHARLES M. ANDREWS, THE COLONIAL PERIOD OF AMERICAN HISTORY: THE SETTLEMENTS II 186-94 (1964), that colony’s recording laws again required each present and future owner to furnish “a noate of his howse and land, with

Haven's first full book of recorded deeds begins in 1678, approximately forty years after the colony's founding.⁷⁴ Prior to 1678, it appears that transfers of interests in property were recorded among other town and colony records.⁷⁵ Throughout the period, it is hard to know how comprehensively the recording rules were followed. Despite all the penalties for failing to abide by the recording law, there was evidently noncompliance.⁷⁶ Still, one can study the types and functions of metes and bounds descriptions from those that were recorded over the period.

As an initial observation from the New Haven recordings, colonial metes and bounds descriptions were almost always even less precise than descriptions of property edges. Most early deeds describe only the things and people adjacent to a property, rather than a perimeter surrounding it.⁷⁷ This

the bounds and quantity of the same, by the nearest estimation," or else face a fine, THE CODE OF 1650, BEING A COMPILATION OF THE EARLIEST LAWS AND ORDERS OF THE GENERAL COURT OF CONNECTICUT 88-89 (1822) [hereinafter CODE OF 1650]. There were a few other minor modifications. For example, the Connecticut law was modified at some point before 1702 to require each clerk to "date the time of his Entring all such records." ACTS AND LAWS OF HIS MAJESTIES COLONY OF CONNECTICUT IN NEW-ENGLAND 102 (1901).

⁷⁴ The first deed in the book dates from 1679; it is followed by numerous deeds from 1678. Deed of Nov. 6, 1679 (recorded Nov. 17, 1679), in 1A New Haven Land Records 1, 1 (on file with the New Haven City Clerk's Office) [hereinafter NHLR]. That volume also contains scattered deeds executed before 1678, but only recorded after that date. *E.g.*, Deed of June 2, 1674, in 1A NHLR, *supra*, at 19, 19.

⁷⁵ *E.g.*, 1 ANCIENT TOWN RECORDS: NEW HAVEN TOWN RECORDS 1649-1662, at 25, 51, 110, 111, 195, 258, 276, 378, 409, 410, 417, 468, 481, 487, 494, 502, 514, 516 (Franklin Bowditch Dexter ed., 1917) [hereinafter NEW HAVEN TOWN RECORDS 1649-1662]; 2 ANCIENT TOWN RECORDS: NEW HAVEN TOWN RECORDS 1662-1684, at 39, 47, 78, 124, 128, 175, 195, 213, 214, 224, 240, 241, 260, 265, 280, 281 (Franklin Bowditch Dexter ed., 1919) [hereinafter NEW HAVEN TOWN RECORDS 1662-1684].

⁷⁶ In 1667, the governing body "being sensible of the great Trouble and Contention that doth and may arise in this Colony, by reason of great Defects that are found in Records," specified the time horizon for possessors who had not yet recorded to do so, imposing penalties for failure to record by 1668. These "defects" appear to be failures to record. THE BOOK OF THE GENERAL LAWS FOR THE PEOPLE WITHIN THE JURISDICTION OF CONECTICUT 56-57 (1673). The deed books themselves contain evidence of noncompliance. For example, in a 1683 deed, widow Ellen Tomson recorded various parcels of land of which she had "for divers years . . . stood possessed" and against which there was "no claim or prosecution." Deed of May 7, 1683, in 1A NHLR, *supra* note 74, at 120, 120-21. Other times, it is clear that deeds were recorded many years after the original transfer. *E.g.*, Deed of March 24, 1682, in 1A NHLR, *supra* note 74, at 272, 272 (transferring what "is or was our right in the year aforesaid"); Deed of April 17, 1699, in 1B NHLR, *supra* note 74, at 465, 465 (recording made in 1706).

⁷⁷ Though there are isolated stray deeds containing perimeters, *see* Deed of June 18, 1683 (recorded June 21, 1683), in 1A NHLR, *supra* note 74, at 160, 160-61 (transferring "three acres and a half of meadow . . . bounded by a straight line from a stake on the river side westward to a corner stake in the meadow about ten rod and thence by a right line to the

deed from March of 1710, in which Abigail Jones, “spinner,” deeded land to John Sherman, “husbandman,” is a standard example of the sorts of metes and bounds recordings made:

[I hereby give to John Sherman] a certain parcell [sic] of upland to me belonging Lying within y^c Limits of s^d N. Haven being half Division Land Lying upon Long Hill on y^c west side containing in Quantity four acres Bounded as followeth by highways Eastw^d & Westw^d by Land of s^d John Shermans northw^d & southw^d⁷⁸

The deed refers to the land by its area (“four acres”), roads (“highways”), an area (“half Division”), a natural feature (“Long Hill”), and a neighbor (“John Sherman”).⁷⁹ Note, again, that the description of boundaries is not from marker to marker or monument to monument—instead, it describes things surrounding the property, rather than the path one would take around its edges. In other words, early metes and bounds descriptions often referred to a general region rather than a bounded space.⁸⁰

Most early metes and bounds descriptions rely on unidentifiable, impermanent markers that fall into a few dominant categories. Neighbors are the most common descriptor; deeds near-universally refer to at least one neighbor, describing land as adjacent to land of others.⁸¹ Close behind are

river northerly”), their number is dwarfed by the number described herein referring to parcels according to neighbors, highways, and nearby natural feature.

⁷⁸ Deed of Mar. 30, 1710, in 3 NHLR, *supra* note 74, 295.

⁷⁹ *Id.*

⁸⁰ Intellectual property scholars have developed helpful terminology for differences in methods of describing an entitlement. Peripheral claiming delineates the entitlement by its outer edges, whereas central claiming describes the entitlement by its central characteristics and leaves its precise bounds unclear. See John Duffy, *Counterproductive Notice in Literalistic Versus Peripheral Claiming*, 96 B.U. L. REV. 1197, 1201-2 (2016); Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. CHI. L. REV. 719, 721, 726-27 (2009). It is a maxim in the intellectual property literature that patent claims describe the “metes and bounds” of the invention, a precise form of demarcation providing clarity and certainty. Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 157 U. PA. L. REV. 1743, 1744 (2009); Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257, 274 (2007); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 845 (1990); Adam Mossoff, *Exclusion and Exclusive Use in Patent Law*, 22 HARV. J.L. & TECH. 321, 374 (2009). However, that maxim is based on an incorrect understanding of the character of many metes and bounds descriptions. In fact, early property-based metes and bounds descriptions were much more imprecise, like central claims: they asserted a right to an area of land located between reference points, and the property itself might be marked, negotiated, or litigated at the margins and outside the record books.

⁸¹ *E.g.*, Deed of Feb. 3, 1678, in 1A NHLR, *supra* note 74, at 3 (providing name of neighbor and former neighbor); Deed of June 16, 1679, in 1A NHLR, *supra* note 74, at 74

references to neighborhoods. Numerous deeds in the seventeenth and early eighteenth centuries use colloquial names for particular lots and areas as a way of siting the property.⁸² Deeds also commonly refer to natural features as measures of boundary lines, including trees,⁸³ waterways,⁸⁴ rocks,⁸⁵ and orchards.⁸⁶ Likewise, manmade infrastructure could be used to describe boundaries or areas: unnamed streets,⁸⁷ harbors,⁸⁸ or common fields.⁸⁹ Occasionally, boundaries were delineated by other structures or landscape features put in by residents. Deeds occasionally refer to parts of the built

(listing neighbors on four sides); Deed of May 23, 1682, *in* 1A NHLR, *supra* note 74, at 118 (naming adjoining property of “Abraham Broadly”); Deed of Jan. 15, 1686, *in* 1A NHLR, *supra* note 74, at 361 (“land of William Johnson”); Deed of April 28, 1691, *in* 1B NHLR, *supra* note 74, at 46–47 (describing neighbors “Henry Bristells” and “Samuell Burwell”); Deed of April 15, 1691, *in* 1B NHLR, *supra* note 74, at 298 (describing neighbors on all sides).

⁸² *See, e.g.*, Deed of Dec. 30, 1692, *in* 1B NHLR, *supra* note 74, at 99 (transferring land “in a field commonly called Bushy lot”); Deed of Feb. 23, 1699, *in* 1B NHLR, *supra* note 74, at 508 (“Indian field”); *see also* sources cited *infra* note 125-129 (providing further examples).

⁸³ *See, e.g.*, Deed of Dec. 31, 1688, *in* 1A NHLR, *supra* note 74, at 528 (referring to “an old stump” and “a black oak”); Deed of Feb. 23, 1699, *in* 1B NHLR, *supra* note 74, at 508 (“trees being marked in the divided line”); Deed of Jan. 22, 1699, *in* 1B NHLR, *supra* note 74, at 491 (“white oak tree”).

⁸⁴ *See, e.g.*, Deed of Feb. 3, 1678, *in* 1A NHLR, *supra* note 74, at 3 (“west side of the creek”); Deed of July 8, 1682, *in* 1A NHLR, *supra* note 74, at 123 (“a great creek”); Deed of Jan. 15, 1686, *in* 1A NHLR, *supra* note 74, at 362 (“a creek or creeks from my salt marsh meadow”); Deed of Apr. 19, 1693, *in* 1B NHLR, *supra* note 74, at 125 (“a botable creek”).

⁸⁵ *See, e.g.*, Deed of May 20, 1678, *in* 1A NHLR, *supra* note 74, at 10 (describing land “joining to the common towards the Rocks on the North”); Deed of Aug. 5, 1687, *in* 1A NHLR, *supra* note 74, at 405 (transferring land near “the upper end on the rocks”); Deed of Apr. 17, 1699, *in* 1B NHLR, *supra* note 74, at 463, 464 (noting need for highway from “Milliners Rocks”).

⁸⁶ *See, e.g.*, Deed of June 18, 1683, *in* 1A NHLR, *supra* note 74, at 160-61 (transferring land “bounded to the southward by the lands and inclosures of Mr James Bishop and of William Paine to the westward by the Orchard”).

⁸⁷ Streets are typically referred to as highways. *See, e.g.*, Deed of Apr. 15, 1696, *in* 1B NHLR, *supra* note 74, at 298-99 (transferring “one parcell of arable land lieing and being in the little quarter so called containing by estimation about an acre and half more or less bounded by land of Thomas Leek southward by the Mill river eastward by land of Samuell Mix northward and by the highway westward”).

⁸⁸ *See, e.g.*, Deed of Apr. 29, 1690, *in* 1A NHLR, *supra* note 74, at 576 (transferring land bounded “on sea harbor west”).

⁸⁹ *See, e.g.*, Deed of Nov. 2, 1705, *in* 2 NHLR, *supra* note 74, at 384, 384 (“comon plain”); Deed of Dec. 12, 1704, *in* 2 NHLR, *supra* note 74, at 286, 286 (“comon land”); Deed of March 23, 1687, *in* 1A NHLR, *supra* note 74, at 382.

environment like a fence,⁹⁰ mill,⁹¹ ditch,⁹² or—in one colorful example—a “brick kiln.”⁹³

Metes and bounds deeds indicate that recording could be accomplished with extremely simple descriptions of property and, in some cases, perhaps even without surveying. Transfer documents between family members and those that describe inheritances often put less value on specific boundaries and precise areas, instead specifying the land types that each designee would receive.⁹⁴ This type of description was permitted by the recording law, which provided only that the clerk should write down “such limits, extents & descriptions as may conveniently be done.”⁹⁵ For example, in 1682, Jane Gregson transferred land not yet bounded to her granddaughter Rebekah: “that cove commonly called Gregsons Cove (the reason why I give not the bounds of the said meadow is because the whole cove is not divided).”⁹⁶ In 1686, Thomas Barnes the elder gave his son Daniel “the westernmost side of [his] great meadow lot.”⁹⁷

Neither of these deeds describes the acreage, let alone any precise boundary markers; one plausible explanation is that the grantees already knew what portions they might expect to receive. Farms often became a large family operation as the eldest family members aged, even if the children had farms of their own. Contemporary records suggest that kin helped cultivate each other’s lands, pasture each other’s animals, and bring each other’s goods to local markets.⁹⁸ Additionally, it was common for children to inherit the family farm in return for caring for aging parents.⁹⁹ Perhaps the children already knew what they could expect to inherit or had negotiated beforehand, meaning deeds could be more vague.¹⁰⁰

This system made recording simple and tailored to the parties by

⁹⁰ See, e.g., Deed of April 12, 1682, in 1A NHLR, *supra* note 74, at 141-42; Deed of Sept. 20, 1689, in 1A NHLR, *supra* note 74, at 545, 545; Deed of May 27, 1699, 1B NHLR, *supra* note 74, at 465, 465.

⁹¹ See, e.g., Deed of Nov. 22, 1686, in 1A NHLR, *supra* note 74, at 361, 361.

⁹² See, e.g., Deed of May 26, 1699, in 1B NHLR, *supra* note 74, at 465, 465.

⁹³ See, e.g., Deed of Dec. 9, 1699, in 1B NHLR, *supra* note 74, at 492, 492.

⁹⁴ See, e.g., Deed of Nov. 17, 1679, in 1A NHLR, *supra* note 74, at 1, 1 (describing transfer from mother to son of “half one acre in the Oyster shell field bounded by Edward Keelys land on the East side and on John Holts land on the West side”).

⁹⁵ COLONY RECORDS, 1638-1649, *supra* note 52, at 216.

⁹⁶ Deed of June 30, 1682, in 1A NHLR, *supra* note 74, at 119, 119.

⁹⁷ Deed of Nov. 22, 1686, in 1A NHLR, *supra* note 74, at 359-60.

⁹⁸ Virginia DeJohn Anderson, *Thomas Minor’s World: Agrarian Life in Seventeenth-Century New England*, 82 AGRIC. HIST. 496, 501 (2008).

⁹⁹ *Id.*

¹⁰⁰ In one deed, the grantors note that they transfer property to their children as their sons “have already divided it.” Deed of Nov. 22, 1686, in 1A NHLR, *supra* note 74, at 359-60.

permitting interests to be described at different levels of specificity. But clerks also placed few if any limitations on recordings in this early period. They wrote into the record books all different sorts of transactions and agreements. The early recording system captured fairly specific and strange easements.¹⁰¹ In 1678, for example, John Potter gave to James Denison “a peice of meadow land (only I reserve liberty of carting over it the hay from a peice of meadow belonging to Samuel Hemingway and adjoining to it).”¹⁰² Another grantor transferred his property, but reserved for himself “all the stones in upon or belonging to the aforesaid parcel.”¹⁰³ Sometimes recorded deeds described rights in specific plants, such as the one which reserved to the seller “the Chestnutt stuff yt is growing on [the] highway . . . provided I cut it off within Seven years.”¹⁰⁴ In addition to records of property transactions, minor contracts made their way into the deed books as well: agreements delineating who should maintain fences,¹⁰⁵ negotiating over ferry franchises,¹⁰⁶ requiring the continuation of a ditch,¹⁰⁷ or ensuring that a tenant’s rights would be protected after a transfer.¹⁰⁸

Even interests in things other than land were amenable to recordation. A colorful recording from 1681 secured a mortgage by describing a boat “called the Katherine with all her sails cables anchors tackling and other apparel.”¹⁰⁹ A father recorded the transfer of “half the cattle and half [his] tools” to his son.¹¹⁰ Indeed, early recording institutions provide further proof of the blurry

¹⁰¹ In addition to the uncommon interests herein described, grantors often reserved more typical easements for themselves when conveying the property. *See, e.g.*, Deed of Apr. 4, 1678, in 1A NHLR, *supra* note 74, at 19, 19; Deed of Nov. 22, 1686, in 1A NHLR, *supra* note 74, at 359, 360; Deed of Sept. 9, 1678, in 1A NHLR, *supra* note 74, at 10, 10 (reserving for the town “a passage of about twenty to thirty rods wide” on property “for the Hard or carting way as the Town shall have occasion”).

¹⁰² Deed of Feb. 3, 1678, in 1A NHLR, *supra* note 74, at 3, 3.

¹⁰³ Deed of Apr. 7, 1699, in 1B NHLR, *supra* note 74, at 463, 463.

¹⁰⁴ Deed of Mar. 21, 1759, in 23 NHLR, *supra* note 74, at 288, 288.

¹⁰⁵ *See, e.g.*, Deed of Apr. 4, 1678, in 1A NHLR, *supra* note 74, at 19, 19; Deed of April 12, 1682, in 1A NHLR, *supra* note 74, at 141, 141-42; Deed of Jan. 15, 1686, in 1A NHLR, *supra* note 74, at 361, 361; Deed of Nov. 22, 1686, in 1A NHLR, *supra* note 74, at 359, 361.

¹⁰⁶ Deed of April 15, 1700, in 1B NHLR, *supra* note 74, at 517, 517

¹⁰⁷ Deed of June 9, 1684, in 1A NHLR, *supra* note 74, at 240, 240.

¹⁰⁸ In 1682, Jane Gregson passed on her meadow land but noted that the current tenant was “to have the grass of it to the end of the time.” Deed of June 30, 1682, in 1A NHLR, *supra* note 74, at 119, 119.

¹⁰⁹ Deed of June 28, 1680, in 1A NHLR, *supra* note 74, at 123, 124-25. The boat is described as a “Kecth,” probably a misspelling of “ketch,” a type of masted boat used in the seventeenth century. JOHN ROBINSON, *THE SAILING SHIPS OF NEW ENGLAND 1607-1907*, at 22 (2014).

¹¹⁰ Deed of March 16, 1689, in 1B NHLR, *supra* note 74, at 566, 566.

distinction between property and contract.¹¹¹ Property describes an interest good against the world, whereas contracts describe an exchange of bilateral promises, but there are numerous doctrines and institutions that blend different strengths and weaknesses of the two.¹¹² Deeds are an example of this. They are fundamentally contracts between the parties, but once recorded, the descriptions they contain become critical for third parties trying to locate the property or ascertain the scope of claims.

These idiosyncrasies of early metes and bounds recordings and institutions—the vernacular markers, the unusual interests, and the legacies of bilateral promises—make clear that muddled contracts have long had a place even within centuries-old property institutions. But they also illustrate that these institutions were flexible and accommodating. Clerks were overinclusive in their early recordings, but that may ultimately have facilitated compliance. Recording was simple: parties brought documents and the clerk wrote them in, without the need for expensive or time-consuming verification or frequent requests for further specification and precision.¹¹³ Instead of being written for an audience unfamiliar with the land or its residents, early metes and bounds recordings prioritized the parties' preferences. The clerk could put all sorts of interests into the book to make parties feel more secure: both in their transactions, now copied for posterity into official records, and in their certainty that they had complied with new recording laws likely unfamiliar to them back in England.¹¹⁴ The simplicity of recording made compliance and legality accessible.¹¹⁵ Settlers brought all sorts of descriptions and interests to recorders as they interacted and developed familiarity with novel recording rules and institutions.

Metes and bounds descriptions contain a wealth of information about the land and its uses. These descriptors helped to locate the property,¹¹⁶ but they

¹¹¹ See Thomas W. Merrill & Henry E. Smith, *The Property/Contract Interface*, 101 COLUM. L. REV. 773, 777-78 (2001).

¹¹² See *id.*

¹¹³ I have found a single example where officials stated that the land being transferred was too imprecisely described to record, and that seems partially to be due to the fact that the land was being transferred to three individuals and it was unclear whether all would hold together or each would hold a different piece. NEW HAVEN TOWN RECORDS 1649-1662, *supra* note 75, at 218.

¹¹⁴ See *supra* notes 56-70 and accompanying text.

¹¹⁵ Cf. Nicole Stelle Garnett, *Mercantilism, American Style*, in HERNANDO DE SOTO AND PROPERTY IN A MARKET ECONOMY 139, (D. Benjamin Barros ed., 2010) (suggesting that “when the costs of legality exceed the costs of informality,” parties will choose informality over formal, legal institutions).

¹¹⁶ A recent article describes in detail how even descriptions of land uses were ways of locating property; the law of waste, preventing changes in use, evolved partially to ensure methods of identifying land were maintained. Jill M. Fraley, *A New History of Waste Law*:

also reveal how colonists understood the land and what they valued.¹¹⁷ Early deeds describe properties as “house” or “home lot,”¹¹⁸ “orchard,”¹¹⁹ “wood land,”¹²⁰ “meadow,”¹²¹ “arable sandy land,”¹²² and “swamp.”¹²³ Such categories reflect prevailing land use patterns; colonists sought agricultural diversity, holding some land for grazing, other land for timber, and still other land for planting.¹²⁴ Names of areas also conveyed information about parcels. These vernacular place names took many forms: “that upper end of Bank of the East River commonly called the red bank,”¹²⁵ “a field commonly called the Suburbs quarter,”¹²⁶ “in a field commonly called Bushy lot,”¹²⁷ “Whitheads Hill so called,”¹²⁸ “that place called the Stops.”¹²⁹ Some neighborhoods were named by reference to animals.¹³⁰ Most of all, however, colonists understood the land through people. Areas were associated with the names of prominent owners,¹³¹ and references to neighbors are ubiquitous. In

How a Misunderstood Doctrine Shaped Ideas About the Transformation of Law, 100 MARQUETTE L. REV. 861, 871-84 (2017).

¹¹⁷ Cf. ELISABETH JEAN WOOD, *INSURGENT COLLECTIVE ACTION AND CIVIL WAR IN EL SALVADOR* 45, 47, 48 (2003) (noting how process of mapping provides information about “property boundaries and land use” but also “the perceptions and values of [map] makers”).

¹¹⁸ See, e.g., Deed of June 18, 1683, in 1A NHLR, *supra* note 74, at 160, 160-61.

¹¹⁹ *Id.*

¹²⁰ See, e.g., Deed of Mar. 4, 1700, in 1B NHLR, *supra* note 74, at 568, 568.

¹²¹ See Deed of Mar. 17, 1679, in 1A NHLR, *supra* note 74, at 18, 18 (transferring “meadow land”); Deed of Aug. 30, 1728, in 8 NHLR, *supra* note 74, at 44, 44 (“salt meadow”).

¹²² Deed of April 19, 1693, in 1B NHLR, *supra* note 74, at 124, 125.

¹²³ See, e.g., *id.*; Deed of Nov. 2, 1705, in 2 NHLR, *supra* note 74, at 384, 384.

¹²⁴ CRONON, *supra* note 33, at 72 (describing how colonists used “different types of land” for different purposes); Anderson, *supra* note 98, at 498-99, 503 (2008). Although from a later period, and although he did not farm his own land, we know that New Haven resident Ezra Stiles intentionally diversified his Connecticut plantings. See 1 THE LITERARY DIARY OF EZRA STILES 441 (Franklin Bowditch Dexter ed. 1901).

¹²⁵ Deed of Mar. 17, 1679, in 1A NHLR, *supra* note 74, at 18, 18.

¹²⁶ Deed of May 24, 1715, in 4 NHLR, *supra* note 74, at 490, 490.

¹²⁷ Deed of Dec. 30, 1692, in 1B NHLR, *supra* note 74, at 99, 99.

¹²⁸ Deed of July 28, 1725, in 6 NHLR, *supra* note 74, at 706, 706.

¹²⁹ Deed of May 6, 1737, in 10 NHLR, *supra* note 74, at 356, 356; see also Deed of Feb. 19, 1684, in 1A NHLR, *supra* note 74, at 271, 271 (describing land in “Homeses Race”); Deed of June 16, 1679, in 1A NHLR, *supra* note 74, at 74, 74 (describing meadow “commonly called Hills Swamp”)74.

¹³⁰ Deed of June 25, 1683, in 1A NHLR, *supra* note 74, at 161, 161 (describing land in the “Ox pasture”); Deed of March 23, 1682, in 1A NHLR, *supra* note 74, at 272, 272 (same).

¹³¹ Deed of Mar. 25, 1680, in 1A NHLR, *supra* note 74, at 49, 49 (describing land according to “the cove of meadow commonly called the Club and that cove of meadow commonly called Captain Nash his cove” and “Mr Malbons cove”); Deed of Mar. 17, 1679, in 1A NHLR, *supra* note 74, at 18, 18 (describing the lands surrounding a cove commonly called “Mr Mosses landing place”).

characterizing the land by the people surrounding it, colonists' descriptions indicate the importance of fellow community members on the frontier. Neighbors traded labor and exchanged services, and they could be called upon to support one another in the event of property loss.¹³² The metes and bounds descriptions encoded and reflected these relationships and values.

Since transacting parties brought in metes and bounds descriptions to be recorded, they may have been the primary producers and consumers of this dense information. But metes and bounds descriptions had other authors and audiences as well. Surveyors served a critical public role in "laying out" new grants and communicating those boundaries to the parties and to government officials.¹³³ With each land description, surveyors and clerks making copies were learning more about the territory and mapping it for future development. Integrating what was learned about the property through the process of surveying into the metes and bounds descriptions made information about the land available to other town officials and the public at large.

Searching the records was inexpensive, at least compared to recording.¹³⁴

¹³² See Anderson, *supra* note 98, at 500, 502; NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 269, 448.

¹³³ Surveyors were often appointed by the town to "lay out" new grants of land. *See, e.g.*, NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 23; NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 308. The "government officials" were the clerks and secretaries charged with keeping the record books. *See* COLONY RECORDS, 1638-1649, *supra* note 52, at 216.

¹³⁴ The remainder of this paragraph compares the cost of searching to the cost of recording, but it may be useful to have some sense of how much these fees would be relative to cash on hand or else total average wealth. Determining household wealth in this period is challenging. Fortunately, historian Terry Anderson has sampled New Haven inventories of estates from 1660 to 1709 to assess wealth levels. Terry L. Anderson, *Wealth Estimates for the New England Colonies, 1650-1709*, 12 EXPLORATIONS IN ECON. HIST. 151, 151-53 (1975). Anderson's analysis splits total wealth into land, other assets, and capital, and further splits capital into "working capital" (which includes marketable commodities and cash), fixed capital, and shipping capital. *Id.* at 154. There were periodic specie shortages and other currency problems during this period, meaning commodities were sometimes used in lieu of coins for transactions. *See* Claire Priest, *Currency Policies and Legal Development in Colonial New England*, 110 YALE L.J. 1303, 1322-26 (2001). In other words, of the pools of wealth identified by Anderson, working capital would be the likely source for payments of fees or other debts.

Anderson's estimations using New Haven inventories of estates between 1660 and 1709 found decedents had total average wealth between 222 and 319 pounds, made up of capital holdings somewhere between 55 and 111 pounds, of which approximately 80-90% was working capital. *See* Anderson, *supra*, at 154, tbl. 2, 157, tbl. 3, 160, tbl. 5. In recognition that capital holdings would differ by age, occupation, and gender, *see id.* at 162-63, and that estate inventories might systematically exclude the estates of poor residents, *see id.* at 152, Anderson estimates that per-head capital holdings would be somewhere between 7 and 11 pounds in this period across the New England colonies, *see id.* at 171, tbl. 11. Of course,

In 1672, it cost six pence to have local officials record a transaction, but only one penny to search the records for a parcel.¹³⁵ In 1702, while the fee for recording increased to two shillings (or twenty-four pence),¹³⁶ the minimal fee for a search remained the same, and the law by then provided for “Copies or Writing any persons shall have occasion for.”¹³⁷ In other words, recording was somewhere between six and twenty-four times as expensive as searching the records. If residents or officials consulted the deed books for information about a parcel or person, they might have found deep descriptions of both the land and its inhabitants, including tree cover, expected uses, and even occupations.¹³⁸ Unfortunately, any sense of who consulted the deed records—or what they learned from them—is lost to time. Still, at a minimum, metes and bounds language and descriptions helped colonial residents develop a vocabulary for understanding the land. These descriptions created a taxonomy of the neighborhoods, natural features, and land characteristics that would come to shape settlement.

C. *Surveying and Boundary Making*

The picture of the recording system that emerges from the New Haven Land Records may be a perplexing one: deeds were highly customized; they contained extraneous information; they did not typically describe pathways around parcel edges; and the markers chosen to signify boundaries were often unnamed or impermanent. But the surrounding social and legal context suggests that the problems associated with locating property might not have been as serious as a modern reader would assume. Specifically, two legal processes—one after surveying, one before—helped to reduce the problems associated with metes and bounds demarcation. This Section discusses these processes, perambulation and the division system, in turn.

children and others who count as “heads” would be unlikely to be transacting or searching in land records, but these numbers indicate that most colonists would have had working capital holdings of double digits of pounds. Each pound was equivalent to 20 shillings or 240 pence. JOHN J. MCCUSKER, *MONEY AND EXCHANGE IN EUROPE AND AMERICA, 1600-1775: A HANDBOOK* 35, tbl. 2.1 (1978) (showing that one pound sterling was equivalent to 20 shillings or 240 pence).

¹³⁵ 1672 Conn. Pub. Acts 62.

¹³⁶ See MCCUSKER, *supra* note 134, at 35, tbl. 2.1.

¹³⁷ 1702 Conn. Pub. Acts 103.

¹³⁸ See Deed of May 20, 1678, in 1A NHLR, *supra* note 74, at 10, 10 (describing transferor as “merchant”); Deed of Jan. 22, 1678, in 1A NHLR, *supra* note 74, at 11, 11 (describing transferor as “husbandman”).

1. Perambulation

Perambulation is the “act or custom of walking around the boundaries of a piece of land, either to confirm the boundaries or to preserve evidence of them.”¹³⁹ It was an ancient custom infused with religious significance.¹⁴⁰ An Anglo-Saxon poem exists in which Christ condemns Satan to perambulate the boundaries of hell, perhaps a not-so-subtle reflection of how much the author might have enjoyed the practice.¹⁴¹ Communal boundary maintenance practices were prevalent in Roman times; on or about February 23, the Romans celebrated the “Feast of Terminalia,” in which neighbors met to honor the god Terminus by decorating each side of their common boundary stones.¹⁴² Perambulation was a variant of this sort of neighborly boundary marking.¹⁴³ By the late middle ages, members of church or abbey communities perambulated the boundaries of their parishes during religious holidays.¹⁴⁴ The practice eventually became secularly useful as a way of measuring town boundaries in Europe, and eventually individuals made use of the practice for measuring the bounds of private land.¹⁴⁵ The New England colonists brought perambulation with them when they traversed to the new continent.¹⁴⁶

The ritual of perambulation could involve much more than merely walking the outskirts of property. Perambulation was also known as “beating the bounds.”¹⁴⁷ Inhabitants of the community would walk around the relevant property, literally striking the boundary line—as well as any markers in it—with sticks, stones, and willow tree branches.¹⁴⁸ Both adults and children went along with the affair.¹⁴⁹ The express purposes of these perambulation procedures were “to make sure that the bounds and marks were not tampered

¹³⁹ BLACK’S LAW DICTIONARY, *supra* note 3.

¹⁴⁰ E.M. Konstam, *Bounds, Beating The*, in 2 ENCYCLOPEDIA OF LOCAL GOVERNMENT LAW: EXCLUSIVE OF THE METROPOLIS 25, 25 (Joshua Scholefield ed., 1906).

¹⁴¹ See JOHANNA KRAMER, BETWEEN EARTH AND HEAVEN: LIMINALITY AND THE ASCENSION OF CHRIST IN ANGLO-SAXON LITERATURE 198 n.77 (2014).

¹⁴² *Terminus*, in BRITANNICA ENCYCLOPEDIA OF WORLD RELIGIONS 1085 (Wendy Doniger et al. eds., 2006).

¹⁴³ 3 THE BERWICK MUSEUM, OR, MONTHLY LITERARY INTELLIGENCER: FORMING AND UNIVERSAL REPOSITORY OF AMUSEMENT AND INSTRUCTION 391-92 (1787).

¹⁴⁴ KRAMER, *supra* note 141, at 198 n.77.

¹⁴⁵ See ALLAN GREER, PROPERTY AND DISPOSSESSION: NATIVES, EMPIRES AND LAND IN EARLY MODERN NORTH AMERICA 297 (2018).

¹⁴⁶ Allegra di Bonaventura, *Beating the Bounds: Property and Perambulation in Early New England*, 19 YALE J.L. & HUMAN. 115, 117-18 (2007).

¹⁴⁷ Konstam, *supra* note 140, at 25.

¹⁴⁸ di Bonaventura, *supra* note 146, at 117; Konstam, *supra* note 140, at 25.

¹⁴⁹ Konstam, *supra* note 140, at 25.

with, to restore them when displaced, and also to establish them in the memory of the folk.”¹⁵⁰ Indeed, the reason for involving children was so that “witnesses to the perambulation should survive as long as possible.”¹⁵¹ A child might be picked up and flipped, so that the child’s head would touch the boundary.¹⁵² Other stories recount how children were thrown into streams that served as property boundaries.¹⁵³ Worse yet, children were sometimes beaten alongside the boundaries in order to impress the boundaries upon their memories.¹⁵⁴ While many records describe boys involved in perambulation, some records indicate that women also perambulated and that fathers taught their daughters about property lines.¹⁵⁵

The earliest New Haven legal code provided a process for requesting perambulation of land lying in common fields. Although these areas were “common,” in reality, different sections were farmed or used by different individuals.¹⁵⁶ Later on, the law was extended to cover perambulation of all private land “lying unfenced,” whether located in common fields or not.¹⁵⁷ When fences were used as boundary markers, perambulation was less necessary; a rigorous set of regulations governed the erection and maintenance of fences,¹⁵⁸ and one of the oldest government officials on the American continent was the “fence viewer,” an official charged with inspecting fences to ensure they remained in good order.¹⁵⁹ For property subject to compulsory perambulation, either the owner of land or an adjoining

¹⁵⁰ *Landmarks and Boundaries, in* ENCYCLOPAEDIA OF RELIGION AND ETHICS 789, 794 (James Hastings et al. eds., 1908).

¹⁵¹ Konstam, *supra* note 140, at 25.

¹⁵² di Bonaventura, *supra* note 131, at 117. This practice of flipping children still occurs in some parts of England, where perambulation was used for borough or parish boundaries. *See Video: Ancient Child Tipping Tradition Upheld*, BUCKS FREE PRESS, May 5, 2013, at https://www.bucksfreepress.co.uk/news/10401101.Video__Ancient_child_tipping_tradition_upheld/.

¹⁵³ *Landmarks and Boundaries, supra* note 150, at 794.

¹⁵⁴ *Id.*

¹⁵⁵ GREER, *supra* note 145, at 297-98; di Bonaventura, *supra* note 140, at 133-34; *see* Lawrence v. Haynes, 5 N.H. 33, 36 (1829).

¹⁵⁶ CODE OF 1650, *supra* note 73, at 25-26; *see* PRICE, *supra* note 36, at 32 (describing individualized segments within common fields).

¹⁵⁷ 1702 Conn. Pub. Acts 8.

¹⁵⁸ Fencing was the subject of numerous very early laws. For instance, a 1640 record describes the required fencing for “houslotts” versus fencing for woods and for keeping out “pigs, swine, goates and other cattell.” COLONY RECORDS, 1638-1649, *supra* note 52, at 37.

¹⁵⁹ BRIAN P. JANISKEE, LOCAL GOVERNMENT IN EARLY AMERICA: THE COLONIAL EXPERIENCE AND LESSONS FROM THE FOUNDERS 23 (2010). By 1644, every area of New Haven had to appoint a committee to inspect fences and report defects to their owners. If cattle later got in and ate adjoining grass, then the owners of the defective fence would be liable. COLONY RECORDS, 1638-1649, *supra* note 52, at 126.

owner could request that it be done; and during the months of March, April, October, and November, the perambulation would have to occur within a week of being requested.¹⁶⁰ Landowners who refused to conduct perambulation on a neighbor's request would be fined.¹⁶¹ Apart from legally compelled perambulations, voluntary perambulations also took place, where a family or a few neighbors and friends would walk boundaries together to cement them in collective memory.¹⁶²

Perambulation had at least three purposes.¹⁶³ First, like the laws governing fence erection, inspection, and maintenance, perambulation assisted in boundary creation and conservation.¹⁶⁴ As mentioned above, most if not all metes and bounds deeds refer to a neighbor or former owner. Because perambulation was performed both voluntarily and as required by law, the people mentioned in deeds were people likely to know where the boundaries were. Without this context, the customized descriptions may appear more imprecise—the equivalent of telling a friend that you live over by a certain restaurant, for example. The difference is that in early New Haven, the proprietors of the restaurant would likely have been able to inform that friend of your property limits.

In addition, perambulation supplemented the written records of deeds with tangible markers carved, stacked, and cut into the landscape by landowners, neighbors, and surveyors. Scattered metes and bounds descriptions refer to the existence of boundary markers explicitly, like boundary stones and notched trees.¹⁶⁵ But even when the land was described in the deed only by general location, evidence from the period suggests that landowners made use of physical boundary markers on the ground to add concreteness to the written description.¹⁶⁶ Perambulation ensured that these

¹⁶⁰ CODE OF 1650, *supra* note 73, at 24-26.

¹⁶¹ *Id.*

¹⁶² GREER, *supra* note 145, at 297.

¹⁶³ A fourth purpose, not discussed here, was that perambulation was used to settle and preserve *town* boundaries. See CHARLES HERBERT LEVERMORE, THE REPUBLIC OF NEW HAVEN: A HISTORY OF MUNICIPAL EVOLUTION 169-70 (1886) (describing this function of perambulation and noting that New Haven town boundaries were not perambulated until 1683).

¹⁶⁴ See CODE OF 1650, *supra* note 73, at 26-27 (noting that purpose of perambulation provision was to ensure “the lands of particular persons are carefully to bee meinteined” and to prevent “deficiency and decay of markes”).

¹⁶⁵ Deed of January 22, 1699, in 1B NHLR, *supra* note 74, at 491 (“meer stone”); Deed of February 23, 1699, in 1B NHLR, *supra* note 74, at 508 (“trees being marked in the divided line”).

¹⁶⁶ For instance, we know that the Atwater property, the subject of boundary litigation discussed later in this Article, was marked by notched trees. See *infra* notes 224-230 & accompanying text. The recorded deed said only that the land was “lying neer the Mill,

boundary markers were preserved over time. Landowners were legally responsible for putting in and maintaining stones and other border signals,¹⁶⁷ and perambulation assisted individual proprietors in this sort of upkeep.¹⁶⁸

Perambulation served a final purpose: it created witnesses useful in a variety of contexts. Witnesses to perambulation could attest to the property's location and bounds for later buyers. In 1735, a man not far from New Haven recalled traversing boundaries with his friend in the first decade of the eighteenth century “that [he] might show the . . . land and bounds thereof to any person that had a mind to buy it.”¹⁶⁹ Other contemporary records show that buyers consulted friends and community members to locate the specific boundaries of properties in which they were interested, in part because perambulation gave neighbors and others knowledge of borders.¹⁷⁰ Additionally, perambulation created witnesses who could be sought out in conflicts between neighbors.¹⁷¹ These witnesses could be called upon to testify as to the location of trees, markers, and other signals of the dividing line.¹⁷² In this way, perambulation was meant to limit disputes over boundaries.¹⁷³ Indeed, dating back to Roman times, this was the primary function of communal boundary maintenance. The poet Ovid wrote in praise of the god Terminus—honoree of the feast during which neighbors came together to decorate boundary stones—that without him, “every field would be disputed.”¹⁷⁴

bounded wth the Mill river on the one side, the rocke on the other, one end butting vpon the land that was Captaine Turners.” NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 110.

¹⁶⁷ The New Haven code required landowners to procure and maintain “mear-stones,” which is an archaic term for “a stone that marks land boundaries,” BLACK’S LAW DICTIONARY, *supra* note 3, at 1138. *See* 1672 Conn. Pub. Acts 7; 1702 Conn. Pub. Acts 8.

¹⁶⁸ *Cf.* Richard M. Candee, *Land Surveys of William and John Godsoe of Kittery, Maine, 1689-1769*, in *NEW ENGLAND PROSPECT: MAPS, PLACE NAMES, AND THE HISTORICAL LANDSCAPE* 9, 26 (Peter Benes & Jane Montague Benes eds., 1982) (describing three Maine landowners, a surveyor, and an estate administrator “renew[ing] the bound marks” while “on a perambulation”).

¹⁶⁹ di Bonaventura, *supra* note 146, at 125 (quoting *Hempstead v. Morgan*, New London County Superior Court Records, Box 6, File of March 1735 (on file with Connecticut State Library)).

¹⁷⁰ *See infra* notes 228-230 & accompanying text.

¹⁷¹ di Bonaventura, *supra* note 146, at 134.

¹⁷² *Id.*

¹⁷³ *See* CODE OF 1650, *supra* note 73, at 24-25 (noting that purpose of perambulation provision was to prevent “incumbrances in Courtes”); *Lawrence v. Haynes*, 5 N.H. 33, 35 (1829) (observing that the “object of these [perambulation] provisions in the statutes has been to prevent disputes”).

¹⁷⁴ Daniel-Erasmus Khan, *Territories and Boundaries*, in *BARDO FASSBENDER & ANNE PETERS, THE OXFORD HANDBOOK OF THE HISTORY OF INTERNATIONAL LAW* 230 (2012).

Though New Haven residents left no firsthand stories of their perambulations, evidence of perambulations and neighbors' familiarity with boundaries can be found elsewhere in the New Haven records. For example, there are records of Connecticut courts calling as witnesses to boundaries old men who, as boys, had been involved in perambulation rituals.¹⁷⁵ In one case from 1724, to locate a property plotted in the 1640s, the townsmen brought in men over seventy who had lived in New Haven since their childhoods.¹⁷⁶ Each man testified to the townsmen as to his memories of the boundaries of the farm and what he thought was common knowledge about it. One man testified that the property line was known by "Common Repute" to be marked by a "white stone."¹⁷⁷ In another record, when a buyer had failed to confirm the boundaries of the property he purchased from the seller before the seller's death, the New Haven court admonished him to consult "the survayer & quarter" to locate the bounds.¹⁷⁸ (The word "quarter" was a synonym for the neighborhood.¹⁷⁹) There are other records of property owners "shew[ing] the bounds" of land or being called to show the boundaries by neighbors.¹⁸⁰ In one instance, two residents are described as "anciantly acquainted and liveing near" a property, and they "went Round" to help a surveyor locate the winding river course that served as their neighbor's boundary line.¹⁸¹ This phrase in the New Haven records—"showing the bounds"—is used to indicate perambulations in other early American documents.¹⁸²

Perambulation distributed the costs of maintaining boundaries and markers to landowners and other residents. It also distributed the costs of producing and maintaining knowledge to the community at large. In that

¹⁷⁵ 3 ANCIENT TOWN RECORDS: NEW HAVEN TOWN RECORDS 1684-1769, at 542-47 (Zara Jones Powers ed., 1962) [hereinafter NEW HAVEN TOWN RECORDS 1684-1769]; see also di Bonaventura, *supra* note 131, at 133-36 (describing records of perambulation in nearby New London, Connecticut).

¹⁷⁶ NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 542-47.

¹⁷⁷ *Id.* at 543.

¹⁷⁸ NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 54.

¹⁷⁹ See, e.g., *id.* at 448 (showing this use in describing representatives for different quarters and using the phrase "quarter wherein he liveth").

¹⁸⁰ *Id.* at 406-7, 515; see also NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 412 (describing how in 1719 the "Neighbours" of one New Haven lot were called "in assisting to shew the ancient Bounds," consisting of stones and marked trees); *id.* at 392 (describing a neighbor called to show boundaries in 1717).

¹⁸¹ NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 415.

¹⁸² See *Jackson v. Sternbergh*, 1 Cai. 162 (N.Y. Sup. Ct. 1803) (containing testimony by 79-year-old about being shown the bounds some forty to fifty years earlier); 15 THE EARLY RECORDS OF THE TOWN OF PROVIDENCE 240- (1899) (containing 1682 letter of Gregory Dexter describing him "shew[ing] the bounds" to a Captain Hopkins who encroached on property belonging to his heirs).

sense, it was not unique among early New England legal processes. For instance, another early colonial law in New Haven required young men living alone to take up residence with families, in part so that the families would “be able to give and account of or concerning them or their conversatiō when required.”¹⁸³ In other words, many New England practices and legal procedures were designed to shift the costs of gathering and keeping information to private individuals. Later, in the event of conflict or dispute, these residents could give an accounting of facts on the ground.

2. *The Division System*

Perambulation took place after property was laid out. But even before property was surveyed, there were some features of the land distribution system that also made highly customized metes and bounds descriptions more interpretable than they might otherwise appear. In the seventeenth century, New Haven’s town leaders—called the townsmen or selectmen—allocated land to settlers in two different ways: either (1) individually by parcel or (2) in large groups of parcels during major land distributions.¹⁸⁴ Though land was sometimes requested by individual freeholders and laid out on a case-by-case basis,¹⁸⁵ it was very common for whole areas to be surveyed for distribution at once, rather than sequentially.

This method of distributing land in groups—the division system—was used in many New England settlements,¹⁸⁶ but it has been largely forgotten in the legal literature on metes and bounds. In this second method of granting land, multiple parcels were laid out simultaneously. The division system was used to distribute New Haven land from 1640 until well into the mid-eighteenth century; I have found records of at least twelve disbursements

¹⁸³ COLONY RECORDS, 1638-1649, *supra* note 52, at 70.

¹⁸⁴ For additional discussion of these two systems in other towns in Connecticut, see Nelson P. Mead, *Land System of the Connecticut Towns*, 21 POL. SCI. Q. 59, 60-62 (1906).

¹⁸⁵ See, e.g., NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 36 (detailing the request of Matthew Moulthrop for “a piece of meadow of about six or seuen acres lieing near southend” put to vote); *id.* at 336 (describing the town appointing two surveyors to “view y^e the place & make report to y^e Towne” in response to a request by Jonathon Hodshon).

¹⁸⁶ See generally PRICE, *supra* note 36 (describing extensively the land division system in each colony). For other sources describing the division system in early colonies, see CHARLES MCLEAN ANDREWS, *THE RIVER TOWNS OF CONNECTICUT: A STUDY OF WETHERSFIELD, HARTFORD, AND WINDSOR* 42 (1889); FAIRFAX HARRISON, *VIRGINIA LAND GRANTS: A STUDY OF CONVEYANCING IN RELATION TO COLONIAL POLITICS* 14, 17, 43 (1925); 3 NEW HAMPSHIRE HISTORICAL SOCIETY, *COLLECTIONS OF THE NEW HAMPSHIRE HISTORICAL SOCIETY*, 186 (1832).

during that time.¹⁸⁷ The divisions generally proceeded radially around the colony. The “first division” was the original layout of the home lots in the “town plat” in New Haven’s downtown; the “second division” occurred around 1640, with the owners of the home lots receiving new land to farm.¹⁸⁸ The third division happened in 1680.¹⁸⁹

The third division is particularly well documented and provides good insight into how group surveying worked. The overall amount of land a head of household would receive was predetermined primarily by family size and investment.¹⁹⁰ There was a lottery to determine the parcel’s location in the area being laid out.¹⁹¹ Indeed, the origins of the term “lot” to refer to parcels comes from this ancient custom of distributing property by lottery.¹⁹² After lots were drawn, the townsmen recorded the results in long lists produced for each division, listing the recipients in the order of their drawing with a description of the total acreage awarded.¹⁹³ From there, the general area or areas to be surveyed were recorded in the town records. In addition to prescribing the general area where new parcels should be laid out, the townsmen regulated the general appearance of parcels by prescribing a maximum length for each lot, subject to a few exceptions.¹⁹⁴ The townsmen

¹⁸⁷ NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 207-24 (fourth or “Half” division and first division of the “Sequestered Land” in 1704); *id.* at 296-97 (fifth division in 1711); *id.* at 345-49, 478-83 (second and third divisions of sequestered land in 1713 and 1723); *id.* at 461 (sixth division in 1720). There are scattered deeds referring to the seventh, eighth, and ninth divisions. *See* Deed of Apr. 24, 1738 (recorded Apr. 25, 1738), in 10 NHLR, *supra* note 74, at 480 (recording transfer of “a certain seventh division lott of Land in said New Haven”); Deed of Jan. 26, 1767 (recorded Mar. 2, 1767), in 28 NHLR, *supra* note 74, at 266, 266 (recording transfer of “one quarter part of one Certain Lot of Land Laid out in s^d Town of New Haven in y^e 8th Division in the Name of Nath Potter Sen^r”); Deed of Sept. 28, 1769 (recorded Nov. 28, 1769), in 30 NHLR, *supra* note 74, at 264, 264 (transferring “one Certain 9th Division Lot Laid out upon the right of Joseph Potter”).

¹⁸⁸ HISTORY OF THE CITY OF NEW HAVEN, *supra* note 40, at 3.

¹⁸⁹ *Id.*; *see also* NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 389-93 (appointing Committee to prepare for the third division and specifying some guidelines for the laying out of the new lands).

¹⁹⁰ HISTORY OF THE CITY OF NEW HAVEN, *supra* note 40, at 26-28; *see also* NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 193-94 (stating that each person with a drawing in the fourth division would receive two acres per person and ten acres per one hundred pound).

¹⁹¹ HISTORY OF THE CITY OF NEW HAVEN, *supra* note 40, at 26-28

¹⁹² 9 OXFORD ENGLISH DICTIONARY 39-40 (J.A. Simpson & E.S.C. Weiner eds., 2d ed. 1989). Thus the “casting of lots” to determine parcel layouts now carries an amusing double meaning. *See* 1 THOMPSON ON REAL PROPERTY, at § 6.12(e)(2), at 453 (David A. Thomas ed., 2d ed. 2009).

¹⁹³ NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 405-10.

¹⁹⁴ *See id.* at 404 (stating lots “not to Exceed Eightscore” rods in length unless “a river or Lands already laid out shall make cranks or crooks”). Long lots were disfavored. *See id.*

also prescribed a fixed starting point for each division, and the land was to be laid out from that point according to the order from the lottery, running up and down to prescribed points while leaving space for roads.¹⁹⁵ In other words, the lottery listing indicated who owned next to whom.

Despite prescribing the maximum length and starting point for the division, the townsmen did not prescribe the contours of any single parcel. Each parcel's dimensions were only recorded after they were surveyed, as opposed to being determined in advance. The town gave the appointed surveyors and "sizers" discretion to determine the exact layout and boundaries of properties appropriate for each division of land, without any predetermined map.¹⁹⁶ Surveyors were tasked with determining the overall layout of lots, while sizers were tasked with sizing the lot fairly in light of its location and any issues with land quality (for example, a pond in the middle of the meadow).¹⁹⁷ Some residents were still dissatisfied with the sizers' opinions; by 1682, just two years after the third division, a group of residents approached the townsmen about getting some additional land near their third division properties because the huge trees on the neighboring land cast so much shade that farming their lands was difficult.¹⁹⁸ Such complaints notwithstanding, sizers were ordered to determine the lot shapes and any adjustments "by theyer prudence and best discretion" according to the order prescribed by the lottery.¹⁹⁹ Perhaps to ensure the fairness of their survey, the surveyor and sizers attended to surveying in groups, and an oversight committee was appointed to help advise them how to proceed if they should run into any difficulties.²⁰⁰

Understanding this method of land allocation carries important lessons about metes and bounds descriptions. First, recall the "half Division" deed from Abigail Jones in Section I.B.²⁰¹ The "half Division" was a reference to an area, but it also pointed to a body of written product, including the list of lots and neighbors, the names of the area surveyors, and other documents. In

at 36 (complaining of Matthew Moulthrop's request, "considering how Inconvenient it lay in a long narrow slip").

¹⁹⁵ *Id.* at 404 (describing how lots should turn "upward" and then "downward" and then "up againe" and "down againe").

¹⁹⁶ *Id.* at 401 ("[The] committee had had considerations laetly about it and had thoughts of som persons that might be fit as sizers to lay out y^e sd diuision, and now if y^e Towne were satisfied with them they might establish them . . .").

¹⁹⁷ PRICE, *supra* note 36, at 13, 31.

¹⁹⁸ NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 425 (request of Mr. Harriman).

¹⁹⁹ *Id.* at 401.

²⁰⁰ *Id.* at 404 (making exception for rules governing lot length where "Lands already laid out shall make cranks or crooks").

²⁰¹ *See supra* note 78 and accompanying text.

other words, reference to a division in a deed—a regular occurrence²⁰²—was a way of pointing to a separate set of records which could be consulted. The highly customized descriptions in the metes and bounds deeds were supplemented by an additional body of information on record with the town, and names of other individuals—neighbors, surveyors, sizers, committee members—who might have assisted with boundary location.

In sum, the history of New Haven’s property system shows that customized descriptions may have been less vague and incomprehensible than they appear to modern readers. Critically, legal processes and social interactions created and distributed knowledge needed to interpret descriptions. Deeds in the rectangular system relied on addresses by meridian, range, township, and section, making knowledge of the land’s boundaries accessible to professionals with the requisite background knowledge of the grid system from education or experience.²⁰³ But various legal practices and institutions surrounding metes and bounds planning also created and distributed background knowledge, not just to surveyors and other professionals but to the community at large. This local knowledge made customization possible. Though natural features referenced in deeds might disappear or decay, the legal regime created many witnesses. Perambulators, surveyors, and sizers were all able to discuss the layout of the property, as well as their memories of it and its natural features. In colonial Connecticut, at least, legal rules and institutions were set up to make the process of identifying witnesses and locating other information much easier than it otherwise might appear. Even the surveying system produced substantial written records, meaning that deeds referencing a division—of which there were many—could lead inquirers to more witnesses and further information.

Beyond their function in assisting the parties and others with locating property, the recordings were dense with information. Among other things, they referred to neighbors who could be called upon in the event of a dispute, the types of plants and trees on the property, and expected land uses. These descriptions were highly customized and dependent on local knowledge: the language used to demarcate boundaries and provide the location of land was comprehensible to a small, finite group. These owners and features are overwhelmingly impossible to identify now. But at the time, local knowledge and practices on the ground provided valuable tools for translating even the most imprecise boundary descriptions.

²⁰² *E.g.*, Deed of March 4, 1685 (recorded March 4, 1685), in 1A NHLR, *supra* note 74, at 271-72 (“third division”); Deed of April 25, 1705, in 2 NHLR, *supra* note 74, at 385 (“half Division”); Deed of January 24, 1706, in 2 NHLR, *supra* note 74, at 445 (“third Division”); Deed of Feb. 19, 1707, in 2 NHLR, *supra* note 59, at 506 (“half Division”).

²⁰³ See Libecap & Lueck, *supra* note 5, at 427.

D. Litigating

One of the oft-repeated criticisms of metes and bounds descriptions is that their imprecision and lack of standardization depresses property values and leads to more disputes over boundaries and more difficulties resolving them. Given currency fluctuations and scores of forms of currency, it is extraordinarily difficult to track land values between the colony's settlement and the American Revolution. Nevertheless, it is possible to examine records of boundary disputes in various iterations of the New Haven and Connecticut court systems.²⁰⁴ A review of these records suggests that, in fact, the metes and bounds descriptions were not frequent sources of litigation, certainly

²⁰⁴ Prior to the merger with Connecticut in the 1660s, colonial New Haven had a three-tiered court system, including Plantation (or Particular) Courts, the General Court, and the Court of Magistrates. These higher courts resolved disputes and serious criminal allegations but "combined judicial, legislative, and executive functions." BLUE, *supra* note 53, at 12-14; HENRY TAYLOR BLAKE, CHRONICLES OF NEW HAVEN GREEN FROM 1638 TO 1862, at 149 (1898). There are transcribed and published records surviving from all three tiers. See COLONY RECORDS, 1638-1649, *supra* note 52; RECORDS OF THE COLONY OR JURISDICTION OF NEW HAVEN, FROM MAY, 1653 TO THE UNION (Charles J. Hoadly ed., 1858) [hereinafter COLONY RECORDS, 1653 TO UNION]; NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75 (prefatory note) (noting that the town records contain the records of the Particular Court). After the colony's merger with Connecticut, the first "County Courts" were established in 1665. Trials were also brought in front of justices of the peace in the counties, though these could not decide issues respecting "titles to land." "An Act Concerning Small Causes," 1715 Conn. Pub. Acts 15; Judicial Branch of the State of Connecticut, Connecticut's Courts 12 (2017). The records of the county courts are in manuscript at the Connecticut State Library, and these contain solely judicial and probate business. Still, even after 1665, there are still some disputes appearing in the published town records, suggesting that the local town officials were also resolving some conflicts. See NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75; NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175.

There is one historical oddity that interrupts the County Court records. The records note that because of "Edmond Andross" declaring the courts "dissolved," the County Court did not meet or produce records from November 1687 to June 1689. 1 New Haven Co. Court Rec. 169 (unpublished collection, on file at Connecticut State Library). Edmund Andros was a colonial governing official, and his installation was related to bigger political crises in England and New England. The details of the Andros period are briefly overviewed in CORNELIA HUGHES DAYTON, WOMEN BEFORE THE BAR: GENDER, LAW, AND SOCIETY IN CONNECTICUT, 1639-1789, at 45 (1995). The records of the Connecticut courts during Andros's tenure are published in a slim forty-one-page volume. See RECORDS OF THE PARTICULAR COURT OF THE COLONY OF CONNECTICUT, ADMINISTRATION OF SIR EDMOND ANDROS, ROYAL GOVERNOR, 1687-1688 (A.E. Trumbull ed., 1935).

This covers all the fora where boundary disputes were likely brought. Although town officials charged with evaluating fences, called "fence viewers," eventually came to have some authority in resolving boundary disputes in other jurisdictions, *see, e.g.*, MASS. GEN. LAWS ch. 49, § 14, I have not found evidence that fence viewers had this power in Connecticut during this period.

compared to other sources of disputes. Further, an examination of the few cases that did arise reveals the importance of community knowledge as a source of evidence used to resolve such disputes. The reliance on neighbors' recollections and similar sources reinforces the argument made in this Part that other legal and social institutions supplemented metes and bounds descriptions, making them less inscrutable to the inhabitant of colonial New Haven than they appear today.

I have reviewed all the court and town records that survive from the first fifty years of New Haven's history, except for about nine years missing from some courts' records.²⁰⁵ I have reviewed these records both for boundary conflicts and for other actions relating to property that suggest the true objective of the action is resolving conflicting claims to the same land.²⁰⁶ I have not counted disputes that are unrelated to boundaries or the validity of a survey (for instance, conflicts over shares of an inheritance, grantors selling the same parcel twice, and forgeries of land sale documents).²⁰⁷ I have also not counted conflicts over maintenance of fences, although fencing law certainly had the salutary effect of helping to cement boundaries. Conflicts over fencing typically involved the fallout from animals escaping and damaging crops or else controversies over who should have to pay to repair or maintain a common fence.²⁰⁸ In other words, fence disputes were not about

²⁰⁵ A set of colony records containing the General Court and Court of Magistrates records from April, 1644 to May, 1653 had been lost sometime in the eighteenth century. COLONY RECORDS, 1638-1649, *supra* note 52, at iv. The town records containing Particular Court disputes from that period survived. *See supra* note 52.

²⁰⁶ This tracks the methods of other scholars. To support their assertion that boundary disputes occur more frequently in metes-and-bounds regions, Gary Libecap and Dean Lueck searched Ohio legal databases for "the terms 'boundary,' 'quiet title,' 'trespass,' and 'ejectment'" to locate property disputes in the region, further classified the results, and counted boundary disputes, disputes over the validity of the recording, and disputes over the validity of the survey, especially because disputes over validity were often boundary disputes in disguise (in other words, my claim to this land is valid and yours is not). Libecap & Lueck, *supra* note 5, at 453-54.

²⁰⁷ *See, e.g.*, COLONY RECORDS, 1638-1649, *supra* note 52, at 59 (relating to land sale contract between brothers); *id.* at 84 (relating to forgery of a deed); *Wright v. Loote*, 1 New Haven Co. Court Records 14, 14 (June 10, 1668) ("action of ye case respecting ye title of Land," but determined to be a "fraudulent conveyance"); COLONY RECORDS, 1638-1649, *supra* note 52, at 221-25 (describing how in 1645, Thomas Fugill, the court reporter and secretary, had forged entries in a land distribution awarding himself more property than his fair share).

²⁰⁸ *See, e.g.*, *Yale v. Royce*, 1 New Haven Co. Court Rec. 150, 150 (Nov. 12, 1684) ("insufficient fences"); *Glover v. Hill*, 1 New Haven Co. Court Rec. 90, 90 (June 14, 1676) ("nonattendance of the fence"); NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 53 (describing a number of people fined for failing to mend fences).

competing claims to the same piece of land.²⁰⁹

Strikingly, there were very few disputes plausibly over boundaries for the first several decades of New Haven's history. Residents were litigious—they brought disputes over conversions of personal property, defamation, breached contracts, and unpaid debts.²¹⁰ Without counting all the thousands of law suits, this study does not illustrate exactly how rare boundary disputes were. But to give two data points, between 1649 and 1662, there were approximately eighty private disputes brought to the New Haven Particular Court. Just one involved land boundaries.²¹¹ The County Court records from June 1666 to August 1687 contain one hundred and sixty-nine manuscript pages, memorializing one to as many as nine issues apiece.²¹² A clear boundary dispute is found on only one page.²¹³

Possible land disputes can be classified in different groups. Of all business in New Haven between 1638 and 1688, there were five disputes that clearly involved boundaries and one additional incident where the town was asked to “settle” boundaries among three owners (perhaps in advance of a conflict).²¹⁴ Five additional conflicts relating to land are described in ways that could make them boundary disputes, but they just as well could be ordinary trespasses or conveyancing problems.²¹⁵ And there are three more

²⁰⁹ Related to fencing, I have excluded cases where the only allegation is something like a crop being stolen or hogs trespassing on land. *See, e.g.*, COLONY RECORDS, 1638-1649, *supra* note 52, at 148; Tuttle v. Alcock, 2 New Haven Cty. Court Records 133, 133 (1703) (neighbors “have caused the whole or a greater part of the grass growing on [plaintiff’s] meadow to be cutt and removed”). These could plausibly be claims that a neighbor was grazing or harvesting over the boundary line, rather than true claims about thefts of crops or damage by animals. But given that settlers did bring direct trespass actions relating to boundaries, it seems unlikely that the parties would litigate boundaries in this roundabout way.

²¹⁰ *See, e.g.*, NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 2-3, 12, 16, 371-72, 415, 465.

²¹¹ *Id.* at 405-07.

²¹² 1 New Haven Co. Court Rec. 1–169. Page 166, for example, has nine issues.

²¹³ Osborn v. Fowler, 1 New Haven Co. Court Rec. 128, 128 (Nov. 9, 1681).

²¹⁴ *Id.* (“action of the case respecting the bounds of a certaine parcell of meadow” between Osborn and Fowler); COLONY RECORDS, 1638-1649, *supra* note 52, at 174 (charging Thomas Robinson with “remo[v]ing land marks” in 1645 and taking another’s meadow); COLONY RECORDS, 1653 TO UNION, *supra* note 204, at 179-80, 214 (describing Widow Plume “fencing more than her due proportion” circa 1656); 1 NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 405-07 (the 1660 Atwater-Goodenhouse dispute discussed in this Section); NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 392 (complaint of Brockett that he was “put of” his land by adjoining owners); *id.* at 420 (record of *Osborn* in the town records); *see also* NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 286 (settling boundaries among Glover, Leetes, and Alsup in 1671).

²¹⁵ Thomas v. Clarke, 1 New Haven Cty. Court Records 146, 146 (June 11, 1684) (“action of the case” respecting pieces of land “neare their dwellings” on the “West Side,”

actions described only as “unlawful detentions” of land, which could refer to a section of property or an entire lot.²¹⁶ In short, for decades of recorded New Haven history, there are only between five and fourteen actions that potentially relate to the ambiguities of metes and bounds. This small number of actions suggests that metes and bounds descriptions did not breed as much uncertainty and litigation as one might expect.

Although there are very few recorded boundary disputes, we can tell how metes and bounds descriptions fared in court by studying them closely. Of the handful of disputes prior to 1688, the Atwater-Goodenhouse dispute around 1660 is by far the property dispute recorded in the most detail.²¹⁷ We probably owe the depth of description to a few oddities of the case. First, it was an action for both defamation and trespass, because Atwater claimed he had been harmed by Goodenhouse spreading the rumor that he did not own the lands he had since sold in the disputed territory.²¹⁸ Second, it took four years for the New Haven court to settle the matter, even with intermittent admonishments that the parties should try to settle the business themselves.²¹⁹ The dispute was complicated enough that it was brought up in at least four

though the parties then “informed [the] court, that they were agreed” before the jury verdict); COLONY RECORDS, 1638-1649, *supra* note 52, at 261–65 (describing land claim of Thomas Mulliner that could be a boundary conflict or contract dispute, though Mulliner started “pulling vp the sticks & throwing them away” while the surveyor was figuring out the bounds of his property); COLONY RECORDS, 1653 TO UNION, *supra* note 204, at 205, 274-75 (describing problem with Owen Morgan’s property because “some of the land and meddow was sould before he bought it” and “Henry Lindon layes claime to some of the land”).

Thomas Robinson—party to one of the five clear boundary disputes and a frequent defendant in the New Haven courts, *see* *Town of Guilford v. Robinson*, 1 New Haven Cty. Court Records 90, 90 (June 13, 1677) (charging Robinson with assorted mischief)—in his old age again encroached on land not belonging to him (this time belonging to the town). It is unclear whether this is a boundary dispute or merely Robinson’s fraudulent attempt to seize common property. *In re Robinson*, 1 New Haven Cty. Court Records 90, 90 (June 14, 1676). Robinson was also engaged in a third possible boundary dispute in 1680, where he “thr[ew] down a fence” and “let[] in cattle to considerable loss,” although this incident could just be malicious trespass. *Stone v. Robinson*, 1 New Haven Cty. Court Records 123, 123 (Sept. 8, 1680).

²¹⁶ *Jordan v. Chittenden*, 1 New Haven Cty. Court Records 150, 150 (Nov. 12, 1684); *Sergeant v. Praxson*, 1 New Haven Cty. Court Records 29, 29 (June 8, 1670); NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 173 (conflict between Joanna Allerton and Henry Glover over “Land detained”).

²¹⁷ NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 405-07.

²¹⁸ *Id.* at 405.

²¹⁹ NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 39-40 [hereinafter *Atwater Case IV*] (resolution of case on April 7, 1663, with admonishments to parties); NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 405 [hereinafter *Atwater Case I*] (start of litigation on June 7, 1659).

sessions of court.²²⁰ Third, the Governor of New Haven Colony had been approached by one of the parties and recounted their conversation in court.²²¹ Still, the Atwater Case can be used to understand how a boundary suit might have looked, even if an ordinary dispute might have been less involved and protracted.

The dispute started when Goodenhouse, the defendant, felled trees near the boundary line, and Atwater, the plaintiff, confronted him. Goodenhouse and his wife claimed to others that both Atwater and the original surveyor of Atwater's parcel, Lieutenant Seely, "had dealt vnrighteously in laying it out."²²² Atwater's plot was described as being "[laid out] *to him*" and without reference to a division, suggesting that the land might have been surveyed after he requested an individual grant, as opposed to being part of a group land distribution.²²³

To determine the rightful line between Atwater and Goodenhouse, the court looked to three sources of evidence: witness testimony, parcel history, and documentation. Witness testimony was the most important source of information about the property. The court heard testimony by multiple individuals over the course of the four-year dispute: a man who cut wood on the property fifteen years earlier and saw a marked stake which he believed to be the line; a man who cut pipe staves on the property near a certain marker and paid Goodenhouse's predecessor for that right; and three men who claimed Goodenhouse's predecessor had shown them each the bounds of the land so that they could do work on it felling trees and erecting fences.²²⁴ The court also heard the lengthy testimony of the person who had since bought Atwater's land, Samuel Marsh, who recalled that twelve years earlier, he had spoken to several men who told him where the boundaries were—even though one of those men now denied this account in testimony before the court.²²⁵ New Haven was unusual among the early colonies in that it used judges to decide cases, rather than juries, until its merger with Connecticut.²²⁶ Witnesses might thus have been extra important in informing the judges of the facts underlying the dispute, since there were no jurors to bring their own

²²⁰ See *supra* note 219; see also NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 21-22 [hereinafter Atwater Case III]; NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 514-16 [hereinafter Atwater Case II] (1662 testimony of person seeking to buy Atwater land about his knowledge about the parcel's history).

²²¹ Atwater Case I, *supra* note 219, at 406.

²²² *Id.*

²²³ *Id.* (emphasis added).

²²⁴ *Id.* at 406-07.

²²⁵ Atwater Case II, *supra* note 220, at 515-16.

²²⁶ HISTORY OF THE CITY OF NEW HAVEN, *supra* note 34, at 4.

knowledge to court.²²⁷

Marsh's testimony is particularly interesting because it reveals the process of buying land. Marsh saw some land while working with a friend in the meadow; finding it a "pretty good peice of land," his friend advised him to go talk to the presumed owner, Atwater.²²⁸ Atwater and Marsh met, and Atwater agreed to sell some of his land, directing him to go over the bounds with Lieutenant Seely. At first, Seely merely told Marsh where the line was, based on characteristics of the property (including marked trees and natural features). Marsh traveled with fellow residents Parker and Wooden to look for the markers, but they were confused by the location of the markers described by Seely. Wooden recognized some and thought that Captain Turner, the owner of Goodenhouse's property before Goodenhouse, had built a barn and worked on certain pieces that appeared to be within the bounds of the Atwater property.²²⁹

Marsh bought the land despite the confusion, but then asked Seely to come back and draw out a plot and show him the lines. Lieutenant Seely arrived and pointed out a tree marked with "2 noches, w^{ch} he s^d signified the second Lott,"²³⁰ a colonial analogue of the modern house number. Marsh's testimony relating this story was admitted and weightily considered by the General Court, even though he was obviously interested in the outcome of the dispute between his grantor and Goodenhouse. Still, in an early property dispute in which witness testimony was critical, the testimony of the purchaser about what he thought he was buying was probably valuable.

After witness testimony about the boundaries, the second-most important source of information for the courts was parcel history. The court looked at evidence pertaining to the owner before Goodenhouse, Captain Turner, including his ownership and work on the property and the structures he built on it over the preceding fifteen years.²³¹ As with testimony, the validity of this information was bound up with the identity and reputation of the owner. Indeed, the defendant's key argument from parcel history was that it did not make sense that a man of stature like Captain Turner would build a barn and

²²⁷ Scholars dispute how "self-informing" juries were; in other words, how often they brought their own knowledge to court to resolve cases. *See, e.g.*, Daniel Klerman, *Was the Jury Ever Self-Informing?*, 77 S. CAL. L. REV. 123, 124-26 (2003); John Marshall Mitnick, *From Neighbor-Witness to Judge of Proofs: The Transformation of the English Civil Juror*, 32 AM. J. LEGAL HIST. 201 (1988). In any event, because New Haven did not use *any* jurors for a few decades, the role of the witnesses may have been particularly important.

²²⁸ Atwater Case II, *supra* note 220, at 515.

²²⁹ *Id.*

²³⁰ *Id.*

²³¹ Atwater Case I, *supra* note 219, at 406.

a fence on another man's property.²³²

The third source of information for the court was documentation. Yet there were very few relevant written records: Atwater was only able to produce the plot of the land that Lieutenant Seely drew at his request once there was already confusion about the boundaries.²³³ Conspicuously absent from the court records are references to other documentary records that might have existed—the recorded deed,²³⁴ any contracts, the original survey by the surveyor, or the entry in the town records where Atwater requested the land.

To solve the long-running dispute, the court sent two representatives for each party to go with a surveyor to try to figure out the boundaries.²³⁵ It is significant, though, that the court tried to have Atwater and Goodenhouse work it out themselves first.²³⁶ Unfortunately, in the Atwater case, the parties bickered until the end, with Goodenhouse claiming that even the court-ordered survey was flawed.²³⁷ The court ultimately held that Atwater (and thus his grantee, Marsh) was entitled to the disputed piece of property. But because Atwater had never claimed Captain Turner's barn to be on his property before Turner died, both parties had to bear their own costs of survey and litigation, with Goodenhouse owing just ten shillings for his encroachments over the original property line.²³⁸

With a better sense of these disputes, we might now revisit why there were apparently so few of them. Perhaps it was not worth litigating over boundaries because contemporary land use patterns made ownership matter less at the peripheries. There is a grain of truth to this; many homeowners then, as now, probably could not accurately identify the precise boundaries of their home lots. However, even modern landowners would likely litigate over boundaries if the boundary zone contained a valuable resource. In the seventeenth century, colonists frequently extracted resources from the land, meaning boundaries were quite important to set the outer limits of where timber could be cut, cattle grazed, or fields rotated.²³⁹ In other words, there

²³² *Id.*

²³³ *Id.*

²³⁴ The record might not have helped much, having now located it. It describes property “lying neere the Mill, bounded wth the Mill river on the one side, the rocke on the other, one end butting vpon the land that was Captaine Turners.” NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 60, at 110.

²³⁵ Atwater Case II, *supra* note 220, at 515-16.

²³⁶ Atwater Case IV, *supra* note 219, at 39-40 (laying blame on both parties for the long business).

²³⁷ *Id.* at 39 (“M^r Goodenhouse pleaded y^t dauid Atwater had not attended y^e order of y^e Court in not takeing two men with . . . the surveyo^r . . .”).

²³⁸ *Id.* at 39-40.

²³⁹ *See supra* note 124 and accompanying text.

is no reason to think that existing land use patterns made these colonists care less about boundaries than residents would in other periods in history.

A more availing reason for the low volume of litigation is that land was comparatively more abundant in the colonial period, meaning landowners might have been placated with additional property if their neighbors encroached.²⁴⁰ Obtaining replacement property was never costless and not always easy: when parcels were laid out in groups, land in that area rapidly became scarce, and the colonial government tightly controlled settlement of new areas,²⁴¹ as the preceding Section described. But if obtaining other land was cheaper than litigating, then it would logically reduce the frequency of litigation. New Haven officials even cited the availability of land once in encouraging parties to settle out of court rather than pursue litigation: “ther being meadow enough there for euery mans proportion[, they should be] . . . neighbourly & Louingly to Consider & agree soe as euery man may haue his proportion.”²⁴²

This quote about neighborliness illustrates another important point. In addition to land availability, other features of colonial society also minimized the amount of litigation associated with metes and bounds. The Atwater case demonstrates that the system was wholly dependent on local knowledge to interpret boundaries at the litigation stage, be it in the form of witness testimony or the general reputation of a parcel owner. Community was important to evidence, but it was also used to avoid litigation altogether; in the Atwater case and others, parties were advised by the court to work it out themselves before approaching the court system.²⁴³ Because boundary

²⁴⁰ I have counted this as a boundary dispute, but there is a record of a resident asking the town for other land rather than suing the trespasser. This resident “complayned that by y^e possessors of aioyning Lot he was disturbed or put of his sayd Land, [and] now requested that y^e Towne would let him haue it ther or in som other sutable place.” NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 392.

²⁴¹ In 1667, when there was still plenty of land to be divided, the New Haven government was evicting squatters without proper claims in unsettled regions. *See id.* at 209-10.

²⁴² *Id.* at 420.

²⁴³ *See* COLONY RECORDS, 1638-1649, *supra* note 52, at 306; NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 420. While the Atwater case is a bit of an outlier for the reasons mentioned earlier, *see supra* 218-221 and accompanying text, it does suggest litigation was costly and thus rational neighbors would have opted to negotiate to avoid those costs. Social connections may have further reduced negotiation costs, helping to minimize the number of recorded disputes. There is no reason to presume that boundary disputes were costlier than other forms of litigation and thus especially unlikely to end up in court relative to other types of conflicts. Other private and public actions could likewise require significant involvement by witnesses and officials. *See, e.g.*, COLONY RECORDS, 1638-1649, *supra* note 52, at 233-39 (describing investigation into various misdeeds of Thomas Robinson and others); *id.* at 242-57 (describing investigation into “miscarriadges” of Mrs. Brewster, Moore, and Leech); *id.* at 257-59 (describing testimony relating to defamation action); *id.* at

conflicts that led to court disputes are the only ones that left records, we cannot know how many boundary conflicts were resolved through either arbitration or neighborly settlement.²⁴⁴ This was, however, a system in which the community bore the brunt of the work of maintaining and recalling property boundaries and also the task of resolving disputes before litigation.

Systematic study of the property system in early New Haven reveals several hidden features. First, metes and bounds descriptions were customized, rich, and idiosyncratic. Although many did not even describe a path around the property—instead referring only to nearby people and things—they contained all sorts of information generated by surveyors and important to the transacting parties. Second, despite the vagaries inherent in metes and bounds descriptions, perambulation and land distribution mechanisms made these documents easier to interpret. The names of neighbors and references to divisions or neighborhoods were relevant to contemporaries and provided evidence about witnesses familiar with the bounds. Finally, by examining boundary litigation in New Haven’s early history, it becomes clear that courts relied heavily on witness testimony and neighborly norms to resolve disputes and encourage out-of-court negotiation. These features, along with the relative availability of land, kept the number of boundary conflicts to a minimum.

II. THE EVOLUTION OF METES AND BOUNDS

Many of the legal and social practices described in the preceding Part were suited to a particular social context: a small, close-knit community of settlers.²⁴⁵ New Haven would not stay that way for long. This Part discusses changes in society that undermined the social networks on which the New Haven metes and bounds system was built. The first Section outlines some of the demographic and economic changes that New Haven underwent during the eighteenth century, including the growth and diversification of the area’s populations. The second Section discusses legislative responses to those changes: efforts by the local and colonial governments to keep the costs

268-70 (describing testimony relating to slander); *id.* at 281-91 (containing testimony relating to negligence in loss of a boat).

²⁴⁴ Formal arbitration processes were known in Connecticut before 1700, but successful arbitrations left no records. *See* MANN, NEIGHBORS AND STRANGERS, *supra* note 24, at 101, 104-5 & n.10.

²⁴⁵ *See* Ellickson, *Property in Land*, *supra* note 29, at 1320-21 (“A close-knit group is a social entity within which power is broadly dispersed and members have continuing face-to-face interactions with one another. By providing members with both the information and opportunities they need to engage in informal social control, conditions in such groups are conducive to cooperation.”).

associated with the land demarcation system under control. The final Section considers changes in the land deeds and court records. Altogether, these changes demonstrate how the functionality of metes and bounds depended in large part on underlying social conditions and how the disappearance of those conditions ultimately led to change.

A. Signs of Strain

New Haven was founded as a Puritan religious paradise by just over two hundred people from London.²⁴⁶ At first, its growth was measured. The county surrounding the town had about 5,000 residents by 1700, but only 500 residents within the town itself.²⁴⁷ In other words, occupancy merely doubled in the first sixty years of the colony's existence.

Soon, however, New Haven would undergo far more exponential growth. By 1756, the county boasted over 18,000 residents and the downtown over 5,000 residents—a nearly ten-fold increase in six decades, as opposed to the doubling that occurred in the six decades before.²⁴⁸ By 1774, on the eve of the American Revolution, the county was home to over 26,000 individuals, with the town of New Haven a thriving port city of about 8,000 residents.²⁴⁹ This demographic growth was due to the colony's prosperity. New Haven underwent an economic boom between 1700 and 1750, as new policies from London encouraged the colony to send livestock and other goods to the West Indies.²⁵⁰ The amount of tonnage in New Haven's harbor increased dramatically—New Haven had turned out not to be a great agrarian destination, but its oceanfront location made it a mercantile hub.²⁵¹ In addition to growing commerce on the water, the town and surrounding area engaged in commerce on the ground with other parts of New England.²⁵²

²⁴⁶ HISTORY OF THE CITY OF NEW HAVEN, *supra* note 40, at 1.

²⁴⁷ DAYTON, *supra* note 204, at 53. Determining the population with precision is challenging. Atwater gives New Haven's population as 330 as of 1700, which seems far too low, unless he is referring only to the downtown. HISTORY OF THE CITY OF NEW HAVEN, *supra* note 40, at 22. Other sources suggest the county was about 800 by 1640 and maybe even 2500 by 1643. EVARTS BOUTELL GREENE ET AL., AMERICAN POPULATION BEFORE THE FEDERAL CENSUS OF 1790, at 47 (1993); CARLA GARDINA PESTANA, THE ENGLISH ATLANTIC IN AN AGE OF REVOLUTION, 1640-1661, at 231 (2009).

²⁴⁸ GREENE ET AL., *supra* note 247, at 59.

²⁴⁹ *Id.*; HISTORY OF THE CITY OF NEW HAVEN, *supra* note 40, at 32.

²⁵⁰ See generally ROLLIN G. OSTERWEIS, THREE CENTURIES OF NEW HAVEN, 1638-1938, at 101 (1953); Thomas R. Trowbridge, Jr., *History of the Ancient Maritime Interests of New Haven*, 3 PAPERS OF THE NEW HAVEN COLONY HISTORICAL SOCIETY 85 (1882).

²⁵¹ DAYTON, *supra* note 204, at 53-56.

²⁵² In 1717, the Connecticut legislature permitted John Munson of New Haven to set up a wagon route from Hartford to New Haven "to pass and transport passengers and goods,"

The rise in population destabilized the social network.²⁵³ Many newcomers arrived with new religions, occupations, and social ties. In the first seventy years of New Haven's existence, individuals interacted repeatedly and frequently at religious services and as trade partners—not all five thousand county residents, certainly, but smaller groups within that set.²⁵⁴ As strangers untethered to the community entered the property regime in massive numbers, they disrupted the social system on which it was built.

There was a secondary effect from population growth. As the turn of the eighteenth century arrived, the amount of available land was shrinking just as it was elsewhere in the colonies.²⁵⁵ In his study of Massachusetts, historian David Konig has attributed the increase in property litigation and title claims in Essex County between 1660 and 1680 to the growing scarcity of land during that time period, as new residents and second-generation colonists sought to claim their shares.²⁵⁶ New Haven was subject to similar pressures. The town records from the early eighteenth century note that “until very lately” no one had questioned certain boundaries, but now the town was being asked to confirm them.²⁵⁷ Residents were increasingly requesting new grants and “exchanges” of land from the town.²⁵⁸ Even the division system of allocating land was coming under threat. In 1698, a small number of townsmen had grown concerned enough about further disposals of undivided land that they tried to get the town to prohibit future disbursements.²⁵⁹ By the early 1700s, the town government struggled to decide whether to continue to distribute land to descendants of the original investors in the colony or to allow the influx of new residents to buy in.²⁶⁰ And by 1710, after the fourth

on the condition that he faithfully do so from spring through fall or else face penalty of fines. 6 PUBLIC RECORDS OF THE COLONY OF CONNECTICUT 37 (1872).

²⁵³ Cf. MANN, NEIGHBORS AND STRANGERS, *supra* note 24, at 110-11 (describing these changes in Connecticut more generally). Mann traces changes in the debt litigation system to these social changes and other contemporary changes in procedure to changing notions of law during this time.

²⁵⁴ HISTORY OF THE CITY OF NEW HAVEN, *supra* note 40, at 19-20.

²⁵⁵ See Konig, *supra* note 24, at 153-54; see also MANN, NEIGHBORS AND STRANGERS, *supra* note 24, at 110.

²⁵⁶ Konig, *supra* note 24, at 153-55.

²⁵⁷ NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 543.

²⁵⁸ See LEVERMORE, *supra* note 163, at 171; see, e.g., NEW HAVEN TOWN RECORDS 1684-1769, *supra* note 175, at 562-63 (recording town's exchange with William Thomson in 1725); *id.* at 198 (request for exchange from Dickerman, Goodyear, and Thomson in 1703).

²⁵⁹ See LEVERMORE, *supra* note 163, at 171.

²⁶⁰ See also NEW HAVEN TOWN RECORDS 1684-1769, *supra* note 175, at 198 (making residence in New Haven in 1702 a precondition for disbursement unless out at sea or apprenticed). Compare *id.* at 184 (suggesting at first that purchasers could have no right in “undivided Lands”) with *id.* at 207 (“[A]ny person or persons shall have any Right to Land

division, the proprietors were concerned that there might not be enough land to go around for the fifth division.²⁶¹

Something had also happened to perambulation. The perambulation law remained in Connecticut's legal code even after the American Revolution.²⁶² But some scattered evidence suggests that the practice may not have been so common as it once was. In one dispute, a younger man appeared in court to testify about what his deceased father might have said about the boundaries, but he had evidently never perambulated the property himself.²⁶³ Two sons came to court in 1717 after calling a surveyor "to show the former bounds" of their father's property. The group failed to locate one of them, and the surveyor noted only that he had "sett [them] off I think as at first."²⁶⁴ In the eighteenth century, New Haven officials often appointed surveyors to "try to find the bounds" of lands formerly laid out.²⁶⁵ These boundaries had evidently been forgotten by both owners and neighbors.

One potential reason for the decline of community boundary walking was the rise of absentee owners: children and grandchildren who inherited the original proprietors' lands but moved to other areas of the future United States. Around this time, the town began to address absenteeism through its land-distribution scheme, requiring proof of residence before the descendants of proprietors would receive new properties.²⁶⁶ It makes sense that perambulation might have decreased if absenteeism was on the rise: if owners no longer lived and worked on the property as they had a half-century before, they would not be readily available to participate in boundary maintenance and recall.

in the Half Division by his own Right or by his predecessors or by purchass" (footnote omitted)).

²⁶¹ *Id.* at 295.

²⁶² See 179 Conn. Pub. Acts 15 (1769); 1805 Conn. Pub. Acts 56-57. Perambulation has not died out completely. Ben Leubsdorf, *Some Devoted New Englanders Went for a Stroll in 1651 and Haven't Stopped Since*, WALL ST. JOURNAL (May 23, 2015), <http://www.wsj.com/articles/some-devoted-new-englanders-went-for-a-stroll-in-1651-and-havent-stopped-since-1432308932> [<https://perma.cc/6X7R-V889>].

²⁶³ NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 544 (recounting witness's testimony that he "heard his father" discuss the boundaries, compared with other testimony about perambulations and surveys).

²⁶⁴ *Id.* at 392.

²⁶⁵ *Id.* at 721; see also *id.* at 198 (describing a search for bounds in 1703); *id.* at 700 (containing request for settlement of bounds "So that [the owner] May Know how far his Lands Extends").

²⁶⁶ *Id.* at 198 ("Voted that the persons that by the pole or head shal be allowed in the 4 devision are the proprietors that made the purchas in the year 1683 and their children and that were in this town in January 1702 only allowing to persons gone to sea and prentices bound out to Learn trades whose parenc Live in the town.").

The pressures of time, population, mobility, and land scarcity threatened the social context that had permitted metes and bounds descriptions to exist with relatively few disputes. The threat soon seemed significant enough that town and colony leaders made changes to fix boundaries more permanently and to avoid ensuing transaction and litigation problems. The next Section explores those responses.

B. Legislative Responses

Connecticut's passage of a slew of property laws between 1717 and 1727 indicates that the colony was struggling to gain control over the settlement of land and a rising number of property disputes.²⁶⁷ The preambles to these pieces of legislation make those pressures clear. Several of the preambles cite difficulties in ensuring "Orderly Settlement,"²⁶⁸ or "Quarrels" over property wasting considerable "Time, and Treasure."²⁶⁹ The increased scarcity of land received mention, too. The preamble to a law governing inheritances passed in 1723 noted that "in the First Settlement of this Colony, Land was of Little Value, in Comparison with what it is now."²⁷⁰

The colonial government was grappling with a few different problems with respect to the land in its jurisdiction. One is well-known to historians: settlers had begun claiming title to land from Native Americans in possession rather than the colonial government authorized to control settlement of particular areas.²⁷¹ Several laws were passed in that period to confront that issue,²⁷² including a law specifically targeted at those who had "pretended to [p]urchase of Indians their Rights."²⁷³ Another problem was that some towns had doled out property according to "ancient custom" without making records in either the courts or town meetings; the General Assembly thus passed a law recognizing the interests conveyed that way and permitting those properties to be recorded and ratified in deeds.²⁷⁴ Other jurisdictions were dealing with squatters on "vacant lands,"²⁷⁵ or individuals who received a distribution of property but went out to settle on it before the official surveys

²⁶⁷ 1750 Conn. Pub. Acts 107-26.

²⁶⁸ *Id.* at 111.

²⁶⁹ *Id.* at 111, 120.

²⁷⁰ *Id.* at 119.

²⁷¹ *See, e.g.,* STUART BANNER, HOW THE INDIANS LOST THEIR LAND: LAW AND POWER ON THE FRONTIER 89-118 (2007).

²⁷² *See* 1750 Conn. Pub. Acts 110; *id.* at 120-21.

²⁷³ *See id.* at 114.

²⁷⁴ *See id.* at 115, 115-16.

²⁷⁵ *See id.* at 111-12.

and records were made, leading to errors and mistakes.²⁷⁶

Metes and bounds descriptions were causing problems, too. By 1719, concerns about boundaries reached the attention of the Connecticut colony government. At a session held in New Haven on October 8 of that year, legislation was enacted entitled “An Act for Preventing great Inconveniences, which may happen by the Loss, or Uncertainty of the Bounds of Land.”²⁷⁷ This act created a formal procedure to be used in advance of litigation over boundaries and to permit revision and re-entry of boundary descriptions in county land records. First, the act noted that “when the Proprietors of Adjoyning Lands, have Lost their Bounds, and cannot agree to the fixing of them,” an application could be made to the local justice of the peace to appoint three disinterested freeholders to “fix” the boundaries—although only two would make a quorum.²⁷⁸ The freeholders were to take an oath, swearing “to Renew, Revive, and set up Bounds, between the Land of [the parties at the particular place,] according to the True, Real and Just Right of the said Parties: You and each of you.”²⁷⁹ Once fixed, the new descriptions of bounds were to be “Entered in the Records.”²⁸⁰ The act noted that a proprietor dissatisfied by the bounds as newly translated would still have an action against the adjoining owner.²⁸¹

The law thus permitted customized metes and bounds descriptions to be reset even without a transfer. References to old markers might be replaced by references to new markers or directional signals. Unfortunately, the town clerk does not appear to have differentiated deeds being re-recorded under this process from deeds memorializing new transfers, though there is a suggestive note about surveyors being sent to “preserve” boundaries of a farm the same year the legislation was passed.²⁸² As a result, although it is difficult to tell how often landowners revived boundaries as an empirical matter, the availability of the process at a minimum indicates both that the metes and bounds system was becoming a problem and that legislators were thinking of ways to address it.

In addition to these changes, newly surveyed lots were subject to a new set of processes that regularized their shape and contours, enabling them to be described and located with more precision. The first change was a proliferation of town-promulgated markers that could be used to locate

²⁷⁶ *See id.* at 125.

²⁷⁷ 1719 Conn. Pub. Acts 246-47.

²⁷⁸ *Id.* at 246.

²⁷⁹ *Id.* at 247.

²⁸⁰ *Id.* at 246.

²⁸¹ *Id.* at 246-47.

²⁸² NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 414-15.

parcels. During a division in 1704, the townsmen began to refer to each line of lots in between highways in each area as numbered “Teers,”²⁸³ making identifying parcels much easier.²⁸⁴ For example, the first lot laid out in a division would be the first lot in the first tier in that number division; because the surveyors proceeded laying out lots up one row and down the next,²⁸⁵ that meant each numbered lot in a numbered tier could be found with relative ease. By the fifth division in 1711, the town stopped using sizers to make ad hoc adjustments to individual lots.²⁸⁶ Deeds from the sixth division and the divisions thereafter suggest that surveys of lots were drawn and put on file with the town to be consulted.²⁸⁷ By 1756, with the eighth division, the town recorded precise lengths and widths in division records.²⁸⁸

The division system, too, soon faded in importance. The changes in population and land availability undoubtedly contributed to its demise, but there were also funding problems. While trying to perform the eighth division in the 1750s, the townsmen faced financial difficulties. Instead of being funded by tax revenue, the costs of surveying new divisions had historically been levied as assessments on the landowners receiving disbursements of land. But now, the rolls of residents receiving disbursements were so long and “the owners of the Lands so laid out [were] very much scattered about the world and many of them altogether unknown,”²⁸⁹ perhaps referring to difficulties keeping track of inheritors of shares or else residents out at sea as New Haven’s population became dominated by merchants as opposed to farmers.²⁹⁰ For these reasons, the townsmen could not collect the funds in

²⁸³ See NEW HAVEN TOWN RECORDS 1684-1769, *supra* note 175, at 337 (describing each “Teer” of the second division of the sequestered land); Deed of Mar. 5, 1712 (recorded Mar. 5, 1712), *in* 3 NHLR, *supra* note 74, at 487 (referring to “my fifth Division Lott being Land out in ye first Tier it being ye third Lott”).

²⁸⁴ See, e.g., Deed of July 28, 1725 (recorded Aug. 16, 1725), *in* 6 NHLR, *supra* note 74, at 706 (identifying property transferred using “the next Teer of Lots” as a marker).

²⁸⁵ See *supra* note 195 & accompanying text. If each

²⁸⁶ NEW HAVEN TOWN RECORDS 1684-1769, *supra* note 175, at 295-96.

²⁸⁷ See Deed of Aug. 3, 1765 (recorded Aug. 3, 1765), *in* 27 NHLR, *supra* note 74, at 225 (“one half of one certain Lot of Land in sd Town in the 9th Division in the Name of Lieut. Abram Dickerman which contains one quarter of an acre & Eight rods bounded according unto the originall Survey on Record”); Deed of Apr. 24, 1738 (recorded Apr. 25, 1738), *in* 10 NHLR, *supra* note 74, at 480 (recording transfer of seventh division lot and referring to survey); Deed of May 6, 1737 (recorded June 14, 1737), *in* 10 NHLR, *supra* note 74, at 356 (“said [sixth division] Land being Bounded as may appear upon Record in the Town of New Haven according to the survey . . . thereof”).

²⁸⁸ 2 New Haven Proprietors Records 58-79 (unpublished collection, on file at New Haven Colony Historical Society) (describing eighth division lot dimensions); *see also id.* at 152-73 (describing a similar program for ninth division lots, laid out in 1767).

²⁸⁹ *Id.* at 52.

²⁹⁰ Other provisions of the law restricted disbursements to nonresidents but made

advance to pay for laying the division out. The town coped by trying to raise money to perform the division through other means,²⁹¹ but obviously this strained the earlier land allocation system.

Perhaps because they were already facing the need to invest town money into the initial surveying of properties, around 1750, New Haven undertook its first survey of unowned parcels for the purpose of selling those properties through an open auction.²⁹² The townsmen surveyed the new development in Oystershell Field, close to the modern downtown.²⁹³ A committee was appointed to “Search y^e Records, Draw a Plan of Small Lotts convenient for building, consider y^e method of Sale, & how y^e money shall be Secured, and the time of Payment, and what shall be necessary to be done in the affair.”²⁹⁴ The committee split the land into seventy-five rectangular lots divided by a few perpendicular streets, and numbered those lots on a filed subdivision map so that they could be easily described in records and sold to any bidder.²⁹⁵ The town had come to act as a primitive form of developer and used standardized lot descriptions in its first effort.

Several legislative changes thus responded to the social pressures put upon the metes and bounds system. First, the colonial government passed laws permitting boundaries to be “revived” without resort to the court system. While no clear records of these revivifications have survived, the law created an extrajudicial procedure for standardizing boundaries and an opportunity outside the context of transfer for updating descriptions. Second, after 1700, the colonial and town governments drastically changed the way that property was surveyed, ostensibly to respond to land scarcity. Property that had formerly been surveyed and allocated by town officials ad hoc was now pre-planned, mapped, and given an address within the division. In addition, land was surveyed and sold without resort to the divisions beginning in about 1750. Together, these changes responded to perceived issues with locating property and boundaries brought on by population growth and a corresponding decrease in the supply of land.

exceptions for men at sea or apprenticing. NEW HAVEN TOWN RECORDS 1684-1769, *supra* note 175, at 198. Presumably, then, these were the “scattered” persons who could not be easily assessed. They likely composed a substantial number. By 1774, approximately 756 residents of the town of New Haven were “seafaring men.” 14 PUBLIC RECORDS OF THE COLONY OF CONNECTICUT 344 n. (1887). That year, the total number of white male residents between twenty and seventy was 1864. *Id.* at 486.

²⁹¹ 2 New Haven Proprietors Records, *supra* note 288, at 52.

²⁹² *Id.* at 9-10.

²⁹³ NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 48 n.

²⁹⁴ 2 New Haven Proprietors Records, *supra* note 288, at 9.

²⁹⁵ *Id.* at 19 (showing numbered lots); see Deed of Dec. 17, 1771, in 32 NHLR, *supra* note 59, at 176, 176 (referring to lot numbers from Oystershell Field development).

C. Administrative and Other Changes

As the town and colonial governments were making top-down changes to the laws governing surveying and land disbursement, recording practices were changing as well. New descriptors gradually crept into the recordings and replaced the earlier ways that parties recording a transaction had described their property.²⁹⁶ Attempting to identify a precise date for that transition is challenging; there are thousands of early-eighteenth-century deeds, making coding these changes through quantitative analysis daunting. But some qualitative evaluation of general trends in the deeds illustrates that the relevance boundary descriptions requiring interpretation by and interactions with community members decreased over time.

First, perimeters finally came into more common use—although certainly not universal use. Recall that earlier metes and bounds descriptions often referred to nearby neighbors without specifying measurements or paths around the property.²⁹⁷ By the beginning of the nineteenth century, many more deeds referred to specific distances,²⁹⁸ or at least to monuments along the property’s edges.²⁹⁹ This was a significant change, and one that is not easily explained by technological advances or increasing professionalism. Innovation in surveying technology remained stagnant over the course of the seventeenth and eighteenth centuries.³⁰⁰ The tools used for measuring—the

²⁹⁶ Another scholar has observed a similar shift in deed descriptions, ostensibly based on a study of deeds involving Native Americans from New England during the same time. “Recording systems, astonishingly sloppy in the beginning . . . became increasingly formalized so that boundaries could be more precisely described.” CRONON, *supra* note 33, at 74-75.

²⁹⁷ See *supra* notes 74-86 and accompanying text.

²⁹⁸ E.g., Deed of Oct. 11, 1782, in 39 NHLR, *supra* note 74, at 197 (describing land “bounded west on the Town Street 38 ft. north on the homelot of Capt. John Mix 89 East on the homelot of Joel Northrop 38 feet—and south on the remainder of my Lot”); Deed of Mar. 27, 1786, in 43 NHLR, *supra* note 74, at 220 (describing land bounded “West on the highway forty Rods and south on Pierpont Edward forty rods East on my fathers land forty Rods north on Mr. Daniel Dolittle & [] Crook so called the whole containing ten acres with the fences and Timber and appurtenances”); see also NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 498 (describing perimeters of properties laid out to Chedsey and Miles).

²⁹⁹ See, e.g., Deed of Aug. 6, 1751, in 16 NHLR, *supra* note 74, at 123; Deed of June 4, 1764, in 25 NHLR, *supra* note 74, at 384; Deed of May 9, 1768, in 29 NHLR, *supra* note 74, at 380; Deed of Jan. 4, 1774, in 34 NHLR, *supra* note 74, at 312; Deed of Feb. 24, 1790, in 44 NHLR, *supra* note 74, at 279 (describing property line to “run Northward by ye highway five rods then to turn Eastward and run to a Cherry tree Stump and thence to continue ye Same line to ye river bounded East on the river North on my Land South on Land of said James Thompsons and west on high way being about one quarter of an acre”).

³⁰⁰ LINKLATER, *supra* note 18, at 15-20; di Bonaventura, *supra* note 131, at 146. Though

compass and Gunter's chain, a device akin to a tape measure—were the same at the beginning and end of the eighteenth century. And while it is true that there were more people around, meaning there may have been a greater number of qualified surveyors, New Haven always had talented surveyors.³⁰¹ In other words, the advent of perimeters in boundary descriptions does not appear to be due to changes in technology or professionals, but may instead reflect the increasing need for precision in the recordings themselves.

Additionally, parcel history and documentation became common parts of metes and bounds descriptions, replacing the names of current neighbors. Names of previous owners and references to matters of public record all became more common in the deeds.³⁰² There are a few possible explanations. For one, as time went on, a given parcel had more record owners to which the deed could refer. Another explanation is that prior owners are an indirect way of referring to documentation, since an interested purchaser could look up previous owners in the indexed land records to locate the parcel. Lastly, because both newcomers and absenteeism were on the rise, residents might not have known about transfers or the current ownership status of neighboring properties. Hence, they relied on what they did know: information about the family that had historically owned the land, as opposed to the current occupants. Even today, one might refer to a house nearby by the names of a family that has long since moved.

Somewhat less commonly, and much later in the eighteenth century, deeds began to refer to named natural and manmade features.³⁰³ In the

new technology would help to ensure surveyors of the Northwest Territory accurately followed the curvature of the earth, that technology was not relevant in bounding New Haven lands. LINKLATER, *supra* note 18, at 15-20.

³⁰¹ See *supra* note 50 and accompanying text.

³⁰² See Deed of Dec. 3, 1750, in 15 NHLR, *supra* note 74, at 142, 142 (referring to documents “as may appear upon Record”); Deed of Jan. 26, 1751, in 15 NHLR, *supra* note 74, at 227, 227 (same); Deed of Apr. 17, 1752, in 16 NHLR, *supra* note 74, at 273, 273 (referring to “Deed to us Recorded 16th Ledger book page 177”); Deed of Mar. 19, 1752, 16 NHLR, *supra* note 74, at 244, 244 (referring to “Doings of the free holders entered upon Record”); Deed of Apr. 7, 1753, in 17 NHLR, *supra* note 74, at 234, 234 (referring to several recorded deeds); Deed of Aug. 3, 1765, in 27 NHLR, *supra* note 74, at 225, 225 (referring to “original Survey on Record”); Deed of Dec. 31, 1771, in 32 NHLR, *supra* note 74, at 132, 132 (referring to prior owners); Deed of Nov. 18, 1771, in 32 NHLR, *supra* note 74, at 375, 375 (referring to the person to whom land was originally laid out); Deed of Jan. 16, 1797, in 47 NHLR, *supra* note 74, at 202, 202 (referring to deed conveyed to owner); Deed of Sept. 6, 1798, in 48 NHLR, *supra* note 74, at 187, 187 (referring to prior deed); Deed of June 1, 1799, in 48 NHLR, *supra* note 74, at 289, 289 (referring to “Division of my fathers Estate on ye records of ye Court of Probate for New Haven District”).

³⁰³ Deed of Jan. 18, 1775, in 34 NHLR, *supra* note 74, at 226, 226 (referring to common field called “Plainfield”); Deed of Oct. 19, 1784, in 41 NHLR, *supra* note 74, at 42, 42 (“Union Street”); Deed of Mar. 24, 1787, in 42 NHLR, *supra* note 74, at 358, 358 (“George

absence of street addresses, a name—whether of a wharf, a park, or a street—would go a long way to help identify a property, particularly when coupled with other information, such as the names of a neighbor or two. The town engaged in more infrastructural planning and street naming by the very end of the eighteenth century.³⁰⁴ This gave surveyors and recorders a new, more stable set of descriptors for referring to properties.

There was no law compelling these changes to how boundaries were recorded and which metes and bounds descriptors were used. But many surveyors and all the recorders were long-serving public officials who shaped standard practices over time. A single surveyor, William Thompson, measured the boundaries of all new properties in the town of New Haven from 1691 to 1727.³⁰⁵ A single recorder, John Alling, served from 1695 until his death in 1717.³⁰⁶ The next New Haven town clerk, Samuel Bishop, served from 1717 to his death in 1748,³⁰⁷ when he was replaced by his grandson Samuel Bishop, who served as town clerk for fifty-four more years (until 1803).³⁰⁸ In other words, three men recorded all of the properties in New Haven for over a century. This was a design feature of the system, not a bug: elsewhere in New England, surveyors and clerks were also typically lifetime civil servants who inherited the position from family members.³⁰⁹

With this sort of institutional memory, surveyors and clerks were well positioned to respond to problems in the land system and influence the content of recordings. Unfortunately, they did not leave records of their decisions to modify metes and bounds descriptions. But there is tantalizing evidence of their efforts to improve recording more generally. On April 4, 1749, the second Samuel Bishop began the fourteenth volume of deeds with an inscription describing his decision to add to the Book of Deeds an index of all the grantors, in addition to the index of grantees that had been included in the past.³¹⁰ In other words, in his first year as the town clerk, the younger Bishop unilaterally decided to reform the indexing system to make the

Street” and “Crown Street”); *see also* Deed of Dec. 17, 1771, in 32 NHLR, *supra* note 74, at 176, 176 (referring to lot numbers from Oystershell Field development).

³⁰⁴ *See* Brady, *supra* note 49, at 541, 544-45.

³⁰⁵ NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 82, 89, 142, 467, 569.

³⁰⁶ *Id.* at 114, 388, 817.

³⁰⁷ *Id.* at 391, 658.

³⁰⁸ *Id.* at 662.

³⁰⁹ Candee, *supra* note 168, at 40; di Bonaventura, *supra* note 146, at 146.

³¹⁰ 14 NHLR, *supra* note 74, at 1 (Whereas it has been y^e practice of my worthy Predecessors [sic] in this office in all the Books of Deeds to make an Alphabet or Table of only ye Grantee—which by my own Experience I have found to be a great Disadvantage—I have therefore by and with y^e advice of Some of y^e wise men of this Town unto this Book made an Alphabet or Table of a grantor or grantors as also of ye grantee or grantees In hopes it will prove and be found by Experience a very great Benefit unto y^e Town now but much more advantageous unto y^e Generations to come.).

records easier to use. The bottom-up changes in metes and bounds descriptions viewable in the land records may thus be due to the agency of surprisingly few individuals, who came to exact and write more precise descriptions of property into the deed books over time.

Whatever the cause, over the eighteenth century, property descriptions began eschewing references to imprecise features and unidentifiable roads in favor of reference to written town records and officially-named streets and infrastructure. As land description in deeds became more standardized, even the most customized descriptors became standardized and less dependent on local knowledge: “highway” became Edwards Street, “rock” became a fixed point in geographic space located a certain distance from two intersections, and so on. The greater use of these standardized variables demonstrates the declining value of collective knowledge in the recording system and the increasing value of standardized information.

Simultaneously, changes occurred within the judicial system. At the turn of the eighteenth century, the New Haven town government was suddenly inundated with many requests to “settle” boundaries of lots among owners where those boundaries had been lost.³¹¹ This suggests that boundary disputes might also have become more frequent. Though I have not systematically counted or read all court disputes occurring after 1688, a preliminary read of some court and town records uncovers numerous land-related conflicts.³¹² In any event, norms that had led courts and the legislature to discourage litigation and encourage cooperation between neighbors or heirs over boundary lines seem to have changed. The town of New Haven

³¹¹ I have located only one request for settlement of bounds prior to 1688, *see supra* note 202, compared to many beginning around 1700, for example in NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 121 (request by Joseph Sackett in 1696 for settlement of bounds with the town); *id.* at 132-33 (request by Edmun Dorman for the same after discovering a defect in his deed); *id.* at 171 (describing need for settlement of boundaries on a farm formerly belonging to Thomas Mulliner in 1701); *id.* at 176 (describing need for settlement of bounds of Fenn’s property in 1701); *id.* at 198 (describing a search for bounds in 1703); *id.* at 412 (describing 1718 problem involving Whiting’s land boundaries); *id.* at 463 (describing “Bounds settled” between Bishop and Watson in 1721); *id.* at 700 (containing request for settlement of bounds “So that [the owner] May Know how far his Lands Extends”).

³¹² *Id.* at 357 (describing a boundary dispute between Samuel Thomson and Stephen Munson in 1714); *id.* at 759 (describing problem of individuals encroaching on town highways circa 1762); *Tuttle v. Woodward*, 3 New Haven Cty. Ct. Recs. 334, 334 (1731) (action for “removing sundry Land Marks”); *Warner v. Welton*, 3 New Haven Cty. Ct. Recs. 448, 448 (1736) (conflict over one resident cutting “timber” who countered that the land was his); *Linos v. Chatterton*, 1 New Haven Cty. Ct. Recs. 186, 186 (1692) (unlawful detainment of land); *Thompson v. Bradley*, 1 New Haven Cty. Ct. Recs. 186, 186 (1692) (also on unlawful detainment of land).

itself had become a less-than-ideal neighbor; in the 1750s, the townsmen formed a committee to determine what land was theirs and how they could go about recovering any land claimed or encroached upon by others.³¹³

The town had one dispute with a “Mr. Greenough” in 1749, who had fenced up some land over the boundary between his land and the town’s property.³¹⁴ Instead of accommodating him by exchanging land with him, or offering him land in a different area as they might have done in the past, the proprietors noted that “if he Shall Refuse to do any thing about the [encroachment], then [the townsmen] are hereby Desired to proceed against it.” By the mid-eighteenth century, even the town was willing to litigate over its boundary rights.³¹⁵ Community members as well increasingly became a less important part of litigation. Connecticut courts by the early nineteenth century had developed comprehensive rules of construction for analyzing metes and bounds descriptions.³¹⁶ Textual interpretation had come to replace geriatric witnesses as the key source of information about property bounds.

All these changes point to the ways in which the efficacy of the metes and bounds system depended on its social context. As the population grew and land became scarce, metes and bounds descriptions were no longer so easily interpreted. Perambulation, land divisions, and invocations of “neighborliness” subsided. New deeds began to describe property by distances and monuments, rather than neighbors. The town began surveying new areas using numbered lots to refer precisely to mapped parcels. This was a property regime tailored for remote transfers, not customized to a small number of residents.

III. RETHINKING METES AND BOUNDS

With a richer, more nuanced image of the metes and bounds system in mind, a number of key insights come into focus. This Part discusses three of the lessons this history carries for property law. First, excavation of New Haven’s system of metes and bounds illustrates important differences

³¹³ 2 New Haven Proprietors’ Records, *supra* note 288, at 56 (“Voted . . . [that there] be a Committee to Search after the proprietors [land] wherever it is Invaded by persons who have taken in some part thereof . . .”). Later records indicate that the townsmen were still having a difficult time keeping underutilized highways free from private encroachment. NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 802.

³¹⁴ 2 New Haven Proprietors’ Records, *supra* note 288, at 2.

³¹⁵ *Id.* at 3.

³¹⁶ See *Marshall v. Niles*, 8 Conn. 369, 374 (1831) (demanding inquiry into intent of recording parties); *Belden v. Seymour*, 8 Conn. 19, 25 (1830) (explaining that if monuments stood that were inconsistent with the measurements in the deed, the monuments should control); *Snow v. Chapman*, 1 Root 528, 528 (Conn. 1793) (explaining that if quantity described was inconsistent with boundaries described, the boundaries control).

between this and previously studied systems that utilized metes and bounds descriptions—variations with consequences for, among other things, litigation outcomes and property values. Second, metes and bounds systems like New Haven’s carried benefits and cost-mitigating features that have so far not been identified by other scholars. These broader contextual factors explain both the initial use and persistence of metes and bounds, as well as the system’s evolution toward standardization once those benefits and cost-mitigating devices became less salient or effective.

The Part concludes by describing metes and bounds in relation to other theories of customization and standardization within property law. Because it lowers information costs, standardization is typically associated with greater transaction volumes and economic growth. However, there are other benefits to customized property practices, or communications and signals within property law that are idiosyncratic and dependent on local knowledge. As the history recounted here reveals, customized property practices like those used in the metes and bounds system can serve very different functions that may likewise be important for growth: facilitating exclusion and control, encouraging social behavior, and helping to entrench new legal institutions. In short, this history of metes and bounds helps to sharpen categories for analyzing demarcation, for assessing the costs and benefits of demarcation systems, and for understanding the functions of customization and standardization within property regimes.

A. Toward New Categories of Metes and Bounds

Until now, the most well-studied metes and bounds system was probably the Virginia Military District (VMD) region of Ohio, discussed by economists Gary Libecap and Dean Lueck in their examination of different demarcation systems. The United States gave the VMD to Virginia in 1784 so that the state could reward its Revolutionary War veterans with land grants.³¹⁷ Plots were selected by the claimants themselves (or their transferees), who would locate a desired segment of land, enter the claim, hire a surveyor to measure the boundaries, and then record at the land office using metes and bounds, the demarcation method prevalent in Virginia.³¹⁸ Libecap and Lueck empirically compared parcel shapes, land values, and property disputes in the VMD to those in neighboring areas of Ohio surveyed on the Northwest Territory grid. They found that in the rectangularly surveyed areas land disputes were far less frequent, population growth was

³¹⁷ Libecap & Lueck, *supra* note 5, at 432-33.

³¹⁸ *Id.* at 433.

greater, and property values—even two centuries later—were higher.³¹⁹ Although the authors acknowledged that metes and bounds systems may be preferable in rugged terrain, where parcels conforming to topography might be more valuable to individual owners,³²⁰ few scholars have focused on this qualification. Libecap and Lueck’s article is typically cited for the proposition that irregular shapes and poorly delineated boundaries have long-term negative consequences and that demarcation regimes are unlikely to change once implemented.³²¹

Libecap and Lueck’s path-breaking work no doubt indicates that the rectangular system conferred value on Ohio parcels as compared with those surveyed by metes and bounds. However, the form of metes and bounds used in the VMD differed significantly from the system used in New Haven. Importantly, the VMD lacked the undergirding social and legal structure present in New Haven. For its first several decades, New Haven’s population was small, religiously united, and composed primarily of the initial group of colonists and their descendants.³²² The individuals who received land in the Military District were settlers who purchased warrants from random soldiers from all over the colony of Virginia who had been promised land to induce enlistment.³²³ And even apart from this distinction, the laws requiring perambulation and community boundary upkeep had fallen out of fashion after about 1750, meaning they were never a part of Ohio’s legal code.³²⁴ In other words, the processes that distributed knowledge of boundaries in places like New Haven never existed to aid interpretation in that region.

Furthermore, the time it took to survey the Military District is astounding. A hundred years after the Revolutionary War, surveyors were still laying out claims now owed to soldiers’ heirs on whatever remained after all the top-choice lands were taken.³²⁵ The lands were numbered in the order in which they were laid out, so consecutive lots might be in vastly different parts of the state.³²⁶ It certainly seems like group surveying in advance of settlement—present in the plotting of the west, but also in systems like New Haven’s—would carry significant advantages over sequential surveying.

³¹⁹ *Id.* at 432-50.

³²⁰ *Id.* at 449.

³²¹ See Ellickson, *supra* note 17, at 465; Epstein, *supra* note 17, at 178; Lee Anne Fennell, *Slicing Spontaneity*, 100 IOWA L. REV. 2365, 2375 n.46 (2015); Hills, Jr. & Schleicher, *supra* note 17, at 118; Henry E. Smith, *The Persistence of System in Property Law*, 163 PA. L. REV. 2055, 2068 (2015).

³²² See HISTORY OF THE CITY OF NEW HAVEN TO THE PRESENT TIME, *supra* note 40, at 22, 26-28, 104-11.

³²³ WILLIAM E. PETERS, OHIO LANDS AND THEIR HISTORY 125, 132 (1979).

³²⁴ Stilgoe, *supra* note 48, at 28.

³²⁵ PETERS, *supra* note 323, at 136-37.

³²⁶ *Id.* at 142.

Much of the land in New Haven was planned in groups, greatly reducing the risk that a surveyor would accidentally allocate the same land twice—a potentiality much more likely in a region planned like the Virginia Military District, where claimants haphazardly showed up to stake claims, only then seeking out surveyors and the land office.

All this is to say that the system of metes and bounds deployed in the Virginia Military District was distinct from the system as it operated in New Haven and similar places. Those differences could meaningfully affect the long-term consequences, suggesting that different typologies of metes and bounds systems matter. Indeed, Libecap and Lueck have already begun developing new categories for analysis, although legal scholars have largely ignored this subsequent work.³²⁷ In a paper separate from their study of the VMD, Libecap, Lueck, and co-author Trevor O’Grady suggest that land surveyed in irregular shapes but with substantial pre-surveying should be considered a “mixed” demarcation system rather than pure metes and bounds.³²⁸ And there are many other variables besides whether a parcel was surveyed individually or alongside others. A property may be described by markers and monuments, but it can be shaped like a rectangle or polygon. Likewise, different metes and bounds systems have different overlaying social and legal contexts. Without additional case studies, it is difficult to determine which of these variables is likely to cause the most negative outcomes associated with metes and bounds: imprecise-looking descriptions, sequential surveys, odd shapes, or something about the settling population, surrounding law, or local officials.³²⁹

³²⁷ The authors’ study of demarcation in Ohio has been cited many times in law journals, typically for the conclusion that clear boundary delineation or rectangular parcel shape leads to higher property values than the alternative. *E.g.*, Fennell, *supra* note 321, at 2375 n.46; Smith, *supra* note 321, at 2068; Matthew Sipe, Comment, *Jagged Edges*, 124 *YALE L.J.* 853, 857 (2014); *see also* sources cited *supra* note 17. Even though they came out in the same year, the study defining the category of “mixed” demarcation has been cited far fewer times—and the “mixed” category has never been discussed by an author in the legal literature. *See* Richard A. Epstein, *The Coase Centennial*, 54 *J.L. & ECON.* S1, S4 (2011); Hills, Jr. & Schleicher, *supra* note 17, at 118; Smith, *supra*, at 2068; Taisu Zhang, *Cultural Paradigms in Property Institutions*, 41 *YALE J. INT’L L.* 347, 358 n.49 (2016).

³²⁸ Libecap et al., *supra* note 14, at S316-18.

³²⁹ Incompetent local officials might cause serious observable problems, whether properties are surveyed by rectangle or by metes and bounds. For instance, in one of the cases cited by Libecap and Lueck as evidence of problems associated with metes and bounds titles, the surveyor started at the southeast corner of a plot, instead of the southwest corner as he was supposed to; it is not as if the surveyor picked the wrong tree or landmark out of confusion or vagueness in the deed. *Nash v. Atherton*, 10 *Ohio* 163, 169 (1840). Similar mistakes could be made in areas laid out in rectangles and squares. In the 1870s, for example, an Ohio landowner from Libecap and Lueck’s rectangular survey area claimed that the surveyor had come up “.81 chains” short of the twenty chain sides of his property, thus

One hopes that further studies—whether historical or economic—will continue to unearth and test different features affecting demarcation under the broader heading of metes and bounds. Benito Arruñada has already begun this work by differentiating two alternate ways of defining demarcation: physical demarcation, consisting of “activit[ies] for identifying a parcel of land and delineating its boundaries,” and legal demarcation, involving “social consensus on physical demarcation.”³³⁰ Arruñada argues that the differences in land values and disputes observed by Libecap and Lueck might be explained not by differences in physical demarcation, or differences in parcel shape and the method of description, but rather by differences in legal demarcation.³³¹ As Arruñada observes, implementing the rectangular system purged all conflicting claims, whereas competing claims to Virginia Military District lands resulting from survey timing were only worked out in later litigation rather than at the time of settlement. He hypothesizes that this messy legal demarcation was more important than metes and bounds physical demarcation in yielding the resulting transaction costs.³³²

Likewise, this Article’s study of New Haven illustrates numerous potentially relevant legal and social differences between the New Haven and VMD metes and bounds systems. The next Section discusses how those differences might change the expected costs and benefits of metes and bounds.

B. The Costs and Benefits of Metes and Bounds

To borrow from the economic theories used to analyze demarcation, we might explain the use of metes and bounds in terms of costs and benefits. Metes and bounds permitted flexibility in allowing boundaries to conform to the topography of rugged terrain.³³³ And, as others have noted, demarcating property by metes and bounds required few set-up costs.³³⁴ This Article’s

throwing the layout of the whole neighborhood into question. WHITE, *supra* note 18, at 151. Purchasers of land in the west often avoided land in the northwest corner of a town, because that was where surveying problems were likely to appear. LINKLATER, *supra* note 18, at 168.

³³⁰ Benito Arruñada, *Evolving Practice in Land Demarcation*, 77 LAND USE POL’Y 661, 664 (2018).

³³¹ Benito Arruñada, *How Should We Model Property? Thinking with My Critics*, 13 J. INST. ECON. 815, 818 (2017). *But see* Henry E. Smith, *Property as Complex Interaction*, 13 J. INST. ECON. 809, 811-12 (2017) (suggesting that these two forms of demarcation are linked—in that physical demarcation defines the parcel as a legal “thing” with its corresponding obligations and rights—and pointing out the difficulty of isolating portions of property institutions for empirical study).

³³² Arruñada, *supra* note 331, at 818.

³³³ Libecap & Lueck, *supra* note 5, at 460.

³³⁴ *Id.* at 460-61.

historical study of colonial New Haven confirms as much. Recording required a book and a town official, but it was incumbent on parties to bring in deeds to record. Clerks imposed few if any restrictions on what could be recorded, recording odd interests and contracts along the way. Rather than laying out properties *ex ante*, the government parceled out properties using on-site surveys. Surveyors and owners cut markers into trees, stacked stones, or built fences to mark lots. While monuments—trees, rocks, fences, highways—were sometimes mentioned, just as often, neighbors’ names and land uses were given. For a community with few resources, systems built on metes and bounds descriptions were a cheap option.³³⁵

There were other potential benefits of metes and bounds descriptions that perhaps justified their use. In particular, they contained customized, dense, and idiosyncratic information. This aspect of the descriptions neatly indicates the trade-offs involved in deciding between customization and standardization. Institutions that permit customization allow for the tailoring of information to individual preferences and needs; if communications become standardized within these institutions, then idiosyncratic information will be lost.³³⁶ On the other hand, uniform, standardized communications are easier for wider audiences to process: individuals need not sift through non-salient information for the relevant data, and the information provided is likely to be patterned toward achieving some socially beneficial end (in this instance, locating the property).³³⁷

The optimal amount and type of information that a given legal institution demands typically involves balancing the information’s costs and benefits.³³⁸ Where “audiences are large, heterogeneous, and indefinite,” the case for less complex, shorter communication conforming to a pattern is very strong.³³⁹ By lowering processing and transaction costs, uniformity encourages socially valuable activity by the group, encouraging the wider audience to participate in the market and respect others’ claims. On the other hand, when the audience is smaller and more homogenous, the calculus may differ. Perhaps in a small group, it is more important that information is detailed, precise, and conforms to expectations; the number of outsiders is limited, so information tailored to the group’s preferences will be more beneficial.

The historical evolution of metes and bounds descriptions seems to bear out this theory. When the audience was comparatively small—a close-knit group of New England settlers—parties recorded all sorts of highly

³³⁵ *Id.*

³³⁶ *Id.* at 460; Smith, *supra* note 9, at 1125-39.

³³⁷ Smith, *supra* note 9, at 1133-48.

³³⁸ Long, *supra* note 9, at 480 (“Legal rules must balance the goal of reduction of information costs with other social values.”).

³³⁹ Smith, *supra* note 9, at 1109-10, 1190.

customized information about property. Neighbors, former owners, land uses, specific parts of trees, pathways for carting hay: these highly customized descriptions of property made their way into the records. More standardized descriptions might fail to capture this information about the land; at a minimum, this information mattered to the transacting parties, but it was also constructed and consumed by surveyors, town officials, and perhaps even other settlers.³⁴⁰ Publicizing customized information about property circulated information about land uses, nearby residents, vegetation, and even contractual relationships to clerks and searching parties. It is remarkable that some of the features used in early metes and bounds descriptions later became official names for areas.³⁴¹ Landmarks first identified for use in private transactions became important and official points of reference on a new frontier.

Metes and bounds demarcation permitted early settlers to tailor property descriptions to their needs and to a new landscape, offering benefits not present in a standardized demarcation system. There were also various legal and social factors mitigating what might otherwise have been high enforcement and transactions costs.³⁴² As this study makes clear, metes and bounds descriptions relied heavily on local knowledge: shared information possessed by the group that helped to locate boundaries or to locate individuals with reliable information. This worked while resource pressure was low and the population was relatively small and homogenous, as it was for the first few decades of New Haven's history. Residents could obtain information to engage in transactions or resolve disputes at a relatively low spatial and social distance.

In addition, a variety of legal procedures and social practices aided in the interpretation of even the vaguest metes and bounds descriptions. First and foremost, boundary maintenance was the responsibility of a group of neighbors and citizens who walked the bounds of properties to commit them to memory. In later American history, there are many tales of landless

³⁴⁰ See *supra* notes 133-138 & accompanying text. There is one piece of evidence that town officials closely reviewed deed descriptions while entering them into records; in 1654, they declined to enter a land transaction into court because the note furnished "saith not how much land it is" or exactly how much each of the three transferees would receive. NEW HAVEN TOWN RECORDS 1649-1662, *supra* note 75, at 218.

³⁴¹ For instance, there is still an "Oyster Point Historic District." See Deed of April 7, 1699, in 1B NHLR, *supra* note 74, at 463, 464 (noting that property is bounded by highway leading to "Oyster Point"); New Haven Preservation Trust, "Oyster Point Historic District," http://nhpt.org/index.php/site/district/oyster_point_historic_district [<https://perma.cc/V2LP-ARXZ>].

³⁴² Cf. Rose, *supra* note 9, at 17-18 (analyzing how social factors influence optimal strategies for addressing environmental issues).

residents burning notched trees, moving stones, and squatting on property belonging to absentee landholders in other regions.³⁴³ In contrast, in early New England, when land was plentiful and the need for neighborly cooperation high, maintaining boundaries was an important community event that appears to have minimized the number of disputes and assisted in the resolution of those that proceeded to litigation. Thus, so long as neighbors could be relied upon to protect and maintain pertinent knowledge of a given property's boundaries, metes and bounds descriptions were surprisingly effective.

Moreover, the division system used to distribute property offered other important benefits and mitigation effects. It rendered property descriptions less vague than they would appear from consulting the deed alone. The records of divisions were meticulously kept, surveyors were instructed how exactly to move about the land, and the rolls of officials and recipients contained another list of witnesses to property bounds. Additionally, though the division system may have resulted in some irregular layouts with parcels being described by metes and bounds, it avoided the problems inherent in a sequential survey like the one that plagued the Virginia Military District. Because land was distributed for possession all at once, there were fewer overlapping claims—or fewer that were ever litigated or otherwise brought to the attention of town leaders. Indeed, the use of metes and bounds descriptions was likely to lead to trouble when uncoupled from the other legal rules and the social context in which that method of demarcation developed.

As this theory of the use of metes and bounds would predict, regularized demarcation and standardized property descriptions became favored when increases in population, land scarcity, and heterogeneity broke down the resident knowledge that those systems needed to operate. Customized metes and bounds descriptions are comprehensible to a small audience with common background information. Though these customized practices are valuable and comprehensible to small communities, standardized practices are more accessible to newcomers and less-close neighbors. Accordingly, as the region changed, the New Haven and Connecticut governments and their officials began to pre-survey properties more aggressively, to facilitate boundary re-recording, and to refer to properties by measurable perimeters and permanent features. Standardization increased predictability and interpretability, values which became critical as the social fabric which had sustained the earlier system broke down. As resource pressure increased and the population changed, it made sense to shift management strategies.

Indeed, this may hint at a sort of “Demsetzian” transformation within demarcation regimes. Harold Demsetz's work famously suggested that

³⁴³ LINKLATER, *supra* note 18, at 152.

property rights evolve when it is efficient for them to do so: private property rights emerge from common property as the value of resources increases and technology develops to capture that value.³⁴⁴ Other scholars have refined this point, noting that governance regimes of resources tend to follow a similar path. Whether the property at issue is a right to fish or to pollute, simple property regimes make sense when resource pressure is low, but increasing resource pressure makes it worthwhile to transition to more costly, more rigorous regimes.³⁴⁵ The Demsetzian thesis, however, has been critiqued for inadequately explaining why private property rights sometimes disappear in favor of common property, or why rigorous property regimes are sometimes replaced by more lax forms of governance.³⁴⁶ Demsetz's thesis must be refined to account for the fact that the evolution toward exclusive property rights is not linear; depending on other conditions, like resource scarcity and the nature of the audience, the calculation may change and again render a different property or management system optimal.

The history of New Haven's property regime suggests that land demarcation systems also offer a choice. In a small-scale economy and society, customization may be preferable. As this study has illustrated, social ties, legal practices, and spatial proximity mitigated the high information costs associated with customized communications dependent on local knowledge. Indeed, customized descriptions may offer significant informational benefits when resource pressure is low and the audience discrete. Standardization may emerge within property systems as the value of resources increases and the costs and losses associated with customization increase. Put another way, as enforcement costs and trading costs increase because of social changes and decreases in land availability, the costs of standardization become worth undertaking.

To be sure, land demarcation methods are path dependent, and the costs of switching demarcation strategies are significant.³⁴⁷ But some aspects of demarcation systems are also amenable to change, allowing them to evolve alongside society and technology. There is no doubt that streets and lot layouts are path dependent: most of colonial New Haven remains far from a grid nearly four hundred years later, except those parts that were planned as rectangular from the outset. But people are adaptable, and they can change some of the rules of the systems that govern them to improve land markets,

³⁴⁴ Demsetz, *supra* note 28, at 349.

³⁴⁵ See, e.g., Rose, *supra* note 9, at 2-5.

³⁴⁶ Daniel Fitzpatrick, *Evolution and Chaos in Property Right Systems: The Third World Tragedy of Contested Access*, 115 YALE L.J. 996, 998-99 (2006); Henry E. Smith, *Exclusion versus Governance: Two Strategies for Delineating Property Rights*, 31 J. LEGAL STUD. S453, S462 (2002).

³⁴⁷ Libecap et al., *supra* note 14, at S322.

ease transfer, and lessen the pain and confusion of disputes. Although New Haven's institutions were set up to incorporate idiosyncratic, customized metes and bounds descriptions, they were flexible enough to accommodate more standardized boundary descriptions later on.

Generations later, other New Haven residents complied with new requirements within those same institutions, buying property laid out in rectangles, obtaining paperwork, having precise boundaries drawn up, and transacting with individuals they may never have met. The methods of surveying and describing property originated to fit a specific population, but as society changed, some aspects of property institutions evolved alongside them. In modern times, the language of demarcation may change again: with the advent of Geographic Information Systems (GIS) technology, descriptions even more precise than perimeters, latitude, and longitude are now possible.³⁴⁸ Indeed, the meridians and compass measurements in today's descriptions may soon look as obsolete as the stones and stakes from centuries ago.

C. The Social Function of Customized Property

Metes and bounds descriptions and their surrounding institutions had another benefit not yet mentioned: they reinforced social bonds at a time when society was precarious. The New Haven settlers faced disease,³⁴⁹ threats of conflict with Native Americans and other settler groups,³⁵⁰ and droughts and other crop shortages.³⁵¹ Settlers embraced the idea of community, of shared commitment toward a common goal—whether that sense of community derived from some religious or philosophical underpinnings, or from corporate sensibilities.³⁵²

Customized metes and bounds descriptions, and the legal system that surrounded them, reinforced social behavior. Perambulation brought

³⁴⁸ Gary D. Libecap & Dean Lueck, *Land Demarcation Systems*, in RESEARCH HANDBOOK ON THE ECONOMICS OF PROPERTY LAW 257, 279 (Kenneth Ayotte & Henry E. Smith eds., 2011); Libecap et al., *supra* note 10, at S322.

³⁴⁹ The Town Records recall that nearby Guilford was decimated by illness in 1668, enough so that the town needed assistance to work the fields. “[M]any shewed themselves very forward & willing send helpe” NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 238.

³⁵⁰ NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 180; NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 412-13.

³⁵¹ NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 524.

³⁵² See Russell R. Menard, *Yankee Puritans*, 21 REVIEWS IN AM. HIST. 385 (1993) (describing historiographical debate over whether religious vision or profit-seeking behavior led to the strong community ties observed in New England).

community together in rituals fraught with sacred meaning. The property system encouraged neighbor to meet neighbor, parents to teach children, prospective purchasers to reach out to surveyors, friends, and former owners. The records indicate that determining boundaries and transacting in land necessarily required extensive face-to-face interactions with other residents.³⁵³ Put succinctly, the process of interpreting land descriptions and purchasing metes-and-bounds property had the effect of creating other social value: new and strengthened networks of townspeople who might later be relied upon in the New England wilderness.³⁵⁴

Of course, implicit in the New England vision of community was the principle of exclusion. New England settlers, including residents of New Haven, defined themselves against others: new immigrants, other settlers, and Native Americans.³⁵⁵ Exclusion was built into the structure of society. In New Haven's earliest years, for example, only members of approved churches could vote.³⁵⁶ Indeed, one of the very first acts of the colonial governing body was to appoint a committee of freemen with the task of admitting as residents only "such persons as they shall judge meete for the good of the plantatiō," so as to ensure "that none shall come to dwell as planters here w^hout their consent and allowance, whether they come in by purchase or otherwise."³⁵⁷ In New Haven's early history, settlers were not even allowed to sell or rent lots to any "stranger" without permission from the court.³⁵⁸ And neighbors kept a tight watch on anyone moving in. One record from New Haven colony describes a resident in court complaining that "a neighbour of theirs . . . was about to sell [his parcel] vnto a Quaker."³⁵⁹ The property system explicitly limited settlement to a small social group; although the tightest restrictions were eventually abandoned, it still took seventy years for New Haven to begin distributing any undivided town-owned land to new residents.³⁶⁰ Other colonial towns continued to treat

³⁵³ Atwater Case I, *supra* note 219, at 406-07; Atwater Case II, *supra* note 220, at 514-15.

³⁵⁴ See MANN, NEIGHBORS AND STRANGERS, *supra* note 24, at 19; CARL BRIDENBAUGH, CITIES IN THE WILDERNESS: THE FIRST CENTURY OF URBAN LIFE IN AMERICA 1625-1742 (1955).

³⁵⁵ Melville Egleston, *The Land System of the New England Colonies*, in HISTORICAL AND POLITICAL SCIENCE 34-42 (Herbert B. Adams ed., 1886); Haskins, *supra* note 51, at 299; NEW HAVEN TOWN RECORDS, 1649-1662, *supra* note 75, at 400 (resolving to lease some lands to Native Americans to farm, but not in the "suburbs quarter," where "many of the proprietors there objected against it.")

³⁵⁶ COLONY RECORDS, 1638-1649, *supra* note 52, at 110-11.

³⁵⁷ *Id.* at 25.

³⁵⁸ *Id.* at 40.

³⁵⁹ COLONY RECORDS, 1653 TO UNION, *supra* note 204, at 300.

³⁶⁰ NEW HAVEN TOWN RECORDS, 1684-1769, *supra* note 175, at 207 ("[A]ny person or

nonpropriators differently for even longer.³⁶¹

The effect of metes and bounds descriptions was also to limit access to the colony, even though there is no explicit evidence that the use of metes and bounds was strategic in this way.³⁶² The history of metes and bounds described here demonstrates that purchasing property meant interacting with the seller, surveyor, and probably neighbors simply to ascertain the bounds.³⁶³ An outsider unfamiliar with the markers, neighbors, neighborhoods, and surveyors referenced in deeds would have great difficulty either discovering the borders or entering the market. Metes and bounds descriptions helped to keep outsiders out and insiders in. When a community's assets are not easily marketed, it reinforces connections among residents, prevents defection, and controls immigration. Indeed, in later American history, speculators bought up property that was described in standardized terms that allowed them to understand the size, shape, and location without any familiarity with the land or nearby occupants.³⁶⁴ Landless locals resisted that ownership by "forging new plats" and turning to a parallel institution to substantiate new extralegal claims: "red brush surveyors," who had intimate memories of the land and could be personally called upon by frontiersmen to ascertain boundaries.³⁶⁵ In other words, residents hostile to outsiders used local knowledge and social connections to try to close off the property system to those distant from the land and its community. As this example and the New Haven story indicate, institutions dependent on localized knowledge can serve as a means of controlling access to property and thereby society.

persons shall have any Right to Land in the Half Devision by his own Right or by his predecessors or by purchass"). The town made an exception for three men in the 1680 distribution who had served as soldiers, granting them land but not "tak[ing] them in as orderly aprooued inhabitants." NEW HAVEN TOWN RECORDS, 1662-1684, *supra* note 75, at 402-03.

³⁶¹ Egleston, *supra* note 355, at 34-41.

³⁶² The effect of recording was also to exclude outsiders. *See* Haskins, *supra* note 58, at 299 ("In part the explanation [for the adoption of recording requirements] is to be found in the two-fold desire of the early communities to improve the town land and to keep undesirable immigrants out.").

³⁶³ *See supra* notes 228-230 and accompanying text.

³⁶⁴ *See generally* Paul Wallace Gates, *The Role of the Land Speculator in Western Development*, 66 PA. MAG. HIST. & BIOGRAPHY 314 (1942) (describing role of speculators in public land states). Of course, there were speculators in metes and bounds regions too, though these largely occurred in areas like the Virginia Military District where individuals sold warrants entitling them to land, rather than in closed systems like New Haven. *See* LINKLATER, *supra* note 18, at 150-52.

³⁶⁵ LINKLATER, *supra* note 18, at 152; *see* HELEN BULLARD & JOSEPH MARSHALL KRECHNIAK, CUMBERLAND COUNTY'S FIRST HUNDRED YEARS 83-84 (1956).

We see that evidence of a different function of property throughout the New Haven records. Scholars have long identified and debated other social functions of property—the fact that property ownership entails obligations and limits to others,³⁶⁶ or that property rights facilitate market sociability by encouraging bargaining and inducing individuals to invest in public goods.³⁶⁷ But here another social function of property is revealed: customized property rules and institutions can be used to limit audience size and to strengthen ties within the relevant audience. This principle has long been implicit in property literature. Carol Rose has helpfully described some property rules as “crystalline”—they “creat[e] a context in which strangers can deal with each other in confidence”—or “muddy”—rules that are messy and gain their content only from repeated social interactions, but that allow for flexibility and tailoring to specific factual situations.³⁶⁸ Property demarcation and the language of transfer likewise offer a crystals-or-mud choice: crystalline descriptions facilitate trade at a spatial and social distance, but muddy descriptions permit different sorts of information to be recorded in different transactions according to the parties’ needs. Metes and bounds descriptions made transacting at a distance hard, but even the muddiest boundary language was comprehensible in a social setting where many individuals knew one another and participated in the establishment and re-establishment of boundaries. In this case, customized property descriptions served both to limit the audience to a set and to encourage that audience to engage in the same sorts of interactions on which the system depended.

There are many familiar downsides to customization that excludes outsiders by requiring familiarity with local knowledge. Regimes that are hostile to outsiders can be associated with the powerful disenfranchising the powerless in morally reprehensible or undemocratic ways.³⁶⁹ Furthermore, rules and institutions that limit the audience of property make it difficult for outsiders to make informed decisions about actions that may impact another’s property rights.³⁷⁰ Finally, insularity harms insiders as well as outsiders:

³⁶⁶ Gregory S. Alexander, *The Social-Obligation Norm in American Property Law*, 94 CORNELL L. REV. 745 (2009); Nestor M. Davidson, *Sketches for a Hamilton Vernacular as a Social Function of Property*, 80 FORDHAM L. REV. 1053 (2011).

³⁶⁷ See Gary D. Libecap, *The Tragedy of the Commons: Property Rights and Markets as Solutions to Resource and Environmental Problems*, 53 AUSTRALIAN J. AG. & RES. ECON. 129 (2009).

³⁶⁸ Carol M. Rose, *Crystals and Mud in Property Law*, 40 STAN. L. REV. 577, 602, 605 (1988).

³⁶⁹ Carol Rose, *Ostrom and the Lawyers: The Impact of Governing the Commons on the American Legal Academy*, 5 INT’L J. COMMONS 33-35 (2011).

³⁷⁰ Douglas Baird & Thomas Jackson, *Information, Uncertainty, and the Transfer of Property*, 13 J. LEGAL STUD. 299, 301 (1984); Rose, *supra* note 353, at 35; Merrill & Smith,

keeping insiders in has the effect of limiting resident mobility in potentially harmful ways.³⁷¹ Yet as this history illustrates, customization may also be a governance strategy.³⁷² A community can be rooted to a place and to a set of institutions by customization. Customization can help to facilitate good social behavior and to entrench threatened institutions. And it is worth remembering that like customization, standardization can have its own harmful effects.³⁷³

Indeed, we see evidence of this use of customization in more modern settings. Metes and bounds descriptions are one form of customization in property regimes, but there are other aspects of property systems where recognition of entitlements or participation in exchange requires some familiarity with local knowledge: for example, customary titling or transfer mechanisms or norm-based practices that regulate ownership and use. In developing nations across the globe, extralegal titling and demarcation systems dependent on local knowledge bubble up and persist alongside highly bureaucratic systems in regions threatened by environmental and social shocks, like civil war and frequent crop failure.³⁷⁴ Even in the United States, locally customized methods of distributing, describing, and transferring property have emerged to perpetuate community survival under external threats. In Detroit, for example, formal property institutions are “overburdened” and “underfunded,” making the state less able to ascertain and protect individuals’ rights.³⁷⁵ In the state’s stead, threatened communities in the city have developed a complex system around who can squat in property or scrap material from it. Though these practices are norm-based rather than legal, they are customized: a set of idiosyncratic rules that require

supra note 8, at 69.

³⁷¹ Cf. David Schleicher, *Stuck! The Law and Economics of Residential Stagnation*, 127 YALE L.J. 78, 114-17 (2017) (discussing how land-use law have affected interstate mobility in the modern United States).

³⁷² Here, I mean that limiting access to information in the property system—not limiting access to the resource—is the governance strategy. Limiting access to a resource has long been perceived as a governance strategy for preventing overuse. See Smith, *supra* note 331, at S459.

³⁷³ Standardization was used to suppress colonized people and their practices. See SCOTT, *supra* note 23; Shyamkrishna Balganes, *Codifying the Common Law of Property in India: Crystallization and Standardization as Strategies of Constraint*, 63 AM. J. COMP. L. 33, 50-51 (2015) (arguing that standardization and codification of property law in British-occupied India constrained judges from using custom); Banner, *supra* note 23, at 847.

³⁷⁴ Fitzpatrick, *supra* note 346, at 1015-16, 1027; see Gregory Dolin & Irina D. Manta, *Parallel State*, 38 CARDOZO L. REV. 2083, 2106-09 & n.207 (2017) (describing use of informal processes for transferring property in Brazilian favelas dependent on localized knowledge and close social ties).

³⁷⁵ Claire S.W. Herbert, *Property Rights in the Context of Urban Decline: Informality, Temporality, and Inequality* 44 (2016) (unpublished Ph.D. dissertation, University of Michigan) (on file with author).

local knowledge derived from others in the group. Neighbors note when houses are newly empty and determine who moves in through social networks;³⁷⁶ residents hang wreaths and curtains in unoccupied houses to control and monitor access; and locals obey “the rules,” such as the demands of other neighbors to cut the grass or do other upkeep.³⁷⁷

The community has established these norm-based practices specifically to limit outsiders, because they want residents who will help beautify their neighborhoods, contribute positively to local life, and rehabilitate areas decimated by foreclosures and prior criminal activity.³⁷⁸ The state is now taking a more active role in regulating these property practices, sometimes curtailing such uses and rules (for example, by criminalizing squatting) and sometimes adopting newer, more flexible rules to incorporate them (such as legalizing gardening on urban plots and streamlining the acquisition of property for that purpose).

Customized property practices like metes and bounds descriptions thus serve a different function than standardized property practices, but one that is no less connected to development and growth. Customization facilitates compliance with property laws and institutions; when individuals are accustomed to idiosyncratic, localized practices for transacting in land or understanding entitlements, standardization entails costs, whether those costs are the losses accompanying decreased tailoring, the costs of translating customized communications and interests into standardized forms, or even the time associated with failed efforts to comply with standards. These costs of standardization may discourage individuals from participating in systems requiring it; in other words, customization can encourage participation, and when incorporated into legal institutions, can build trust in and demonstrate the value of legal processes and requirements. Moreover, customization carries other societal benefits: it builds cohesive bonds among members of a community. The repetition and utilization of local knowledge strengthens ties among the communicators, but also limits access to the community and property system in ways that may be important in establishing and protecting institutions.

Put another way, standardization or customization may make sense at different stages of development and under different conditions. Development theorists and property economists have been making a powerful case that standardization is needed to draw capital and increase land values in property systems around the world.³⁷⁹ That certainly makes sense if the size, shape,

³⁷⁶ *Id.* at 101.

³⁷⁷ *Id.* at 71-72.

³⁷⁸ *Id.* at 61-64.

³⁷⁹ See DESOTO, *supra* note 25, at 164; Daniel Fitzpatrick, ‘Best Practice’ Options for

and location of the property must be understandable to distant creditors, buyers, and judges. But at the outset, it is more important to establish the enterprise with a critical population mass and to enable simple and cheap institutional buy-in. In colonial New Haven, metes and bounds descriptions and the practices associated with them helped to bond community members to each other and to the land. The low cost of compliance meant that showing up to the clerk with a document was sufficient to record an interest in full compliance with the law. The colony residents may individually have benefitted from the low cost of complying with the property regime, but the settlement itself benefitted from the obtuseness of a system that measured boundaries by birch trees and neighbors' barns.

New Haven's demarcation regime evolved away from the vaguest metes and bounds descriptions and the institutions and legal practices surrounding them. But it was economic growth and a population boom that initially forced standardization in New Haven's property regime—not the other way around. The causal connection between standardization and development is complicated and bidirectional. In New Haven, development occurred while the colony primarily used highly customized property practices, and that development caused the need for standardization in property descriptions, likely facilitating further development. Yet those changes occurred when it became important for property rules and institutions to make information about land transmissible at a distance. Earlier in the colony's history, that was emphatically not the goal.³⁸⁰ Instead, there was a different strategy for growth: building fragile institutions on a new frontier and encouraging compliance with them.³⁸¹ Metes and bounds, along with many other legal practices, helped to achieve this aim.

CONCLUSION

To their modern readers, metes and bounds descriptions are indecipherable. In referring to notched trees, ancient fences, and seventeenth-century widows, this method of demarcation seems hopelessly short-sighted. In a limited sense, this Article provides evidence to compound that view, as it reveals that metes and bounds descriptions were often even worse than the

the Legal Recognition of Customary Tenure, 36 DEV. & CHANGE 449, 466-71 (2005); Tim Hanstad, *Designing Land Registration Institutions in Developing Countries*, 13 AM. U. INT'L L. REV. 647, 660 (1997). *But see* Michael Trebilcock & Paul-Erik Veel, *Property Rights and Development: The Contingent Case for Formalization*, 30 U. PA. J. INT'L L. 397, 446-48 (2008).

³⁸⁰ NELSON, *supra* note 44, at 10 (noting that “the New England colonies did not seek to control the law out of a need to promote the certainty and predictability needed for entrepreneurial investment”).

³⁸¹ *See id.* at 64-65.

paradigmatic “rock-to-tree” formula; they referred only to neighbors, commons, and general areas, rather than perimeters. Drawing these boundaries now is impossible. The map they produced is forever lost to time. But our understanding of metes and bounds would be woefully incomplete were we to content ourselves with boggling at the seemingly impenetrable nature of these descriptions. Only by understanding this property demarcation system in its larger social context does its true value and rationality come into focus.

Despite the extraordinarily high information costs for outsiders, insiders were able to decipher these descriptions because of social factors and legal practices. Socially, the population was small and homogenous, and there was a perception that land was plentiful enough that any controversies could be amicably resolved without resort to the courts. Legally, boundary information was distributed through compulsory and voluntary perambulation, in which neighbors, family, and friends walked the boundaries to repair markers and to commit demarcation lines to memory. The method for allocating land—the division system—created both written records with additional information and witnesses that could be called upon for future transactions and dispute resolution.

The demarcation system thus offered low set-up costs in its recording institutions and on-site surveys, informational benefits in the thick descriptions in deeds, and social and legal mechanisms for reducing otherwise high transaction and enforcement costs. Furthermore, metes and bounds descriptions and the institutions surrounding them offered opportunities for exclusion and cohesion: functionally limiting the entrance of outsiders into the property market and ensuring that the insiders would behave socially and stay rooted to property in a time when the survival of new institutions was essential. Thus, by examining in detail the records of colonial New Haven, this Article has shown that metes and bounds had a positive role in development and growth. Metes and bounds descriptions established the colony and town, supported the property market, led to relatively few disputes, and persisted for decades.

Importantly, however, metes and bounds descriptions depended on the social fabric they helped create. As that fabric deteriorated with new immigration and rising land scarcity, changes occurred in many different areas of the property system. Connecticut and New Haven legislative bodies facilitated re-measuring boundaries and re-recording them, and they began more systematically pre-surveying land with the aid of new infrastructure and new methods of describing parcels by “tiers” and lot numbers. Town clerks recorded property in new, measurable ways. Judges construed written records rather than calling on long rolls of septuagenarian witnesses to bounds. These changes, I have argued, were a response to the threat of chaos in the property

system. More demands for property necessitated precision and standardization, even though precision carried its own upfront costs.

This Article has explained how metes and bounds descriptions and institutions were supported and transformed over the course of one area's history. It develops a theory of metes and bounds demarcation paralleling other theories of resource management and governance strategies. When resource pressure is low and the relevant audience small, more customized demarcation may offer significant social benefits at a low social cost. As resource pressure and audience size increase, locally customized demarcation methods are no longer tenable.

Property rules and institutions can serve an important function by encouraging precision and standardizing communications about land, facilitating trade and lending and reducing disputes. But property can serve other equally important functions in societies with different needs. Indeed, the study of metes and bounds reveals that even highly customized property practices can help to further growth by encouraging social behavior and by simplifying compliance with fledgling institutions. The growth that New Haven experienced—growth that ultimately forced its recording institutions and planning practices to change—ironically may have owed in part to the ways its early property law incorporated boundaries drawn by stone heaps and tree stumps.