EXCHANGE AND SETTLEMENT PATTERNS AS EVIDENCE FOR
SOCIAL STRATIFICATION AND DEVELOPING COMPLEXITY
IN PREHISTORIC AND EARLY CHRISTIAN IRELAND

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Master of Arts

by
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Presented by Rebecca L. Swaters

A candidate for the degree of Master of Arts

And hereby certify that in their opinion it is worthy of acceptance.

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Professor Lois Huneycutt

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Professor A. Mark Smith

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Professor Kerby Miller

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Professor Anne Stanton
“Think for a moment of a long chain...of gold...that would never have bound you, but for the formation of the first link on one memorable day.”

- Charles Dickens, Great Expectations

To Jones, for challenging me to forge that first link despite surrounding opposition, eight short years ago.

I stand among many in saying your education was unforgettable.

To the inimitable collective, who have showed me that power is the one god before whom we are all slaves, reduced to one voracious appetite and the limited imagination of imitation.

And to the Lady of the Manor, blessing this earth since 1922.

You inspire me.
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TABLE OF CONTENTS

ACKNOWLEDGMENTS..............................................................................................................ii

LIST OF FIGURES.....................................................................................................................v

Chapter

1. NO SANE MIND..................................................................................................................1

2. THEORETICAL BACKGROUND.....................................................................................13

   Scalar Stress and Hierarchical Development

   Labor Control, Land, and Hierarchical Development

   Other Facets of Highly Stratified Societies

   Food, Farming, Technology and Trade

   Warfare and Resource Control

   Regional Politics: Another Layer of Power

   Culturally-Linked Trade Empires: A Grecian Example

3. THE BRONZE AGE.........................................................................................................26

   Mining, Metallurgy and Trade

   Settlement and Land Usage

   Burials

   Hoards

4. THE IRON AGE AND EARLY CHRISTIAN PERIOD.....................................................55

   Catastrophe and Revival in Brief

   iii
The Iron Age: Evidence for Exchange

The Roman Period: Evidence for Exchange

The Early Christian Period: Evidence for Exchange

The Iron Age & Roman Period: Settlement and Land Use

The Early Christian Period: Settlement and Land Use

Monasteries and the Development of Proto-Urban Centers

APPENDIX

1. SCALAR STRESS AND THE DEVELOPMENT OF HIERARCHIES..................102

BIBLIOGRAPHY............................................................................................................107
<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gold Lunula</td>
<td>35</td>
</tr>
<tr>
<td>2. Wedge Tombs and Cist Grave Distribution</td>
<td>49</td>
</tr>
<tr>
<td>3. Broighter Hoard Boat</td>
<td>64</td>
</tr>
<tr>
<td>4. Ptolemy’s Map of Ireland</td>
<td>73</td>
</tr>
<tr>
<td>5. Ringfort Visual Territories</td>
<td>95</td>
</tr>
</tbody>
</table>
“The history and antiquities of Ireland, previous to the English invasion, were considered to be wholly unworthy of notice or, at best, involved in obscurity and darkness, such as no sane mind would venture to penetrate.”

- George Petrie, early Irish archaeologist, 1821.

Ireland’s international image has had many incarnations, from the sacred isle of the classical period to the troublesome hotbed of the past century. Its past has been analyzed by many, dissected under the varying microscopes of archaeology, archaeometallurgy, paleobotany and dendrochronology, history, linguistics, and maritime excavation, to name a few. At some point in the distant future, scholars will likely be able to say that nearly everything concluded in the early period of Irish study was invariably incorrect, and generally, this will be a step in the right direction. The early period of modern Irish historical study was riddled with ethnic slurs and political finger-pointing taken back to prehistory:

The object of this paper is to show that the peculiarities of the Irish character are not due to political causes, to educational neglect, to the force of circumstances, or to any other external influence whatsoever, but that they are racial, hereditary, and ineradicable.

So wrote J. Gould Avery in his paper on “Civilisation,” published in the Journal of the

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His point was that the Irish were racially flawed, and had been so since the dawn of mankind, and with that neat conclusion he tidied up a number of pressing political issues regarding the “Irish question” facing Britain at the time. Unfortunately, that precise attitude prevailed among many scholars - good scholars, even - into the 1960s and beyond. By the 1930s, the tale had been revised to that of the tall, blonde Celtic warriors sweeping into Ireland, enslaving and eventually exterminating the short, darker-skinned native inhabitants, whom we are meant to understand possessed the inherently substandard and “uncivilised” qualities Avery described in length.

For the modern scholar, this movement created numerous problems with sources, as a proliferation of texts and scholarly work with embedded prejudices came about as the field of early Irish history found solid footing. The fact that this proliferation was irrevocably tied up with the battle for Irish independence only adds to the political contamination, intentional or not. Eoin Mac Néill, the so-called founder of ancient Irish studies, made a name for himself in the early twentieth century by making honest headway into the fuzzy origins of the Irish. Even he still managed to muddle his myths with his facts and his nationalism.

Modern works that have presumably let the eugenic flame die a much-needed death and taken a more impartial view on history still have difficulties. The press prints only a small quantity, the publisher allows texts to quickly go out of print, the texts do not circulate much beyond the British Isles. The emphasis on Ireland in outside fields has been very limited, and as Michael Richter notes, “one of the great contributions of Ireland...the spread of the Christian message to her neighbours, has already received ample

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consideration. Indeed, that is the main reason why non-Irish scholars of the Middle Ages turn their attention to Ireland at all.”3 Or, in the case of the New History of Ireland series, the first volume covering the ancient and medieval periods collapsed, was resurrected and finally published in 2005, some thirty-odd years after its original beginnings and after at least six other volumes on the modern period had aged to a dusky blue on library shelves. One-quarter of its contributors and some of those who revised these original submissions did not live to see publication.

Complicating matters further is the need to recalibrate radiocarbon dates calculated in the early years of the technology’s use. For this purpose and those problems listed above, the author has opted to focus her research on sources published within the last twenty years’ time, with emphasis given to recent publications on prehistoric Atlantic networks and international contact. Whether authors complain of too little primary source material to support their theories, or so much material as to overwhelm and utterly complicate the search for explanatory theories, the common thread seems to be that early Irish history is, quite simply, frustrating except in the most minute of doses.

Thus, it is relatively difficult to construct an accurate and detailed portrait of Ireland’s earliest human occupation. This ambiguity stems, in part, from its rather late settlement compared with the rest of Europe, which leaves archaeologists a significantly smaller time frame from which to find preserved artifacts and remains. Whereas parts of southern Europe have artifacts dating back 40,000 years or more, and the glaciers receded in northern Europe 15,000 years ago, Ireland was uninhabited until the mid-eighth

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1 Michael Richter, Ireland and Her Neighbors in the Seventh Century (New York: St. Martin’s Press, 1999), 15.
millennium BCE.⁴

As an oral society, Ireland’s entrance into literary history is equally ambiguous, ranging from early, pictograph-like ogham inscriptions on native stones and woodwork to the island’s depiction in Greek and Roman literature. Ireland itself did not become a literate society until Christianization took place in the fifth century. If we are to believe some of the earliest classical authors, prehistoric Ireland was nothing less than an island somewhere north of Britain: in one version a sacred green isle nestled in the waves, in another a cold, hostile land of incestuous cannibals.⁵ For all practical purposes, much of current Western prehistory and early history dismisses Ireland in its entirety, sometimes leaving it quite literally off the map. In the words of Dáibhí Ó Cróinín, who took on the monumental task of presiding over and editing the resurrection of The New History of Ireland, Volume 1, “the first reliable date in Irish history is AD 431,” and it is generally from that point where “Irish” scholarship begins.

Marginalized though it may be, prehistoric Ireland was neither an island of negligible importance, nor did it hold a blandly stagnating culture. The inhabitants of Ireland were seldom cut off from Europe, and their culture, technology, and sphere of influence changed as the times changed. From the Neolithic onwards, the early Irish mastered the seas to trade axes, metal ores, and golden objects with neighboring Britain and the areas that would become Roman Gaul and Iberia, and their goods traveled along

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⁵ The former is from the Ora maritima of Avienus, the latter from Strabo. Philip Freeman, Ireland and the Classical World (Austin: University of Texas Press, 2001), 221.

⁶ From the Chronicle by Prosper of Aquitaine, published in Rome, marking the dispatch of the bishop Palladius to Ireland. This firmly establishes that Christianity had taken root, however tenuous, in Ireland by the early fifth century. For more on this choice of dates, and a summary of the “problem of Patrick”, see Dáibhí Ó Cróinín, Early Medieval Ireland: 400-1200 (New York: Longman Publishing, 1995), 14, and chapter 1.
trade networks as far away as Etruria. Archaeological evidence for this is firm. However, seemingly little is known for certain about early Irish trade or society until the later periods of literacy and Christianization. Certainly no one work has yet to address this subject in its entirety. The closest any scholar has come is Barry Cunliffe, who draws together the north Atlantic region and examines large cultural, exchange, and political networks in his *Facing the Ocean: The Atlantic and its Peoples 8000 BC-AD 1500* (Oxford: Oxford University Press, 2001).

Trade does not happen in a vacuum, this is certain. It can, however, provide a window into the framework for the workings of society and early urbanization or settlement patterns. What was being exchanged, and who was supporting this network? How localized was this early society? Who was paying for the creation and transport of these luxury goods? Who was consuming them, and to what end? Were there places that served as market centers or ports of exchange for these goods? Moreover, how critical was resource control for maintaining political control in Ireland? Or, phrased another way, which came first, long-distance trade or powerful Irish kings?

One way to approach these questions is to examine the archaeological record for evidence of trade: the objects being traded, their sources and destinations, likely routes and, to lesser degree, methods of transport. Another is to examine settlement patterns in Ireland and look for types of settlements that would have the potential to serve as trade or resource hubs. Remains from these sites indicate whether they were wealthy areas and if political control was exerted from them. Specific examples can be cited, the Navan complex being one, as it is the famed Emain Macha capital of the Ulster Cycle and classical mention, and thus some textual evidence does come down to us from its period of occupation.
Another way to approach these questions is to dive into the myriad of royal
genealogies available to scholars that attest to the earliest times of Ireland, indeed, back to
Noah by some counts and back to ancient gods by others. These formidable genealogies
are not for the faint of heart, being fraught with inaccuracies, inconsistencies, and dead-ends, and this author will leave the unraveling of those particular riddles to those with
much more expertise. For the time being, it appears best to approach the idea of trade,
corresponding settlement changes, and cultural changes from a primarily archaeological
perspective.

When discussing early Irish archaeology, as with much of Irish scholarship,
contradictions occur, with only speculation and imagination as a resolution. As always,
further research is both desperately needed and hampered by the demands of present-day.
For example, by some counts a minimum 37% of all earthworks mapped in the 1800s
have been destroyed by one of many government-sponsored programs of farm
development. 7 Michelle Comber speaks for many frustrated scholars as she complains
about the infilling of archaeological sites owing to industrial work, and notes that because
many sites are excavated under “rescue conditions”, archaeologists are therefore able to
only give a partial account of what exists before the site is destroyed. 8

Among the tragedies of Irish archaeology is that many of the earliest finds ended
up not in museums to be studied or even reliably documented, but were briefly mentioned
to the local public and then hidden away in private hands or destroyed. Entire caches of

7 Matthew Stout, “Early Christian Ireland: settlement and environment” in A History of Settlement in

8 Michelle Comber, Native Evidence of Non-ferrous Metalworking in Early Historic Ireland, BAR
International Series 1296 (Oxford: John and Erica Hedges Ltd., 2004), 49, 59. The destruction of Ireland’s
historical sites is not done without opposition. At the July 4, 2007 destruction of part of the Tara
complex, the razing began under cover of darkness, before protesters could arrive. A much-contested
roadway is to be built on the Bronze Age site.
Roman silver virtually disappeared this way, and with them and other treasures vanished valuable evidence of Ireland’s connection with the rest of Europe. Many artifacts previously examined are in the process of being redated in order to help narrow the period to which we can attribute them, and to give us more precise information about their origin and the circumstances regarding their import to or export from Irish soil.

Particularly, maritime trade needs to be much more closely examined, and the waters and coastlines carefully scrutinized for archaeological remains. Measures to do so are slowly coming into realization. Northern Ireland, on the eastern coast most easily accessible and highly traveled in prehistoric times, managed to establish a program for maritime archaeology in 1999, but they have struggled for training and have focused on the more easily recoverable wrecks of the seventeenth through nineteenth centuries CE.

Thus, historians, archaeologists, and art historians of prehistoric and early medieval Ireland have a plethora of debates in which to disagree. Establishing settlement patterns and the movement of Ireland’s early peoples is only one field, but within it lies the conundrum of having comparatively many remains and extremely little context in which to place them. Whether analyzed statistically or by stratigraphy, by excavation, by legend, or by dendrochronology, the two things nearly every scholar notes are the difficulties in arriving at any solid statements and the amount of disagreement within the field.

There are no simple answers to the settlement question, the “urban” question. After all, the successful urban centers, the continually populated centers, are the ones that are generally still occupied today in Ireland, making excavation and exploration quite complicated. Additionally, the sites that fell out of use and essentially disappeared beg the question of why they were abandoned. Were they failed settlements for reasons
environmental, or related to “crises, decline, or decay,” or was their failure simply a matter of poor planning in establishing the site originally?9

The long-held assumption that the Vikings brought towns and urban centers to Ireland has been distinctly cast aside in recent Irish scholarship, and the idea that the Irish had no taste for urban centers and preferred their pasture lands has been deemed equally unfounded. In fact, it has been shown that by the early Christian period, indeed, by the fourth century, early churches were serving as focal points of settlements with some of the attributes of urban centers. Eventually, if not early on, Irish kings became intent on acquiring these centers and exerted political and economical control over later Hiberno-Norse towns like Dublin and Waterford.10

There exists a vacuum in early Irish scholarship on the subjects of trade, economy, and urban development, and a wealth of unanswered questions about the origins of centers large enough (or of significant gravitas) to support trade networks and about the function of those focal points we do know existed. Previously, little attention has been paid to “understanding the nature and extent of prehistoric settlement or to the dynamic processes underlying” changes in settlement patterns; rather, the focus was on trying to date the remains found in settlements accurately enough to construct an image of what might have been at a specific site at a given time. Scholars often fell victim to the “seductive mirage” of confusing correlation with causality, that is, correlating environmental changes to settlement changes, with the assumption that a human response would naturally occur and thus explain certain events, rather than the settlement having a changing pattern all its own and allowing prehistoric populations to be independent of

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their environment. Unfortunately, while this independence might be visible on small-scale site examinations, an implied correlation between environmental pressures and changes in the human landscape is a necessary evil when constructing a historical narrative about social change over time.

So what, then, was in Ireland all those thousands of years - where and how did people live? What physical or social structures existed to support local and international trade? These are questions that beg answers that may not be easily forthcoming. Using the evidence of prehistoric long-distance trade to “prove” the existence of a ruling elite who controlled resources to stay in power and who focused the population on their own centers of residence or ceremonial power is risky. It is, by all accounts, backwards reasoning, but it is the kind of working-backward that has been done successfully in so many other areas where information about prehistoric societies is much more readily available.

Why focus on trade or long-distance exchange with foreign cultures? Exchange is crucial to the existence of social groups. Indeed, the introduction of foreign materials can force cultural adjustments that then become one of the ways a group defines itself against its neighbors, such as the adoption of “tribal” markings on pottery and the adaptation of

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certain objects to become status symbols and social markers.\textsuperscript{12} Trade is one of the methods for the most nascent social stratification to become something larger and more complex. Increased trade is also a result of social stratification, and establishing that a prehistoric culture had the resources to sustain long-distance exchange speaks volumes about what social system existed at that time and how it was run, and by whom. Trade contacts, and the wealth and status that depend on exchange, can help make or break a leader and his hold on the people beneath him.

Ewan Campbell rightly notes that it is important to look at foreign imports in terms of “general trade systems” rather than to focus excessively on the finite problems of distribution, because it is “the history of these systems which may give some insight into the changing economic conditions” in northwest Europe in post-Roman centuries. He also cautions that there should be no \textit{a priori} assumption that pottery finds (or other items) equal a direct link, as indirect trade is always probable, although much of the evidence strongly suggests direct trade is indeed what was occurring.\textsuperscript{13}

To illustrate the importance of trade and its vitality in gaining and maintaining political power, as well as to discuss other factors in the creation and downfall of prehistoric social hierarchies, some examples are useful. For the purpose of this

\textsuperscript{12} Geoff Emberling’s study on ethnicity from the later 'Ubaid culture through the rise and decline of Uruk provides fascinating insight as to how ethnic identity can be a social strategy, constructed and cemented by a group in the face of threatened assimilation or decimation. States tend to take groups and either enhance or suppress their identities, and groups face the choice of forfeiting their identity and dissolving into the state, or resisting and solidifying their ethnic identity in the process. As he shows in his study, an enhanced sense of identity can lead to intense detailing of symbolic objects to convey ownership or prestige. These objects would be symbols understood by others not in the group, and, across regional trade networks, may become valued for their rarity and distinction. The trading of fine luxuries from faraway places simply for their prestige can reflect this value. G. Emberling, “The Value of Tradition: The Development of Social Identities in Early Mesopotamian States,” in \textit{Material Symbols: Culture and Economy in Prehistory}, J. E. Robb, ed. (Carbondale IL: Southern Illinois University Press, 1999), 277-296.

discussion, there are no neat Irish analogies that can be pulled out: this chapter of Irish prehistory is still being dug from the soil, catalogued in minutiae, and theorized in abstract. Although some have looked at the evidence for Iron Age regional politics and “boundaries” around the ancient provinces, and have suggested that one or more prehistoric city-states existed across Ireland, there is still no definitive version of what existed in Ireland before Patrick arrived, just as there is no definitive version of what existed in Ireland after Patrick arrived. Even with all the evidence currently amassed, the modern scholar still rapidly reaches the limits of historical truth and enters the realm of speculation.

For the purpose of theoretical development, we will turn, briefly, to a comparable period of discussion across land and sea to the exhaustively studied cradle of civilization in Mesopotamia and the Aegean, both which would trade with Ireland, and where, by the Bronze Age, tribal hegemonies were giving way to nascent city-states and empires. This transformative process is not limited to the development of city-states alone. Many of the principles developed from the study of this region can be directly applied to tribal control and to the means of acquiring political power regardless of the area, with the basic assumption that populations react similarly under similar pressures and circumstances.¹⁴

Often in history, tracing the production of gold or the import/export of exotic goods or items of value is identical to tracing paths of power, political upheaval, and mechanisms of control. This principle does not alter much from society to society,}

¹⁴ The assumption that humans are humans, and have possessed roughly the same cognitive and social abilities since modern man came to be, is one of the principal tenets in constructing social theories about emerging civilization. It cannot be denied, however, that there are many exceptions to the “everyone acts the same” rule, but the case seems to be that the majority of evidence supports the idea that groups, as entities, react in similar fashions to similar circumstances. This is a behaviorist standpoint, and it is difficult to argue successfully against behaviorists, precisely because their evidence is so convincing in modern application. To explore the history and implications of this academic revolution fully would require another thesis entirely.
regardless of location. It is for this reason that theories of economic control are applicable from continent to continent, as long as allowances are made for the differences placed on “items of value” by different peoples.
THEORETICAL BACKGROUND

“I have built a country, but no one wants to play.”
- A child’s sentiment.

Civilization has many vague definitions, all depending on the area under discussion and the personal biases of the authors. For some scholars of antiquity, the Roman Empire is the epitome of civilization, and nothing before or since could compare. For others, a collection of smaller communities serving each other in an interdependent network qualifies. Perhaps the most defining feature, according to common agreement (be it right or wrong), is that “civilized” societies contain cities.

A city in prehistoric times is commonly defined as a large group of people who lived in a densely settled area and exhibited specialization of labor, interdependence among members for survival, and who possessed centralized institutions to regulate internal matters (such as the dispersal of an agricultural surplus) and to protect against external threats. These cities were frequently religious centers, a parallel that is found with royal centers in Ireland (whether or not they constituted “cities” aside). Power lay in the hands of a ruling elite, and societal emphasis in urban areas lay less on kin-groups, as in chiefdoms, but instead in status and wealth. “State-level” societies like these city-states also encompassed wider territories than kin-groups had, usually developed

economies based upon both long-distance and local trade, and imposed taxation upon both merchants and their population. Writing and formal record keeping usually followed, as well as public buildings and other monumental architecture. Many cities were fortified with walls and doubled as fortresses in times of war, a trend which may also be seen in lesser villages and tribal centers.

City-states were crucial to the formation of empires in Mesopotamia and the Aegean, and were a critical step in maintaining the development of these (and many) civilizations. In its most basic terms, the study of the evolution of city-states from tribal societies illustrates why social hierarchies form, where authority derives its power, and how resources are obtained and managed to support a large population, which are not unlike the basic questions scholars seek to answer about early Ireland.

“State-level society” is a misnomer of sorts, for the principles that define one can apply to societies which have little or no resemblance to “states” as we think of them in the modern period. Still, until a better label can be determined, “state-level” and “city-state” should be understood with more emphasis on the highly stratified ruling organization or population level, and less in terms of contemporary “state” associations. Any society may have attributes of a “state-level” society without actually fitting into the textbook definition of one; evidence of this is plentiful in much of Europe as well as Ireland. Whether this means that the accepted definition of “state-level” is too narrow, or that its faults merely stem from its origin in the study of a limited region, will be left for another scholar to determine.

There are eight factors which lead to the formation of complex societies and force circumstances in which social hierarchies develop.\footnote{This list is not necessarily exhaustive, but it contains the main factors at play in early Ireland and most early societies.} Items on this list are by no means
mutually exclusive, but they can be split into internal and external factors. The internal
factors are: scalar (communications) stress, the need for a controllable labor force (such as
children, wives, kin, clients, serfs, or slaves), the need to restrict and control land use, and
the need for reliable access to necessary resources, if one cannot own them. The external
factors under discussion are warfare, resource competition (caused by population growth,
boundary constraints, environmental changes, or other factors), technological
developments leading to unequal advantages, and finally, trade and exchange, both within
the group and with foreigners. In prehistoric and early Christian Ireland, we have very
little traces of internal factors - a few law tracts, and settlement patterns displaying social
ranking - but we have ample evidence of external factors at play: environmental crisis,
population growth and movements, warfare, and trade, both local and international.

Scalar Stress and Hierarchical Development

One reason social complexity and hierarchical organization develops has to do with the magnified problems of organization and communication that face smaller tribal
societies: maintaining order and having clear and effective decision-making in a large group
of densely settled people. These decisions, such as those concerning the maintenance of
irrigation systems, defensive works, or grain storage and dispersal, would be crucial to the
survival of the people; yet, with no clear (or coercive) authority, the likelihood that
everyone would individually come to the same decision and assist accordingly is slim.

Scalar stress is both a product of and a critical factor in the development of
leadership and hierarchy. Up to a point, as the number of decision-making entities within
one organization increases, so do the number of decisions able to be made effectively.
This limit is between six and seven entities (individuals, units, etc.).\textsuperscript{17} Once that limit is surpassed, however, there are too many decision-making bodies to come to a satisfactory and efficient consensus, and productivity and administrative efficiency plummet: cliques form, conflicts occur, disagreements tear groups apart. This has been shown to be the case with enlarging chiefdoms, for as kinship ties become more and more complex and far-reaching, more and more individuals have claim to authority. At the risk of otherwise becoming stagnant and chaotic, paralyzed by the inability to get anything done, a switch must be made to one specific ruler, usually hereditary, in order to streamline decision-making. The bureaucratic trappings of advisors, councils, and court tend to follow as individuals find their place of authority in the developing kingship system.\textsuperscript{18}

One outcome of this process in Ireland can be clearly seen in the Ulster Cycle, a series of tales that have been passed down through oral tradition, and other legends that date back to Ireland’s prehistory. Kinship groups in the tales are complex, even within rival provinces or kingdoms or in the “otherworld” of gods and faeries. If these tales are representative of acceptable traditions from the early period, it is clear that kinship relations were hardly simple or linear. Much scholarship has been devoted to attempts to determine from the early annals which degree of relatedness allowed claims to the earliest thrones in Ireland; by some counts it could have been \textit{any} male who shared a paternal

\textsuperscript{17} For a more thorough explanation of scalar stress and a breakdown of its effect in creating hierarchies, see the Appendix.

\textsuperscript{18} To use Geoff Emberling’s classification, I speak of vertical differentiation, or the placement of different individuals within one group into a hierarchy. He goes on to discuss horizontal differentiation, or the incorporation of many groups into a state, and how these different ethnic groups may be at odds, competing for resources within the same overarching state structure. This, too, leads to a hierarchy, but one of ethnic groups within a common state, where certain groups are subordinate. This model continues to be applicable, regardless of how many levels are considered: villages, cities, states, provinces, empires, and in modern times, nations. Emberling, 277-296.
great-grandfather who had once been king. Obviously, there had to be a more clear path to leadership in Ireland, although what exactly was in place remains uncertain.

**Labor Control, Land, and Hierarchical Development**

Gary Webster presented a loose model for stratification and the formation of chiefdoms in prehistoric Europe based first and foremost on the control of a labor force rather than a control of wealth or commodities, and argues that this stratification occurred before the elites controlled resources such as trade. His model has been attacked repeatedly for his de-emphasizing the effects exchange and material wealth have on organizing societies, but parts of it are quite relevant in the discussion of Ireland.

According to Webster, once “socioeconomic pressures” reach a critical point, stratification begins to occur. These are, by his count, agricultural stress and geographic boundaries or external factors that prevent a population from expanding to greener pastures. Marginalized and less productive lands are used in an effort to maximize production, and internal friction is magnified as resource competition becomes necessary for survival. Webster argues that stratification occurs in kin groups - clans, on a larger scale - before non-kin members are drawn in, and thus kin are the first dependents a leader uses as a labor force. He suggests that in early societies, available agricultural surplus, including cattle, was quickly converted into bride-prices and wives, thereby increasing the immediate kin group through the production of offspring, who represent another labor force, particularly in agricultural societies. Thus wives were a measure of wealth, and in

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time this led to ever-increasing regulation of bride-prices and marriage restrictions (possibly limiting appropriate mates by wealth or “class”) as well as inheritance restrictions. By the early medieval period (7th-8th centuries CE), this much is clearly true and present in the laws of Ireland. It is also worth noting that because Webster’s system begins with agricultural surpluses, those families resident on more productive lands would have more purchasing power, so to speak, and these nascent elites would grow larger at a faster rate than kin-groups on marginalized or less productive land.

A core group of loyal kin formed a base of power and military support that could then allow for forced subordination of other groups, or tribal lineages, and also force non-kin into dependent or client relations where tribute or labor was owed to the now-chief. Webster also presents alternative methods of drawing non-kin members or neighbors into dependent relationships, and it is here that exchange becomes central to his theory. Dominant leaders, or patrons with dependent kin or other clients, have an inherent advantage in patron-client relationships. The patron and his kin control access to a resource that non-kin clients want. Whereas kin have an inherent right to use land or resources by virtue of relation, because the kin-group owns, limits access to, and serves as a primary labor force to defend the resources, access by the non-kin clients remains dependent upon a conditional agreement by which the patron usually gains labor or material wealth in exchange for provided limited access. Together, and with repetition on many levels, this system led to complex chiefdoms. Complex chiefdoms (tuatha) based on a complex clan system are indeed the hallmark of early medieval Irish society, and we have no reason to believe such a system did not begin centuries earlier.

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21 See Fergus Kelly, A Guide to Early Irish Law (Dublin: Dublin Institute for Advanced Studies, 1988) 70-79, 104. Note the continued use of cumal as both a female slave and a unit for measuring wealth.
Other Facets of Highly Stratified Societies

In many ways complex societies are organized to alleviate scalar (communications) stress, beyond just a clear, topdown authority that could otherwise be provided by kingship. Since only a few individuals hold most of the power, kinship ties become only important for defining class, or caste, depending on how open or closed the society is. Record-keeping ensures that accountability is demanded of each individual, who has forfeited some of his or her rights in exchange for the security provided by the “state”. An active military force is necessary to ensure this security, both internal and external, and also provides a means by which upward social movement can be achieved.

Essentially, whereas a chief is only as powerful as his followers and every man counts vitally to the survival of the group, a state is stronger than its people and has more command of resources external to that of merely the individual. If a portion of a chiefdom is dissatisfied and chooses to leave the tribe, odds are they would merely pack up and move, with minimal hostilities at that time. Again, within the Ulster Cycle we see the group of warriors led by Fergus mac Roy defect to Connacht, and while they become enemies of those they left behind in Ulster, nowhere in the tales does anyone try to force them to stay. If a portion of a state tries to achieve independence, it is likely civil war would result. This fact alone can lend greater stability to the existence of a state-level society.

Food, Farming, Technology and Trade

There are other, external factors to consider in the formation of highly stratified societies besides the internal pressures of (and reactions to) scalar stress within enlarging groups. Theories abound, but most center on the varying importance of three major
requirements for highly complex societies to begin to develop.

Of these, the first factor is a large food surplus, as it allows for leisure time and task diversification, and the rise of a class of craftsmen.\textsuperscript{22} A diverse farming economy is another important requirement for increasing social complexity, because the diversity helps buffer against famines or natural disasters, and can provide desirable agricultural products for trade.

Gordon Childe’s “urban revolution” theory emphasizes the importance of an agriculture surplus in the formation of state-level leadership. According to his theory, after the so-called “Neolithic Revolution” switch to settled agriculture, small surpluses accumulated in times of plenty. These surpluses allowed for some leisure time in communities, which in turn fostered specialization on other tasks such as metalworking or craftsmanship. The luxury goods created were then marketable as trade goods, and enlarging trade networks led to the interdependence of communities and a sharing of information. While Childe’s theory has its flaws, much of it was adopted by later scholars and is applicable to early civilizations throughout the world.\textsuperscript{23} In Ireland, certainly, the ability to support a class of metalworkers in society by patronage is evident by the Bronze Age,\textsuperscript{24} and their products were undoubtedly traded both locally and over considerable distance.

The sharing of technology takes a strong role in this model, as seen when the technique of alloying tin and copper to produce bronze spread through merchants or traveling craftsmen and led to the creation of the metal-tipped wooden plow. The

\textsuperscript{22} This is, of course, in reference to Gordon Childe’s classic “Urban Revolution” theory, which although flawed, has value. A discussion of its merits and failures can be found in Fagan, 338-9.

\textsuperscript{23} Fagan, 339.

\textsuperscript{24} Whether or not craftsmen were actually dependent clients to patrons is debatable, certainly so the later one looks in Irish society. See chapter four for more details.
increased efficiency of farming allowed farmers to plant more crops in less time, and thus increased the carrying capacity of the community. Populations increased according to the available bounty, intensifying the need for more surplus to guard against famines while also providing the ruler(s) with more humans to exploit for physical labor, the military, bureaucracy, as tradesmen, and so forth.

Trade also created, according to Childe, a consumer society demanding more luxury goods. Along with merchants, those who managed and controlled the goods selected, hoarded, and distributed as signs of wealth would have gained in prestige and power as well. Combined with other factors such as military strength, additional power, and prestige from trade, the wealth one could accumulate would provide a solid platform from which an ambitious person could assert leadership over a settlement, tribe, or urban center.

**Warfare and Resource Control**

Finally, there are the aspects of resource control and warfare in developing social complexity. Thirty-five years ago, Robert Carneiro proposed a theory that civilization is not a choice, but an inevitability of resource competition and the resulting warfare. While his theory proved lacking in evidence, his central tenets formed the basis for later, more sophisticated theories of state formation. By this reasoning, tribal development and kinship were far more binding than previously thought, tying people to the land, possessions, and networks of family, and conceivably making it very difficult for them to leave and start over elsewhere without these supports. Communities kept growing, tribal villages enlarging, until the population began to run out of room against natural barriers, or

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run out of resources to support themselves. Certain individuals who found ways to control limited resources needed by the greater whole would have quickly been catapulted to positions of great power. Moreover, those who could prevent internal conflict by finding ways to mediate disputes or eliminating them by physical force would also have found themselves in positions of power. In this way ample opportunities are present for the development of official kingship.  

If we take into consideration the inherent disagreement over leadership that would likely emerge during the development of hierarchies and kingships, the question then becomes why the dissident individuals within would elect to remain with the community and accept inequality. According to a study by J. L. Boone, individuals tend to remain in disadvantageous situations if that is the only foreseeable way they have access to critical resources necessary for survival. He notes that one of the requirements of an effective social hierarchy is the development of infrastructure to reinforce itself, a way to enforce sanctions or punishment upon its members to keep them in obedience. Thus, military leadership and the development of an on-call brute force are hallmarks of highly stratified societies, used to control and prevent internal strife as well as maintain external security. Additionally, subordinate classes can themselves be considered a resource, for labor, taxation, or exploitation, and this pragmatic view serves to reinforce the incentive elites possess to retain and enforce their status and hierarchy.

**Regional Politics: Another Layer of Power**

Regional conflict can be viewed as an assertion of these same forces on a larger  

26 Fagan, 343-51.  
scale: instead of an individual taking control within a village to manage resources, trade, and security, we see dominant groups, tribes, or urban areas rising to do the same over a larger area, subjugating other settlements in a hierarchy of groups. Those that were able to control vital resources immediately had power others lacked, and by doling them out accordingly to allies would ensure cooperation among neighbors. Additionally, if resource competition became a matter of survival among those in a nucleated settlement, that alone would be ample incentive for them to look seriously into military conquest of areas rich in said resources, or of groups who did control them, such as trading ports or villages on fertile land that could provide more crops.

**Culturally-Linked Trade Empires: A Grecian Example**

The Aegean and Mediterranean Sea region is an excellent place to find early city-state societies and ‘empires’ that were built upon commerce and a shared culture, as it has been suggested was the case in Ireland. The Minoans succeeded in building an empire of trade by controlling influential cities and ports. At its apex, Crete was completely self-supporting and a major exporter of both luxury goods and staples using renowned mariners. On mainland Greece, the Mycenaeans flourished from roughly 1600-1150 BCE, with slaves to build the fortresses and palaces of the elite, warfare among city-states over territory and seaports, and an extensive trading empire taken over from the Minoans. Eventually carrying-capacity pressure increased, because a general decline in crop yields occurred as their fields began to show the toll of years of intensive farming. This agricultural pressure, combined with warfare between city-states, to led to the downfall of Mycenae. Without its main city holding authority and prospering, the trading empire
subsequently collapsed.  

However, because of its cultural unity and shared religion, the various city-states of Greece and the Aegean tended to pull together when faced with outside threats. In this way, despite lacking political leadership, the Greeks remained a kind of cultural empire that was linked strongly by the trading that had revived by the seventh century BCE. Fifth-century Athens seized power and inherited the regional mantle of wealth and control, pouring its earnings into, most notably, the Parthenon and the Acropolis. The Greeks unified to defeat the Persians and classical Greece came into being, with the Athenians heading a league of maritime cities. The resulting empire waged a devastating war with Sparta, whose militaristic and highly state-controlled society had never meshed well with the Athenians.

After losing the Peloponnesian War (431-404 BCE), the financially hurting Athenian Empire fell from grace, and Greece soon came under the command of Philip of Macedon (r. 359-336 BCE). Philip finally began what all the other rulers of Greece had neglected, and implemented administrative changes to force a political unity over Greece. Philip’s son, Alexander the Great, learned his leadership well, and built on the existing imperial foundations to construct the largest empire yet. By using military power for the conquest of pivotal cities and enforcement of rule, such as the destruction of Thebes and enslavement of its inhabitants in 335 BCE, Alexander controlled Mesopotamian and Aegean trade. He reorganized the empire’s bureaucracy from Babylon, issued currency and maintained strategic alliances while he planned future military campaigns. By the

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29 Fagan, 456; see also Kinder, 50-61.
time of his death in 323 BCE, Alexander had succeeded in creating an empire that, however brief, unified lands from Persia to Egypt and Greece and sowed the seeds of the Roman Empire.\(^3\) The Romans, without a doubt, held an iron grip on the trade routes crossing both to northern Europe and those crossing through the Mediterranean into the Atlantic and up the seaboard - and to Ireland.

From this brief summary, it is apparent how commerce and exchange can play a vital role in both gaining and maintaining power and the creation of linked villages and societies. So if this nascent world-system was the way of “civilised” man, how does the rain-streaked, forested land of Ireland compare? Scholars may never be able to argue convincingly that a state-level society - or societies - existed in early Ireland. Surely, however, there is evidence that not only did Ireland participate actively in the above-mentioned exchange networks, but that commerce and exchange served many of the same functions in Ireland as it did in the deltas and drylands so far away.

\(^3\) Fagan, 456-8; and Kinder, 61-63.
THE BRONZE AGE

“Who were the wearers of these [gold] collars, and were they men or women or both, and on what ceremonial occasions were the collars brought out? Since all are chance finds and for the most part unassociated with other diagnostic objects, one cannot be more specific than to say that the wearers were the descendants of the Neolithic, Beaker, Food-vessel, and Urn folk.”  

- Michael J. O’Kelly

Mining, Metallurgy and Trade

The Bronze Age in Ireland is generally regarded to encompass the years between 2500 and 600 BCE. This is often split into the early period (2500-1200) and the later period (1200-600), a system which is only useful as long as one accepts the reality that cultural continuity appears to be fairly high (and slowly evolving), and it is sometimes easier to discuss the period as a whole rather than break it upon imaginary lines. This is also the case when discussing sites that appear to have been occupied from the Neolithic through the early Christian period, unless significant breaks in site usage are apparent in the archaeological remains.

The early period has supplied scholars with a range of burial evidence, ceremonial sites, metal artifacts, and particularly of late, increased evidence of native mining and

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31 Michael J. O’Kelly, “Bronze-age Ireland” in *A New History of Ireland, Vol. I: Prehistoric and Early Ireland*, Dáibhi Ó Cróinín, ed., (Oxford: Oxford University Press, 2005), 129. This particular quote likely dates to the 1970’s era original submission. It should be noted that O’Kelly neglects the labor-intensive aspects of the gold lunulae under discussion, and their ceremonial and status-symbol implications of a hierarchal society.

32 Cooney, 17.
knowledge of copper extraction. Metallurgy and exchange networks are tightly related in
the prehistoric period, perhaps disproportionately so simply because of the amount of
metalwork that comes down to archaeologists today as opposed to perishable trade
goods. As Barry Cunliffe rightly points out, scholars must note that the archaeological
emphasis on the long-distance transportation of exotic goods is not the norm. Most
manufactured goods had both a localized production and distribution. We also cannot say
much for certain about changing intensities of the quantity of goods traded, not only
because so little is found, but because the majority of finds are likely objects deposited
ritually or used in ceremony for burials. All we can really note is an increased trend in the
number of offerings made or deposits created. It is also safe to presume metal goods
that were found in prehistory were melted down and recast into artifacts of their time.

The early Bronze Age in Ireland may have begun before 2000 BCE with an initial
copper phase, where unalloyed or arsenical copper was used as raw material for
manufactured objects. Copper metallurgy had begun in Iberia by 2500 BCE, and this
technology may have arrived in Ireland through sea contact, although this cannot be
directly evidenced. Some contact between Ireland and southwestern Europe during the
neolithic times is assumed to have occurred, attested to because “the same megalithic cult
prevailed in both regions,” inspiring monumental group tombs that were reused
throughout the centuries that followed into medieval times. Another idea is that bronze-
making skills spread into Ireland around 2000 BCE with the so-called Beaker people,

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33 Cooney, 17.
35 A naturally occurring alloy.
named for the beaker-shaped pottery they left. All over Europe the Beaker people, or at least the Beaker culture, has been closely associated with metal knowledge and the search for metals. The invasionist perspective would have the Beaker peoples sweeping rapidly across Europe and into the British Isles, bringing with them new metalworking techniques that gave them a decisive advantage over the natives. When applied to Ireland, the claim sits that Beaker people came from Britain into the northern half of Ireland, where most of their pottery has been found; and a second group came from Brittany and the Rhine areas of the continent. Unfortunately, there is no evidence of Beaker culture in southern Ireland where most of the earliest copper mining took place.  

Indeed, this invasionist perspective has largely been abandoned in light of other revelations. In order for this culture to become as rapidly widespread as it did in so few centuries across Europe, a great deal of force would have been needed to conquer the indigenous populations. Nowhere is this evidenced in the archaeological remains, leading some of the invasion proponents to suggest that the Beaker people were able to coexist peacefully with neolithic populations, while simultaneously exerting total influence over them and subverting their culture. This scenario seems unlikely, and with historians and archaeologists moving away from the invasionist trends of earlier decades, new explanations of the so-called Beaker people have emerged.

Cunliffe neatly disposes of the idea of “Beaker folk” as a migrating people, instead speaking of the “Beaker package” to explain the metal technology and ideas that went hand in hand with the “rise of the individual” across western Europe, a cultural shift seen in the simultaneous transition to single burials from the great megalithic group entombment, and the corresponding celebration of individual wealth found in burials. He

argues that this package/culture spread so quickly simply because it traveled along existing exchange routes from the Mycenaean empire in the Aegean to Brittany, and to Ireland.39 This new explanation of cultural exchange via commerce is echoed by others: “The old view of the users of Beaker pottery as intrusive pastoralists with a mobile settlement pattern has largely given way to a recognition of...new artifact styles introduced through contact and exchange rather than any large population movement”.40 This is a much more satisfactory explanation, particularly given the lack of finds that would imply warfare across Europe against a common group of invaders during this time, or rapid settlement change.

However metalworking technology arrived in Ireland, by 1700 BCE tin bronzes were being made, and mining was widespread. The main source of copper in the northern Atlantic zone was southern Ireland, where the earliest mine has been identified on Ross Island in Lough Leane, County Kerry.41 Later mines have been found at Mount Gabriel in west Cork, where tunnels up to nine meters in length were made by fire-setting. In this practice, a fire was made against the rock to heat it before cold water was poured on it. The rapid cooling shattered the stone, and the loose rock was then scraped and hammered out, crushed with hammers, and the ore concentrated by hand-picking and washing.42 Researchers and archaeologists assume that the ore was taken elsewhere for smelting, as that process required careful furnace construction and temperature control. Although no

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40 Cooney, 18.
41 Ore analysis supports that Munster, primarily the counties of Cork and Kerry, were the main source of copper in early Ireland and Britain both, as there are no recognized Bronze Age mines in southwest Britain. R.A. Ixer and R.A.D. Pattrick, “Copper-Arsenic Ores and Bronze Age Mining and Metallurgy with Special Reference to the British Isles,” in Mining and Metal Production Through the Ages, Paul Craddock and Janet Lang eds. (London: British Museum Press, 2003), 9-20.
actual evidence of smelting has been found, some cakes (or ingots) of the raw copper produced have been recovered. Major copper deposits have been found in the counties of Cork, Kerry, Tipperary, Waterford, and Wicklow, and lesser deposits in Down, Dublin, Galway, Leitrim, Lough, Mayo, Meath, and Tyrone; many of which show evidence of early mining.

Copper was plentiful in southern Ireland, if only it could be dug out, and would have provided a means for exerting social control. Copper made an ideal resource to control and limit access to, either at the mine itself, or through the use of secreting away the technology for smelting and alloying. As discussed in the previous chapter, patron-client relationships form quickly when one party has access to something the other party desires, perhaps even more quickly if the patron kin has the advantage of stronger weaponry. The exchange of copper ore, forged bronze goods, and even knowledge of alloying and related metallurgy could have been an ideal place for increasing social stratification to begin, or accelerate. Alloying techniques were not mere accident, they required precision and expertise, and bronze technology revolutionized the prehistoric world. The ability to control this exchange even on a very local level would have resulted in a gain in prestige. This in turn could lead to more clients, through choice or coercion, especially as bronze weaponry was stronger than copper alone.

Copper was available, but the problem facing early metallurgists was the lack of

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43 One possible technique for smelting, known as hearth-smelting, has been proven to produce poorer quality ore, but leave no slag behind. Replication experiments have also shown that the physical evidence for such hearths virtually disappears within one year because of environmental degradation. If this was the primary method of smelting, it would explain the lack of evidence. This is a subject of debate as the ore that would have been produced is of questionable quality to be matched to the bronze that was created at the time. S. Timberlake, “Early Mining Research in Britain: The Developments of the Last Ten Years,” in Mining and Metal Production Through the Ages, Paul Craddock and Janet Lang eds. (London: British Museum Press, 2003), 21-42.


tin needed for alloying to create bronze. A small quantity of tin could be found with the alluvial gold in County Wicklow, but the total workable area is small and acknowledged to be not nearly enough to satisfy the demand. Tin was discovered at some point in Britain (Devon and Cornwall), and it is likely from there that tin was exported to Ireland. Evidence exists for tin mining at Cornwall as early as 2000 BCE, and this area appears to have remained the primary source of tin for western Europe and the Aegean for over a millennium. As Michael O’Kelly pointed out, “a trading or other arrangement must have been set up to obtain sufficient [amounts] of the metal, probably from the Cornish mines, if not from somewhere further afield”. Any other scenario seems quite far-fetched: a traveling band of Cornish or continental smiths each carting around their own tin supply, or Irish bronze smiths going to Britain or the continent to mine, smelt, and bring back their own tin? Both appear enormously inconvenient, if not entirely unfeasible, given the scarcity of tin deposits.

Once tin deposits were discovered in Cornwall, Britain became the major tin supplier for western Europe for centuries. Trade and travel continued between peoples along the Atlantic, with travelers from the Mediterranean and even the Near East participating and establishing colonies. Ireland, Britain, and Denmark all served as destinations during this period for long-distance travelers, as well as having their own more local exchange systems. In exchange for the ore or finished metals, merchants offered their own exotic wares, and perishables such as skins, surplus food, slaves, and

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cattle. It should be noted that because of its scarcity, the value of tin would have been quite high, especially as it was required for alloying bronze weaponry and other basic necessities of security. One can imagine a fair amount of material wealth came to those middlemen who dealt in the tin exchange, although this is speculation in a non-monetary, non-literate society. One need only look to the Middle Ages and beyond to note other points in history where merchants in a patronage system gained not only great wealth but political and often military power.

The Irish metallurgists were gaining a reputation during this period: “It has been said that the earliest metallurgists in Ireland were very highly skilled. Not only could they select the right deposit, handpick, wash, and concentrate the ore; they could control the roasting, smelting, and possibly refining processes in a very competent way, and eventually alloy.” Stone molds have been found for casting bronze axeheads, knives, spearheads, and sickles. These exist in both single (open) and bivalve kinds, and produced rough forms that needed to be hammered and finished to fine edges. Later, clay molds were used, although these are found mostly in shards as they had to be broken in order to retrieve the poured item, and further in time a finer type of stone that could be carved more easily came into use. These developments permitted more shaping to the rough form, and produced more finite metal forms that would presumably require less effort to finish. 

50 Cleland, 234.
51 Fifth-century BCE Athens leaves records of tin having a value compared to copper of 1:6.6, and this was centuries after further tin sources had been discovered in Iberia, Sardinia, and northern Italy, and were being exploited. While this is centuries ahead of our period of discussion, the principle of supply and demand remains the same, and this early notation of price helps provide some perspective on tin’s value at a more modern point in time. From Muhly, 275-291.
During the Neolithic period a trade of axes was strong across the British Isles, and some historians refer to axe “factories”, sites at which a great many axes were produced and traded. Evidence shows British axes were found in Ireland, and axe factories probably had counterparts in Wales, Cumberland, and elsewhere. It is quite likely that the bronze metallurgists used much the same routes for their bronze wares.

Within Ireland, hundreds of halberds, daggers, swords, and thousands of axes have been recovered. Of the axeheads, some are so finely crafted and ornamented “that one can hardly imagine them ever having been used for any kind of rough work”.\(^\text{54}\) This fits neatly with the corresponding “rise of the individual” and valuation of individual wealth that appears to have arrived with the metalworking culture, where metals were used as status symbols. With the use of metals as status symbols and buried as such, a stratified society where a specific class limits access to metals and doles them out according to status is implied.

Halberds, many of which show no sign of sharpening, wear or use, may also have been used for ceremonial or symbolic purposes. These date to c.1700-1550 BCE, and may have been exported to the continent. At the very least, the idea of halberds was exported and copied.\(^\text{55}\) The earliest form of the daggers found, the tanged Knocknague type, is markedly similar to that found in Britain “and it was from there that the idea and the shape were introduced”.\(^\text{56}\) Metallurgic chemical analyses have been done to determine the types and levels of impurities in bronze and copper artifacts found around Ireland, and to trace these metals to their sites of origin. The results of these studies show a trade of finished goods or ores from northern Britain into Germany, and an equally active

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parallel trade of bronze goods from Ireland through Wessex and over the sea to Brittany on the continent.57

Bronze, however, was not all that Ireland had to offer Europe. Gold ornaments and crescent-shaped necklaces, *lunulae*, were exported, and gold items of Irish manufacture can be found in Britain, France, Belgium, Denmark, and Germany. Gold objects have been found mixed with late Neolithic and Beaker pottery sherds, indicating gold working began very early in the Bronze Age.58 Some of the earliest gold objects found are discs with geometrical motifs, originally thought to be evidence of a sun cult that extended from Ireland through Britain (where other discs have been found) to at least Denmark, where a little bronze wagon with a sun-disc mounted on it was found in 1902. The Irish discs have been called sun-discs, but unlike the sun-discs found elsewhere, the Irish discs have perforations in the center which suggest they may have been sewn to clothing as ornamentation or decorative buttons. In fact, “two discs from Roscommon are similar to a pair from Oviedo, Spain, and may indicate Irish-Iberian contact,” an idea which is supported by other finds.59 Basket-shaped earrings made from sheet gold are another find from this period, although they are not localized in Ireland. Other examples have been found in a Beaker grave at Radley in Oxfordshire, England, and still other sheet gold earrings “have parallels in Portugal and may be further evidence of Irish-Iberian contact”.60


60 O’Kelly, *Early Ireland*, 179.
Perhaps the most well known Irish gold exports from the early Bronze period are lunulae, crescent gold collars that show considerable workmanship. Most are heavily incised and finely etched with triangles, chevrons, and other geometrical designs so that with light, they would give quite a showy, glittering effect. It has been suggested that lunulae were inspired by Egyptian collars of gold, or crescent jet necklaces found in Scotland or northern Ireland, but these are older hypotheses and are very uncertain and (so far) unsupported. Indeed, as the ornamentation on the lunulae is very similar to that found on Beaker pottery, the tendency is to attribute the idea of lunulae to the native Irish. Regardless of their inspiration, the lunulae recovered are all definitely of Irish origin, and were definitely exported or (less likely) made by Irish craftsmen who were on the continent. Joan Taylor’s study lists eighty-one lunulae found in Ireland and twenty-two found outside of Ireland: six in Scotland, four in England, one in Wales, nine in northwestern France, one in Luxembourg and one in Germany.

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63 Barry Cunliffe mentions 85 lunulae having been recovered, but does not delineate from where. See *Facing*, 244.
Ireland’s true golden years, it may be said, were those of the later Bronze Age, when gold was plentiful and the amount recovered from hoards and ritual deposits is truly remarkable. From where, though, did the Irish find the massive amounts of gold used to create the ornaments and artifacts that have been discovered? Alluvial gold was used from County Wicklow in the lunulae and golden objects of the early Bronze Age, this much has been established by ore-tracing, but there was simply not enough present to account for all the gold of the later period. Other sources of gold in Ireland included small alluvial deposits in the counties Tyrone, Derry, Donegal and Antrim, but there is doubt as to whether these amounts could suffice. An opposing argument exists that the Irish imported gold ore for smelting and finished the ore into fine products, or alternately imported the gold objects themselves. Either way, as the Irish smiths appear to have risen in reputation and exports continued, Irish gold deposits were nearly exhausted by the Iron Age.  

It is not unreasonable to consider that the Irish were importing ore or gold ingots for production. By the later Bronze Age, trade routes were well established to Ireland: from the Mediterranean Sea through the Straits of Gibraltar, up the Iberian and Gallic coasts to Britain, and from there to Ireland, or bypassing Britain to Ireland itself. Land routes were also in place, with merchants using the Rhône and Rhine rivers to reach the English Channel, and from there crossing to Britain and Ireland. Another land route crossed the continent to end in Brittany, where merchants then traveled by sea to Ireland. Cunliffe suggests a twelfth century BCE route by which Dorset and Somerset lay linking the Irish metal-producing sites to the English Channel and the continent. He

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64 Cleland, 234.
65 Cleland, 235.
illustrates this by tracing the spread of the leaf-shaped swords known as the Ballintober swords found in County Mayo and across northern Ireland, southern Britain, and Seine valley. A later rise in popularity of the slashing sword shows a definite and strong link between Ireland and the continent in the seventh and sixth centuries. Horse gear and cart fittings from the continent have been found across Britain, and it is in these centuries that the arrival of iron technology may have occurred.

The later Bronze Age is conventionally divided into three phases, named after important hoards. The Bishopland phase, from 1200-900 BCE, is marked by the presence of new tools: socketed axes, punches, gravers, anvils, the knobbed sickle, and new kinds of ornaments, mainly of gold. The namesake hoard at Bishopland, County Kildare, contained the “tools of a specialized craftsman”, and the availability and continued value of gold as a status symbol is evidenced by the large number of recovered torcs, which “came into Britain and Ireland from the west Baltic and were being made in gold in Ireland from about 1200 BCE onward”. Of the examples found in Britain and France, some may be Irish exports or merely copies. It was before the end of the Bishopland phase that the bronze sword was introduced.

The next phase is the Roscommon phase, a conventional division marking the centuries of 900-700 BCE wherein only a few bronze artifacts have been found. The debate about whether this period constitutes a phase at all is ongoing, although many historians generally disregard it for the more interesting and promising Dowris phase, from 700-200 BCE. The Dowris phase is marked by many new items: decorated bronze,

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66 Cunliffe, Facing, 291-2.
67 Cunliffe, Facing, 292-3.
leather, and wooden shields are found, as well as axes, knives, swords, scabbards, spearheads, many more finds of a militaristic nature, and various hammers, buckets, and bronze cauldrons. Bronze trumpets and horns that produced very simple sounds have been found mainly in southwestern Cork, Kerry, Clare, and Antrim in the north. It has been suggested that Dowris-phase gold-working centered around the lower Shannon valley, and that a “school” of metalsmiths was in place to ensure stylistic continuity.70 Although such a training school is speculative, many different types of gold ornamentation have been found across Ireland that date to this period: pins, clothing fasteners, hair-rings, bracelets, collars, boxes, balls, beads, rings, plates, and impressive crescent gorget collars. Leather corded bracelets and a necklace, covered with gold wire, were found in hoard at Derrinboy, County Offaly. These particular accessories have parallels in Westmeath and Sligo, and have also been found in Britain and (perhaps) Scandinavia.71

More than just bronze and gold wares were exchanged during this period. Ireland also benefited from Denmark’s stores of amber, valued for its color, which was brighter and clearer than that found in the Mediterranean or Asia Minor and drew traders from across Europe and the Near East. Amber was also light for its value when compared to metals like gold or bronze, and easy to fashion into beads for jewelry and ornaments. Many amber beads have been found in Irish burials and hoards, presumably imported from the Baltic. These were used to make some spectacular multi-stringed necklaces and other ornamentation. In one later Iron Age example, there were roughly 500 beads in a

necklace from Derrybrien, County Galway, which dates to 150 +/- 90 BCE.\textsuperscript{72} Jet, another ornamental substance traded at this time, is found in one of the more famous finds, that of a grave at Tara which revealed a male youth with the remnants of a necklace containing bronze, amber, and faience glass lying where it had fallen from him. Faience was a much desired glassy substance originally found in ancient Egypt and the Mediterranean world, and widely traded and imitated. The faience at Tara was originally thought to be from Egypt or the Near East, but it was found that beads were not true faience but an imitation made of powdered blue glass and quartz that had been molded and fired.\textsuperscript{73} These and other faience beads have become a source of debate, as some argue they may have been manufactured more locally in Europe or even in Britain. Cunliffe suggests that the distribution of faience beads on the continent indicates the existence of other manufacturing centers, including one in Scotland and one in Britain.\textsuperscript{74}

The Dowris phase may be considered not just the end of the Bronze Age, but the beginning of the Iron Age, especially the latter half of the Dowris, as major changes occurred in Ireland around 500 BCE. Ireland was apparently cut off from continental trade after 600 BCE, and Britain too after the mid-fifth century BCE. One external theory attributes this collapse in trade to the growing powers in eastern France and southern Germany which weakened and redirected the entire Atlantic trading system between 700-400 BCE. Additionally, the arrival and creation of Phoenician colonies “created a new entrepreneurial dynamic” that further “undermined” other trade contacts.\textsuperscript{75}

\textsuperscript{72} O’Kelly, “Bronze-age Ireland”, in Ó Cróinin, New History, 133. Photographs of amber finds can be found in plates 3 and 4.

\textsuperscript{73} O’Kelly, Early Ireland, 187.

\textsuperscript{74} Cunliffe, Facing, 258.

\textsuperscript{75} Cunliffe, Facing, 293.
The idea that the valuable tin trade from Cornwall and the northwest to the Aegean decreased during this period is supported by evidence that once tin deposits were discovered in Iberia, particularly northern Portugal, they were heavily exploited during the period of Phoenician expansion and colonization. This would indeed have pulled sea and land traffic away from Ireland and the northwest and given the dynamics of exchange a more southwestern focus.

Another theory that is equally credible and could have occurred simultaneously has been raised by Barry Raftery. He suggests an economic recession occurred within Ireland itself in part because as iron technology swept Europe, bronze became obsolete as the metal of choice and the demand for exports dramatically decreased. This recession, he argues, when coupled with increased population levels and less space because of environmental stress, led to military conflict and a total end of Bronze Age culture. From a literary perspective, this may be the earliest period to which the events of the famed Ulster cycle can be speculatively dated.

Settlement and Land Usage

We have seen that the island was in near-constant contact with the islands of Britain and the Atlantic seaboard, and that several desirable resources existed that could be controlled: copper, tin importation, gold, even faience or amber imports. A chief or king who controlled a mine or had metalsmiths in his retinue or kin, or had trade contacts bringing him foreign luxuries would have the ability to grant unique favors and bestow status items upon his kin and clients in exchange for loyalty, labor, and tribute. The next

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76 Muhly, 275-291.
step is to examine physical (and literary, where possible) evidence for the existence of a stratified society in which an elite class was positioned to manage these operations and consume (or disperse) the luxury goods traded across the seas. Although this search is difficult because the context for many early sites is vague, evidence that the circumstances would have fostered increasing social complexity is plentiful.

While settlement and actual building remains have been found dating to the Neolithic, and even earlier to the Mesolithic, the early Bronze period is rich in pottery and burial finds but scarce in house or dwelling remains. Neolithic houses were rectangular or circular structures, apparently with sod or wattle walls and timber (oak) posts supporting a thatched roof. Sometime before the end of the Bronze age circular houses came to dominate, and remained the dominant form until the eighth century CE. Why this transition in building design took hold and what this meant in terms of cultural change is still unknown.

Many excavated sites show continuous occupation from the Neolithic period through the Bronze age (and later), as attested to by Beaker and other ceramic styles found. Examples of this include the sites of Newgrange, Knowth, and Lough Gur. It may be noted that the Boyne Valley is considered by some to be a center for settlement (and ceremony) during this period, as Newgrange, Knowth, and other sites show an increased amount of activity during the Beaker period. The Boyne Valley’s proximity to Britain would have presumably placed it in the midst of luxury trade, especially if

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79 Cooney, 14.

80 Cooney, 17; and O’Kelly, Early Ireland, 217.

81 Cooney, 18.
ritual centers and a concentration of elites kept the demand for such goods high.

Land use changed as well through this early period. Taken as a whole, the distribution of burials and artifacts indicates that much of Ireland’s land was under use during the early Bronze age, if not continuous usage. Settlements were growing, possibly hand-in-hand with a population increase, and most definitely in step with large-scale environmental changes. Gabriel Cooney notes the expansion of some sites into areas that may have been previously considered unimportant, but attributes some of this growth to diversification and advances in agricultural practices. There was also an increasing use of lowland river valleys, which might represent further population expansion. However, Cooney adds that this possible expansion correlates with, and may in fact relate to the accelerated growth of blanket bog in upland areas, that is, the population may have simply been on the move for better land. This bog spread was significant, and much of the land was lost during a period of environmental deterioration that lasted from c.2000-1700 BCE. As a consequence much of what we know about prehistoric farming comes from the preservation of field boundaries beneath the bogs. Additionally, there is now solid evidence for heavy-metal pollution of the land from prehistoric mining, and while the spatial extent of such pollution is as yet undetermined, we can assume it negatively affected the land, vegetation, and ultimately the human inhabitants in the immediate areas of mines.

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82 Cooney, 18.
83 Cooney, 18.
84 O’Kelly, Early Ireland, 217.
85 These boundaries are seen more easily using arial photography. Cooney, 18.
It is apparent, then, that several very important factors in the creation or intensification of social stratification were in place by the mid-Bronze age: an increasing population density along with agricultural developments, and then crisis as encroaching bogs and other environmental boundaries prevented expansion into optimal lands. Models of prehistoric behavior in other lands, as discussed earlier, suggest these circumstances lead to the population’s movement into marginalized areas of land, and that appears to be precisely what happened in Ireland.

Indeed, around 1500 BCE archaeologists see a new type of temporary settlement: the *fulacht fiadh*, or “burnt mound,” so noted for the remains left by cooking using heated stones in a trough. These are not indicative of a mobile settlement, Cooney clarifies, but of the new usage of wet landscapes previously unused and not part of the permanently farmed landscape. There are over 4500 known, with the highest density in Cork, Waterford, Kilkenny, and Tipperary. This presumed new usage of wetland areas was also supported by the first major wave of construction of roads or causeways over narrow points of bogs, such as the Mountdillon complex of County Longford.

After examining evidence from early sites, such as the Beaker sites in the Boyne Valley, and later sites at Cullyhanna, County Armagh; Meadowlands, Downpatrick, County Down; Carrigdirty, County Limerick, and Chancellorsland, County Tipperary, Cooney notes a general pattern emerges. This pattern of “small clusters of circular houses and other structures, some possibly enclosed” with settlement sites slightly higher than related tombs in the valleys is presented by Cooney as representative of a general structured arrangement of society’s buildings, a “zoned” system or way of life where

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87 Cooney, 20-21.

88 Cooney, 22. A small number of Neolithic trackways are also known, but this is outside the current scope.
“burials, settlements, and metal artifacts may have been placed in different niches”.

“At the very least,” he adds, “it is clear that there was ascribed social ranking, probably based on family or kin groups, and horizontal differentiation on a gender basis”.

A more descriptive model for later bronze age settlement has been developed from the “North Munster project”. This model postulates the importance and social ranking of different types of settlements, although since it is a regional model, differences will presumably exist if comparative models were made from settlement studies in the other provinces. At the top of the social scale are hillforts, whose size and location indicate regional “concern”, i.e. ceremonial, defensive, or royal purposes. Lesser settlements are the substantially defended hilltop enclosures (not actual hillforts) and enclosed lakeside defensive structures. Below them are the enclosed or open house clusters, which are comprised of main residential structures and ancillary structures. A hierarchy is evident where the common farmer and his family are on the bottom rung, those whose wealth or importance necessitated a partially defensive structure are in the middle (metalworkers perhaps being among this group), and large, defensive, hillforts sit at the top tier, occupied by the most powerful chiefs, their immediate kin, and their retinues.

There is a category of wetland site that falls outside this neat hierarchy. At Moynagh Lough, County Meath, and Killymoon, County Tyrone, are sites that are not so much settlements but places for metalworking, cereal processing, and “deliberate deposition that might be associated with a high-status site”.

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89 Cooney, 18-19.
90 Cooney, 19.
92 Cooney, 22.
for manufacture and processing something of a nascent community center for the surrounding areas, lacking residential structures in the immediate vicinity but containing ceremonial aspects that were used for important religious or royal occasions? Nothing is certain, but we must consider this option until shown otherwise.

By the later Bronze age, the previously megalithic culture had ceased to create new large ritual monuments and henges, and extensive field systems make their first appearance in the archaeological record. A trend of increasing arable farming between 1400-1300 BCE shows a “distinct” expansion around 1000 BCE, and the population expansion into central lowlands continued despite being made difficult by the heavy, poorly drained soils, and the constantly encroaching forest. The increased human activity found in settlement and agricultural expansion left an environmental imprint as well: the pollen count drops around 1000 BCE, which translates to large-scale land clearance. This same period also correlates to a peak in causeway construction, further indication of a population shifting its agricultural focus and its population centers, and in need of means to stay in contact with various places nearby. All of these signs lend strength to the argument that Ireland was, at the time, undergoing a shift toward increasing social stratification. As complex chiefdoms developed from simpler, more localized tribal arrangements, it would have been imperative to establish effective communication between clients and ruler. Road building is also not a one-man job, and the entire community, or select members of the community, must have organized to construct the causeways. If clientships and complex chiefdoms (or tribal kingdoms) were in place, this

93 Cooney, 24.


95 Cooney, 22.
organization of workers could easily be explained by the king or highest chief calling into order all the surplus labor owed to him by kin and clients.

Indeed, a network of routeways already existed and was expanded through forests and along rivers and natural ridges. Trackways made of branches, oak planks, or woven hazelwood were laid across bogs. Some were several kilometers in length, linking a chain of communities and presumably different localized tribes. Wheeled vehicles were in use at this time, pulled by some sort of draft animal. Heavy wooden wheels have been recovered that would have been too weighty for the trackways across bogs, so they must have been used for dryland transport or domestic, farmers’ work.96 Because of the varying terrain of Ireland, it is assumed extended journeys were made on foot or by water in dugout canoes and skin-covered coracles.97

In fact, the ease of transport around Ireland has been pointed out by Barry Raftery, who makes the notable point that the cultural homogeny of the island found in archaeological remains attests to the fact that ideas and goods must have flowed freely.98 Cunliffe takes this one step further to argue for a continuous language, expanding his scope to include the Atlantic seaboard in a family of closely related languages, but these linguistic speculations are on ever-shifting academic ground.99

Environmental changes and population movement led to more than merely the creation of trackways and an expansion into lowland areas. One of the major hallmark settlement types from the later Bronze Age is the hillfort. Some of the better known

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examples are the trivallate hillforts of Haughey’s Fort in the Navan Complex, County Armagh, and also at Mooghaun, County Clare, both which date to between 1200-1000 BCE. A multivallate cliff-edge fort at Dún Aonghasa shows complex occupation, with circular houses and metalworking spanning 1300-800 BCE.\textsuperscript{100}

Navan Fort is of interest particularly because it is the royal site known as Emain Macha in both classical-era maps and the Ulster Cycle. The fort itself contained activity, having a ditched enclosure with an internal structure beneath the Iron Age remains. There is evidence for grain storage, access to large breeds of animals, and gold working, which suggest this settlement was at the top of an economic and social hierarchy. It is “very probable” that there were ritual or ceremonial aspects to this site because of its importance, or rather, we can ascribe an importance to it based on its presumed position in society.\textsuperscript{101} At Navan, at least, the archaeological evidence supports the general idea of a strong royal center that also served as a center for grain storage and distribution, obviously controlled pastoral lands for its herds, and supported luxury workers such as goldsmiths. It may be too speculative to call these royal areas nascent urban centers, but examining them is an appealing way to determine who was controlling the trade (chiefs, through middlemen) and how luxury goods were brought into Ireland and distributed to clients and kin as favors, bride-prices, or to those with enough wealth to purchase them.

**Burials**

Burial evidence in Bronze Age Ireland further attests to ever-increasing social stratification. It also is where much of our evidence of the luxury, long-distance trade

\textsuperscript{100} Cooney, 22-23.

\textsuperscript{101} Cooney, 22-24.
comes from. When the burials are examined from the earliest, Neolithic period to the later Bronze, early-Iron period, some drastic changes are noted, most of which can be summed up as the enigmatic “rise of the individual”. The “rise of the individual” is a common phrase encountered when examining prehistoric populations across Europe and beyond. It is most commonly used to refer to a phenomenon that occurs hand-in-hand with the transition to an agriculturally based existence and the increasing social complexity that generally follows such a transition. The “rise of the individual” roughly describes the valuation of individual wealth and status over group subsistence and prosperity.¹⁰² Society’s focus changed, then, from communal, mostly cremated burials in or around megalithic tombs to individual, unburnt burials with grave goods during the Bronze Age, with some exceptions. Children have been found buried together, and mother-child (and mother-fetus) burials are also known, suggesting the latter died in childbirth.¹⁰³

It should be noted, as Colin Burgess states regarding the whole of the British Isles, that there simply does not seem to be enough burials to account for the population level expected for the time.¹⁰⁴ Burials are discovered usually accidentally, and presumably other burials are still hidden, if not built over by modern development. Burgess also

¹⁰² This “rise of the individual” is not connected to that phrase’s usage when discussing the Renaissance of the twelfth century. The Renaissance “rise of the individual” is related to the glorification of individual identification in artistic practices, likely for fame. The Bronze Age “rise of the individual” is the phrase archaeologists and historians assign to the actual valuation of individuals as individuals for the first time in the prehistorical record, opposing the existing group mentality. This is also the period in Europe and the Mediterranean to which many of the most famous myths or legends of heroes are dated, indicating an oral tradition celebrating individuals arose alongside these new burial practices. This new celebration of the individual life, this new renown, and the physical evidence of individual burials instead of group graves, is what is referred to here.

Moreover, this evidence points strongly to a firm contact between Bronze Age cultures that allowed myths, legends, and the celebration of individual renown to spread across the continent, a fact supported by marked similarities between a number of ancient myths.


suggests the original megalithic tombs were not nearly as communal, or egalitarian, as they might appear. Building such monuments would have required direction and leadership, and a stratified labor force, and he concludes that even in the Neolithic, the megalithic tombs were reserved for the elites. Their island-wide specific orientation (most face south or southwest) and the architectural commonalities of the monuments suggest a common belief system and knowledge of astronomy. Many of the stone circles have a clearly emphasized axis which is aligned with solar markers (such as the Equinoctial sunset), bright planets such as Venus, stars, and other celestial bodies.¹⁰⁵

Cunliffe combines evidence from megalithic tombs and external trade (particularly the rise of the bronze industry and the southern axe factories) to suggest that by the early Bronze Age, Ireland had been split into two dominant cultures: the outer, Atlantic half of the island which retained its older Neolithic traditions (including the creation of wedge

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tombs), and the inner, Irish Sea half which was exposed to western Scotland, and shared the changes experienced by Britain (including the use of cist graves, passage, and portal tombs). The inner half of the island would have experienced different waves of ideas, beliefs, and technology than the outer, a trend that dominates Ireland’s history into present day. This cultural split lends further credence to the idea that trade and contact with the continent was markedly influencing the course of society’s development.

Megalithic tombs were no longer being built by the Bronze Age, and communal burials became less common, presumably as social stratification became more and more complex and elites sought ever-increasing status markers, even in death. Cist graves become common, some at the base of standing stones. However, the passage, court, and portal tombs built in the Neolithic period remained in use, not just during the Bronze Age but well into the early medieval period. Tombs are often located near settlements that remained occupied, and likely had continued cultural significance, even after they were no longer used for communal burials. Whether this significance was ceremonial or religious in nature, historical or mythological, we cannot know. Nyree Finlay’s fascinating study

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107 Maps of this East-West cultural split, as evidenced by the types of burials carried on in different parts of the island, can be found in detail in Figures 5, 6, 9, 11, 12, 17, and 19 in F.H.A. Aalen, Kevin Whelan, and Matthew Stout, Atlas of the Irish Rural Landscape (Toronto: University of Toronto Press, 1997), 33-37. See also Figure 2 above.
109 Cist graves are typically small pits dug in the ground, often lined with stone slabs to make a box-like structure, sometimes including a capstone. Michael O’Kelly lists an average size of 80 x 50 x 50 cm, with the unburnt body placed tucked up on its side, knees drawn to the chest. As he phrases it, the bodies were “literally rammed into the grave,” with a pot or other goods placed near the head. O’Kelly, “Bronze-age Ireland”, in Ó Cróinin, New History, 104-5.
110 O’Kelly, Early Ireland, 228.
111 Finlay, 407-422.
112 Cooney, 26.
does point out that during the Bronze period, these megalithic tombs were often reused as repositories for infants and children, and sometimes even remodeled to make room for the young.

The passage tomb of Fourknocks I (County Meath) is one example. It contained twenty-one children: seven neonates, six children in their first year, three in their second year, one child around age five, one of undeterminable age, and three cremations. Broken rocks lying on earlier cremated adult remains indicate the tomb was remodeled in the early Bronze period to make room for the children’s inhumations. Finlay posits that the monuments were being reused as sacred, visible and yet removed “homes” for untimely deaths. Assuming children were considered valued and necessary members of this agrarian society, these inhumations may be interpreted to show the degree to which the early Irish still revered the megalithic tombs. While the elites had their single inhumations, their grave goods, and their own rituals to set them apart, young children who had yet to meet any of society’s social milestones or achieve status of their own were lent an older, more communal and sacred resting site. Owing to the few number of child inhumations found considering the period of reuse, perhaps it was even a specific, elite class of young children who were allowed this honor.

**Hoard**

Hoard are a contentious lot to explain, not merely in Ireland, but all over Europe. Barry Cunliffe points out that nearly all the bronze and gold goods recovered in Ireland have been found in hoards or from bogs or rivers, and suggests that this was a form of ritual consumption, that is, taking the conspicuous wealth and placing it out of circulation

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113 Finlay, 407-422.
into “the realms of chthonic deities,” a practice accepted by scholars.\textsuperscript{114} Exactly why, or to what deities, is still quite uncertain. A popular example of deposition of this kind is the King’s Stables (a small artificial pond) at the Navan complex, Co. Armagh. In this pond dog and deer bones, clay molds for pouring metals, and other metallurgic valuables were ritually deposited.\textsuperscript{115}

Other theories exist, however, in regard to dryland hoards. Were they stockpiled by a group or individual who intended to return, and could not; perhaps material wealth buried in times of warfare for safekeeping? While it is generally accepted by scholars that hoarding occurs mainly in times of distress and drastic change as a way of protecting items of economic or emotional value from outside influences, this narrow explanation does not seem plausible, as often these hoards are simply large gatherings of the same kind of object, sometimes hundreds of near-identical pieces.

Richard Bradley has approached this particular problem using hoards from across Europe, and argues that instead of viewing hoards as a merely a deposition for safekeeping, they should be examined from the point of consumption, distribution, and commerce, especially because hoards and depositions appear to lie mostly on territorial boundaries or at the edges of said material’s range of use.\textsuperscript{116} In essence, Bradley argues that hoards delineate exchange and monetary boundaries between various cultural groups, and the objects contained within represent a form of material currency (either for their base metal value or for their ceremonial or cultural value), exchanged in a primitive way as modern humans do when flying from one country to another. Additionally, he argues that

\textsuperscript{114} Cunliffe, \textit{Facing}, 253.
\textsuperscript{115} Raftery, \textit{Pagan}, 24.
hoards of material goods can represent merchants’ caches for distribution and trade into neighboring areas.\textsuperscript{117}

From this perspective, hoards are further evidence of an existing complex industrial organization for metallurgic workings, distribution, and trade involving permanent workshops, exquisite craftsmanship, the importation and exportation of raw and finished goods, and a strong social organization. This is further supported by the facts that in the later Bronze Age, as resource competition grew more intense, the deliberate burying of metal objects in hoards increases. A separation begins between gold, bronze, ornaments, and other utilitarian objects, suggesting specific items were hoarded for their increased worth in times of scarcity. Finally, metalworking in this later period shows strong regional differences, and even more finite differences between local areas.\textsuperscript{118} Barry Raftery agrees with this conclusion, and argues for a strongly hierarchal society with ruling dynasties that could support such wealth and division of labor.\textsuperscript{119}

Towards the late Bronze Age and early Iron Age, archaeologists find a marked increase in metal goods and signs of wealth, as well as a significant increase in war-related materials (swords, spears, wooden, leather, and bronze shields\textsuperscript{120} etc.), and defensive hillforts become the norm. Obviously society was becoming more unstable while resources for everyday life, such as arable land, were increasing in scarcity. Valuable metals, too, were becoming more scarce, the gold of Ireland was drying up, and Phoenician


\textsuperscript{118} Cooney, 26.

\textsuperscript{119} Raftery, \textit{Pagan}, 24.

\textsuperscript{120} The bronze shields were ceremonial, because their thin composition would render them useless in battle. Raftery, \textit{Pagan}, 24.
traders were cutting into and diverting trade from the North. By all accounts, Ireland and Britain both were in a state of severe economic recession at the start of the Iron Age, accompanied by a noticeable increase in violence and territorialism. All resources, then, were more tightly controlled and defended, be they sources of wealth or sources of livelihood, as all were means of exerting power.
THE IRON AGE AND EARLY CHRISTIAN PERIOD

“In fact there is no valid reason, as far as I can see, to assume that there were any contacts at all between the island in the west and the faraway eastern Mediterranean, separated by some thousands of miles.”
- Joseph Raftery, 1965.121

Catastrophe and Revival in Brief

The Iron Age period extends from 600 BCE - 400 CE in Ireland. The period from 400 - c.600 CE is referred to here as the early Christian period. The following discussion is concerned only through the sixth century CE largely because, as T.M. Charles-Edwards drolly notes, the Irish “dark age” of political instability began anew with the rise of Roman expansion and ended with economic upturn as the Roman Empire collapsed.122 To neglect the remarkable influence of the Roman Empire on all of Europe would be folly, and to pretend that Ireland was somehow immune to the ebbing of such a large foreign economy even as Rome established itself across the Irish Sea would be willful ignorance. Thus, for the purpose of this discussion, the author will create a new division and refer to the period from the first century CE to the Early Christian Period as the Roman Period.

Throughout the Iron Age and into the medieval era, Ireland was at war, be it traditional bloodshed or wars of perceived influence. Resource scarcity, environmental


pressure, climactic change, a profound real estate scarcity: all these factors followed the collapse of copper and tin mining, the bronze trade, and the general economy, and the situation was ripe for anyone who could control status symbols, access to resources, land, or trade, to secure himself clients and underlings willing to fight for him and his interests.

Archaeologists find more war-associated goods from this period, and also metalwork and La Tène styles from the continent associated with elite, royal, or otherwise high status sites.\textsuperscript{123} The Iron Age also saw the construction of linear dikes and “massive timber roadways” across bogs, unmatched either before or since. Barry Raftery suggests they were “attempts to proclaim the limits of tribal hegemony”.\textsuperscript{124} At the very least, they stand as graphic examples of the social order in place, and of power concentrated in a few very capable hands. Additionally, by the time of the Early Christian period, two coexisting economic systems were solidly in place: the lower freeholders worked the land, and the elites concentrated their wealth in cattle herds.\textsuperscript{125}

Exchange and trade continued, even while Ireland’s sociopolitical order spiraled into chaotic competition and warfare, only to emerge highly stratified by the early medieval period, when the fabled high kings of Ireland make their very real appearance. Indeed, exchange itself is a form of power and display, and was likely a large component of the perceived sphere of influence of a ruler. Power is, in many cases, merely illusion, and this illusion of far-flung contacts and an ability to court the exotic would have been persuasive when backed by the concrete threat of brute force.


\textsuperscript{124} Raftery, \textit{Pagan}, 65.

The Iron Age: Evidence for Exchange

While Europe entered the Iron Age, Ireland remained in the Bronze Age, using bronze and gold as its main metals, and its previously flourishing export industry collapsed. The theories for this network collapse are still speculative, mainly because the exact timing and correlation of events cannot yet prove the sequence of relevant archaeological evidence. Regardless, one factor given weight for this period of collapse in the north Atlantic network is that the amber trade from Denmark fell off in the early Iron Age, while amber trade from Prussia picked up over the continent, causing the entire region to draw fewer merchants.

Equally, trade from the Mediterranean fell off around 400 BCE, a decline clearly visible in burial goods. This phenomenon is explained by the fact that in the fifth century BCE, Greek exploration of the Atlantic decreased significantly because the Carthaginians took power of the seas. The c.509 treaty between the Romans and the Carthaginians limited Roman ships from areas the Carthaginians were trying to control, including “beyond the pillars”, or the Strait of Gibraltar and the Atlantic. This ended Greek exploration for over a century, and allowed for the spread of fierce and frightening propaganda myths of monsters and terrible lands by the Carthaginians, who used literary sources and myths to scare other merchants and explorers away from potential riches.

Another wide-lensed theory proposed by Barry Cunliffe attributes this collapse in trade to growing powers in eastern France and southern Germany which weakened and redirected the entire Atlantic trading system between 700-400 BCE. Additionally, the

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creation of Phoenician colonies in the Atlantic region “created a new entrepreneurial
dynamic” that further “undermined” other trade contacts. Barry Raftery has argued
that trade to the entire north, Ireland included, came to a virtual halt after the mid-fifth
century BCE, causing an economic recession and creating political instability among the
existing peoples.

All of these theories appear to have evidence in their favor, and perhaps with future studies a more concrete series of causal events will be revealed. Without the influx of commerce geared towards the northwest of Europe, trade slowed and the exchange of technology and ideas slowed as well. This may explain the centuries-long delay in iron-working technology reaching Scandinavia, Ireland, and Great Britain.

Contact with Ireland in the earliest part of the Iron Age may have decreased, but it did not halt, and we have our earliest classical authors to thank for records of travel from this period. Nearly all of our knowledge of travelers’ accounts is through highly derivative sources, and scholars are forced to rely heavily on Strabo’s Geography and Pliny’s Natural History where most of the references occur. Still, after examining the sources, it seems that the Greeks were familiar with the routes and waters up to the English Channel in the early Iron Age.

As classicist Philip Freeman notes, it is Rufius Festus Avienus, who wrote his Ora Maritima in the fourth-century CE based upon earlier authors, who ironically is the

128 Cunliffe, Facing, 293.
130 Cleland, 237.
131 Roller, xv.
132 Roller, xix.
133 Roller, 21.
very late recorder of what may be the earliest classical knowledge of Ireland.\textsuperscript{134} Avienus mentions Ireland and relates Greek and Carthaginian information dating to c.500 BCE.\textsuperscript{135} He references the use of skin boats by the native Irish, important when considering that these skin-covered boats were their main form of water transportation for centuries.\textsuperscript{136} One of Avienus’s sources is the Carthaginian Himilco, who likely reached the British Isles c.500 BCE.\textsuperscript{137} Duane Roller asserts that Himilco “may have” also reached Ireland, for he wrote of a “sacred island” known for the richness of its soil, the Greek for which is similar to the Greek used later for Ireland (Ierne).\textsuperscript{138} This leaves Himilco with the distinction of being, to our knowledge, the first Mediterranean man to document the early name of Ireland.

We also know from this period that wine exports began in the fifth century BCE by Massalians.\textsuperscript{139} It is not unfeasible to suggest that trade between Gaul and Ireland continued much as it had in the Bronze Age. Roller notes that from the northwest corner of Brittany, at Ushant, to the closest point of Ireland, Old Head of Kinsale in southwest Cork, is approximately 250 miles, or two days of “hard sailing” in the ancient period.\textsuperscript{140} Transportation was still as reasonable as it had been in previous centuries, and we know trade continued in the northern Atlantic to some degree.

\textsuperscript{134} Freeman, 28.
\textsuperscript{135} Freeman, 28.
\textsuperscript{137} Roller, 27.
\textsuperscript{138} Roller, 28-9.
\textsuperscript{139} Roller, 68.
\textsuperscript{140} Roller, 29, note 54.
However, archaeological evidence from this earliest part of the Iron Age is rare, as there is virtually no pottery, few graves, few sites that can be accurately dated to this period, and few excavation finds. What is apparent is that there was no extensive cultural gap between the Bronze and early Iron ages. In some places it is possible to see hallmarks of both the Bronze and Hallstatt cultures side by side.\textsuperscript{141}

Older colonization theories have it that Celtic-speaking people entered Ireland sometime after 400 BCE, bringing iron-working technologies with them. It is no longer accepted that there were two “invasions” of these iron-skilled peoples, one from Brittany and one group from northern Britain, a claim previously justified through oral legends and linguistic study.\textsuperscript{142} An alternative theory that has acquired acceptance disputes this dual colonization by outsiders and argues instead that the iron-working, proto-La Tène culture arose internally as the existing people adopted the new culture and skills as they were exposed to them by foreigners, presumably via merchants and visitors. Iron-working technology arrived in Ireland c. 500 BCE,\textsuperscript{143} and local bog iron was an important source. It could have been discovered while cutting peat, and was used in Limerick and Tyrone. R.F. Tylecote suggests this bog iron is a renewable source, and with continual deposition it can reform up to 10 cm thick in 30 years’ time.\textsuperscript{144} Metallurgy from the later centuries

\textsuperscript{141} Lloyd Laing, \textit{The Archaeology of Late Celtic Britain and Ireland c400-1200 AD} (London: Methuen & Co Ltd, 1975), 145.

\textsuperscript{142} There may, indeed, have been migrations of peoples into Ireland that led to the linguistic differences studied today, but migrations are not on principle hostile invasions. Invasionist theories abound in Irish histories, and spring from an earlier historical and archaeological trend, a movement which has become passé and thus allowed for a focus on more than just the militaristic remains. For a concise look at how old migration and invasion theories are still being debated, now by British “genetic detectives”, see the article: Nicholas Wade, “English, Irish, Scots: They’re All One, Genes Suggest”, New York Times.com, 5 March 2007. Wade’s article even touches on the old theory that “they’re all Basques”, too.

\textsuperscript{143} O’Kelly, \textit{Early Ireland}, 259.

BCE does show a clear stylistic and ideological connection with the continent, and an iron-based La Tène culture was well established in Ireland by 150 BCE,\(^\text{145}\) nearly 300 years after it was established in Europe.

The La Tène period across Europe is characterized by elaborate and often delicate workings in gold and bronze that at times show classical roots in their design. From this period in Ireland we also see significantly more aristocratic weapons and war artifacts: golden torques worn by warriors, war trumpets, and ornamental sword scabbards, as well as bowls and discs, all with the characteristic spiral decorations and raised reliefs. Most of the La Tène finds are located in the northeastern two-thirds of Ireland, in the areas that had the most contact with Britain.\(^\text{146}\) It may not be mere coincidence that this was also the area (Ulster, mainly, and Meath, where Tara lies) in which the great battles over cattle, land, and power were waged in the great Irish sagas such as the *Tain Bo Cúailnge*. While the timing of these sagas’ historical warfare is still debated, it is largely accepted to be within this period, that is, within two hundred years or so of the turn of the millennium.\(^\text{147}\) It was then, after all, that the land-space crunch caused by declining environment and expanding bogs, economic downfall and subsequent population movement led to instability and the increased production of weaponry, major earthworks, and defensive ringforts and crannogs as befitting chiefdoms at war.

Also from the La Tène period we find decorated swords, shield accessories, spear

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\(^{145}\) Laing, *Archaeology*, 146.


\(^{147}\) However, David Greene has made a noteworthy observation that the sagas do not mention horse-riding, a skill which would have been well known by the time the tales were recorded in the Christian period. This absence attests to the archaic nature of the material in the sagas, as horse-bits and related material date in Ireland to the second century BCE. Therefore, he observes, the sagas must be from around then or earlier. See O’Kelly, *Early Ireland*, 255.
butts, and fragments of horse harnesses, all which support the idea of warring kingships. Because iron ore was found more widely across Europe, it was cheaper to make and use in utilitarian objects like axes, hoes, and iron plows. Incidentally, this commonality also would have contributed to a decline in northern trade, as there would be no need for Mediterranean merchants to travel so far to get ore.

Yet before we leave Ireland’s earliest, proto-La Tène peoples for dust, it is worth noting a few significant visitors to and authors about Ireland in these few centuries. First and foremost, there is Pytheas, a Greek explorer from Massalia, which at the time had ongoing relations with Rome. Duane Roller dates his fourth-century voyage to the 320s BCE, at the time of Alexander the Great’s expansion, and suggests the voyage originated as a reaction to fear of Alexander’s expansion. Although Pytheas is later lambasted by Strabo as a “liar and creator of fables”, it is “probable that he at least saw the island, even if he did not actually set foot there”. Pytheas went up and around Britain to Thule (Iceland), and possibly through Britain. There is also evidence he visited the Cornish tin mines, perhaps tracing the Massalian routes to import tin in this period. At the very least, Pytheas was very near, within eyesight of Ireland, and may have been told

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148 Roller, 60.
149 Roller, 58.
150 Roller, 60.
151 Roller, 63, 66.
152 Freeman, 33.
153 See Roller, 70, for an identification of Iceland as Thule.
154 For measurements to calculate his journey, see Roller, 71.
155 Roller, 72.
further details about the island by British informants who had been there themselves.¹⁵⁶

Later, in the third century BCE, Timaeus of Sicily wrote his *Sicilian History* and noted that tin was exported from an island off the southwest coast of Britain, giving us proof that merchants knew of and continued to visit the British Isles.¹⁵⁷

Then the sea changed hands again, just as the La Tène culture in Ireland was becoming entrenched. In the second century BCE, c.146, Carthage’s aquatic reign collapsed and the Roman “centralized state” trade took over the seas. Trade to the north, however, was slow to revive, as Carthaginian propaganda had left a legacy of fear and unworthiness in the minds of the Mediterranean travelers.¹⁵⁸

When trade with the Mediterranean largely resumed by the later Iron Age, goods were sent both north and west to Scandinavia and Britain, and on into Ireland along the same routes that had existed from the Neolithic and Bronze ages. The major cross-continental trade routes up the Rhône and Rhine helped bring merchants and Mediterranean goods to Ireland via Great Britain. Bronze objects, wine and oil amphorae, ornaments, glass, coral, amber, and perishables of skins, slaves, and food stores were traded up and down the rivers of central Europe to reach the north and northwestern edges of the known world.¹⁵⁹

The skull of a barbary ape has been recovered from Navan Fort, also known in classical and Irish literature as the Ulaidh capital, Emnain Macha. The ape is native to northern Africa, and is further proof of travel and contact, although we cannot fathom its

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¹⁵⁶ Roller, 73-74, note 150; see also Freeman, 33-4.

¹⁵⁷ Freeman, 34.

¹⁵⁸ Roller, 99, 105.

¹⁵⁹ Cleland, 232-238.
purpose in Ireland. Additionally, we have from the last two centuries BCE four small bronze figurines of Italian origin: an Etruscan warrior, a robed Etruscan figure, and two Hercules.

Around the turn of the millennium we see certain objects of Irish origin appearing in Scotland and southern Britain: the so-called doorknob spear butts, named for their resemblance to modern-day doorknobs. This is consistent with the two points of contact evidenced in trade routes: through Northern Britain, the land of the Picts; and through southern Ireland to southern Britain (or Gallic Brittany).

Further proof of sea travel comes from a remarkable archaeological find in Broighter, Co. Derry. A gold model boat with mast, oars, and sail was recovered. It is 0.18 m in length, dates to the first century BCE, and is the earliest representation of a boat in Ireland and one of the earliest “mast and sail” representations in all of northern Europe. While the consensus is that

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160 It should be noted that the ape could have arrived in one of two ways. Direct trade would involve a trip from Africa to Ireland, give or take a few stops, in which the ape or head was carried along expressly as a gift, tribute, or novelty item for a person of rank in Ireland. The second method involves indirect exchange, where perhaps the ape was removed from Africa, traded in Spain, traded again or paid as tribute again to end up in Gaul, and from there bounced to Ireland or through Britain first. We cannot know which method, or which intentions, carried the barbary ape to Ireland. The fact it is there, however, is proof enough of far-flung networks.

161 Freeman, 2.


163 We also have proof of sea travel in that Roman olla were found 130 miles (250 km) west of Ireland in the cargo of wrecked ship, dating to no later than the second century CE. Further study must be done to date this find more precisely. Roller, 55 note 84. See also Freeman, 5-8, for commentary on how this item might relate to Juvenal’s famous satirical claim that Rome had reached “beyond the shores of Ireland”.

164 Breen and Forsythe, 40.
the model represents a skin boat, certain scholars remain convinced that it represents instead a plank-and-rib construction model, indicating perhaps a more southerly or Mediterranean influence on design.\textsuperscript{165} There has also been a Mediterranean-style, dugout-sized plank boat recovered from Lough Lene in Co. Westmeath. This find dates to not later than the first century BCE, and has been suggested to be representative of southeastern merchants traveling inland, or at the very least a presence of such a group that left a marked Mediterranean influence on the boat-builder.\textsuperscript{166}

We also know that by this time roads were in place in Ireland, used for internal transport and travel. The raised roadways were on mounds with ditches for drainage, and post holes exist alongside where fences marked territories and the edges of hill forts. Ancient oak roadways were constructed over bogs, and a paved, cobbled roadway has been uncovered in the south of Ireland. If more exist, these paved roadways would have made the transport of heavy goods via wagons much easier, much as they were used in Britain by this time. While the paved road dates to c.139 CE, the earthworks date back to around 100 BCE,\textsuperscript{167} suggesting that perhaps the idea for paving was borrowed from Roman Britain.

In the final century of the millennium in Ireland, Julius Caesar left his commentary on Ireland for scholars of the future. Caesar took overland routes to the British Isles in 55-54 BCE,\textsuperscript{168} and likely drew on Pytheas and other early Greek geographers for his sources. He gives the name of Ireland as *Hibernia* (from the Latin “wintry, cold”) in view of the classical world’s opinion that Ireland was at the end of the northern world where it

\textsuperscript{165} See Breen and Forsythe, 41.

\textsuperscript{166} Breen and Forsythe, 41-3.


\textsuperscript{168} Roller, 116.
was nearly uninhabitably cold. The measurements Caesar reports for Ireland are relatively accurate; for example, that Ireland is half the size of Britain (approx. 82,460 square km versus Britain’s 230,000). His is not a bad estimate for an age of limited technological means. Caesar does not leave us much other information on Ireland, but we may note that the island was still an object of interest, worthy of geographical scrutiny, and perhaps being considered with Britain as a future target. After Caesar’s brief foray into Britain, there is a 91 year absence of Roman power in the area until the formal invasion under Claudius in 43 CE.

The Roman Period: Evidence for Exchange

As clearly demonstrated, there is considerable overlap between the point at which the classical world became aware of the Irish and Ireland’s exit from the Iron Age. A division, artificial though it may be, is useful between the earlier La Tène periods where classical influence was mostly by sea or indirectly through traded products, and the period when the empire of the Romans arrived within eyesight across the Irish Sea. Although there was never an extended Roman invasion, Roman Britain did manage to exert quite an influence upon the Celts of Ireland.

In the first centuries CE several classical authors left us their knowledge of Ireland’s continued presence. This helps fill some of the gap in archaeological evidence for exchange and trade during the “lull” in the Irish economy. Changing settlement patterns and what that tells us about changing sociopolitical strata in this same period will

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169 Freeman, 37.
170 Freeman, 38.
171 Freeman, 51.
be discussed below.

The writer Strabo drew on the accounts of travel given by previous authors and merchants for his *Geography*, written c. 19 CE. While he disparages both the work of his sources and Ireland itself, adding that these previous authors had “false ideas”, he declares that he has spoken with merchants and travelers to Ireland who have presented alternative views. 172 His citation of sources who had seen Ireland and Britain is our earliest reference to visitors to Ireland, and it is very likely they were merchants. 173 Strabo is also the first to use *Ierne*, “the most common and long-lasting name for Ireland, used until the end of the Roman empire,” “ultimately derived from the native Irish name either by direct contact with the Irish or through intermediaries such as the Gauls or British”. 174 Thus we have further proof of continuing contact with Ireland, likely of a mercantile nature.

Strabo was not entirely accurate, and leaves some telling details about Ireland for posterity. He felt Ireland was the northernmost land, dismissing Thule’s existence, 175 and grossly misplaced Ireland on his map of the world. 176 He reported that Ireland was longer than it is wide, but he reversed its orientation to fit his map, so he means the east-west width is the greater. 177 Freeman has suggested convincingly that Strabo quite willingly altered his data in order to fit his argumentative perception of the known inhabitable world. On a cultural note, Strabo charged the Irish with being not only gluttonous cannibals, but cannibals who considered it honorable to eat their dead fathers, and who

172 Freeman, 38-39; also Roller, xix.
173 Freeman, 39-40.
174 Freeman, 40.
175 Freeman, 46.
176 Roller, 80.
openly practiced incest as well as general promiscuity. He then admitted he had no direct or even indirect sources for these claims, but his prejudice was a common attitude for the classical period, in which the northernmost peoples were considered the most savage, being of the greatest distance from the Roman Empire.\textsuperscript{178}

A few decades later, Pomponius Mela, born near Gibraltar in southern Spain, wrote the first surviving Latin work, \textit{De chorographia}, c. 44 CE.\textsuperscript{179} He reported that the land and soil of Ireland, still so famous today, was so fertile the cattle would burst if not restrained from grazing.\textsuperscript{180} While he mistakenly believed Ireland to be roughly the same size as Britain,\textsuperscript{181} he was not nearly as negative as Strabo, although he still represented the classical prejudice towards Northerners: “The inhabitants of this island are unrefined, ignorant of all the virtues more than any other people, and totally lacking all sense of duty”.\textsuperscript{182} This view of Ireland would dominate nearly two thousand years, from the classical period until the twentieth century. Whether such prejudice helped, in part, to deter the Romans from invading such a worthless place may never be known.

Approximately three decades after Mela’s writings, Pliny the Elder (Gaius Plinius Secundus) compiled his \textit{Natural History}, c. 77 CE.\textsuperscript{183} What makes Pliny significant is that he was able to identify correctly many more islands lying between Britain and Ireland than any geographer before him, and Freeman rightly declares that this “surely reflects an

\begin{itemize}
  \item[\textsuperscript{178}] Freeman, 46.
  \item[\textsuperscript{179}] Freeman, 48.
  \item[\textsuperscript{180}] Freeman reports that this threat of bursting is something which owing to the “gases produced by overgrazing actually has a basis in fact, according to modern farmers.” Mela’s claim was later borrowed and reiterated by Gaius Iulius Solinus in his \textit{Collectanea rerum memorabilium}, c.200 CE. See Freeman, 49, 86-7.
  \item[\textsuperscript{181}] Freeman, 49.
  \item[\textsuperscript{182}] Quoted and translated by Freeman, 49.
  \item[\textsuperscript{183}] Freeman, 50.
\end{itemize}
increase in merchant traffic between Ireland and the Roman world at this time”.

Somewhat obscurely, there is a later-mentioned Philemon who provided “material on Ireland learned from merchants” and also information on the general amber trade of the northern area. Philemon was a merchant and geographer who wrote in the first century CE, but unfortunately all we know of his writing is what was later quoted by Ptolemy.

Also writing from the first century was Cornelius Tacitus, who wrote the *Agricola* c.98 CE. He gives scholars what is perhaps the most detailed information about the British Isles available from any of the classical sources. Tacitus reported that Britain possesses gold, silver, “other metals”, and pearls, which made it worth conquering to the Romans. Knowledge of Britain’s riches had increased in the classical world, and such public (or state) knowledge would surely have drawn merchants to the region, especially given the Roman government’s voracious appetite for precious metals. Tacitus also mentioned that the Brigantes were the most populous tribe in Britain. This fact is of note considering this is the same tribe which was later placed on Ptolemy’s map as living in Ireland. The current explanation is that this deviation represents a colony made up of the “refugee” group which left the Roman-style female burial at Stonyford, Co. Kilkenny.

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184 Freeman, 55.
185 Roller, 122, citing Ptolemy’s *Geography* 1.11.8; see also Freeman, 52.
186 However, Roller asserts that Tacitus borrowed from Pliny when talking about the British and the ocean. Roller, 123.
189 Tacitus, 68.
About Ireland proper, Tacitus reported that “its approaches and harbours have now become better known from merchants who trade there,” and that Agricola detained an Irish prince who had been expelled by a rebellion in the hopes of using him. This is key when considering the political unrest, dynastic upheaval, and resource and land scarcity currently underway in Ireland. Not merely had this prince been expelled from his region, presumably with his loyal retinue, but he was now a pawn for the Roman conquest, perhaps even willingly so. Tacitus noted that Agricola set up forces facing the Irish coast in order to intimidate potential raiders and pirates, and that the leader often mused on invading this promising isle for its resources, speculating it would take only one legion and a few auxiliaries before he would be known for having conquered the last stretches of the world. Furthermore, having improperly situated Ireland between Britain and Spain (as many had done before him), Agricola hoped to use Ireland as a link between the provinces of the empire to surround Britain with Roman armies. Examined in this light, Ireland becomes a key player in quelling the ever-present threat of British rebellion.

Ireland remained unconquered, as history well knows, although Freeman makes a convincing argument that had Agricola and his armies persisted, his battle-hardened troops could have taken Ireland with one legion, given the Celts’ legendary inability to unify against a common enemy. Instead, the Roman Empire began its long downward spiral, recalling troops (and funding) from the border lands to support its floundering interior.

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190 Tacitus, 75.
191 Tacitus, 75.
192 Tacitus, 75.
193 Tacitus, 74.
Aside from a distinct motive for continuing trade with Ireland, and a hint of political maneuvering, the *Agricola* gives scholars one more clue to the first century. The presence of an Irish prince in a Roman camp is striking evidence for bilingualism. Such bilingualism, if even moderately common among merchants, Roman camps, and travelers to the British Isles, would allow for communication, trade, transport, the exchange of ideas, cultural change, and political and economic negotiations. If the Irish royalty was itself able to speak Celtic, British, Gaulish, or Latin at this time, or entertain those in their retinues who served as translators, a much clearer mode of communication emerges for the influence of Britain and the continent on Ireland, and vice versa.

Early on, there is archaeological evidence the refugees from Britain came to Ireland to escape the Roman invasion. These first and second-century refugees brought with them burial customs and valuables: many Roman-style fibulae, a beaded torque bearing an as-yet undetermined Latin inscription, bronze discs, and other items of Romano-British origin have been recovered near Dublin. These artifacts could also indicate a possible commercial connection with the *Brigantes* tribe in central Britain. The site in question, at Stonyford, Co. Kilkenny, has been suggested to be a refugee camp, given the tribe was brutally crushed by Romans in 74 CE. On another site located on Lambay Island near Dublin, graves with Roman and Romano-British objects have been found: an iron mirror and four bronze brooches are imports, while a fifth brooch is an Irish copy of the Roman style. Lambay Island strongly appears to have been a settlement or port serving as a commercial intermediary between Ireland and the outside world.

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194 Freeman, 61; also Tacitus, 75.
195 Freeman, 2-4.
196 Edwards, 3-4; and Freeman, 3.
197 Laing, *Archaeology*, 150.
More evidence of contact and trade between the early Irish and Britain is sourced from the map of second-century geographer Claudius Ptolemaius of Alexandria. Ptolemy relied on merchants’ tales and travels for his sources and derived much of his information from Philemon, who had formed his impression of the island from traders in contact with Ireland before the Roman invasion of Britain. Ptolemy’s map places Ireland closer to its true location than Strabo had, and is fairly detailed, cataloguing sixteen tribes, ten “towns”, fifteen rivers, six capes, and nine islands for Ireland, many which have been matched to known Irish names. The Ulaidh capital of Emain Macha appears along with other crucial aristocratic centers.

A few words about translation are necessary here. Ptolemy used polis to indicate cities, towns, religious or ritual centers, and settlements. With Ptolemy and many other classical authors who wrote about contemporary foreign settlements, it is essential to keep in mind that they were adapting their language and linguistic terms to new and unfamiliar surroundings. Hence the frequent use of urbs or, here, polis to indicate not a city or town proper, but a nucleated monastic settlement, family estate, or ringfort cluster. Scholars who insist on using a literal translation of the Latin or Greek by the definitions we know today have missed the subtle nuances and flexibility required by the circumstances of a Latin or Greek traveler in a foreign land for which his language was ill-equipped and who lacked specific terms to describe what he saw. Thus with Ptolemy,

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198 Edwards, 4.
199 Freeman, 65.
200 See Freeman, 67-84, also Table 5 p.110; and also Breen and Forsythe, 39.
201 See Freeman, 68.
what he refers to as “towns” or “cities” are, given the archaeological evidence of this period, royal centers and nucleated settlements, but not towns or cities by his own or by contemporary definition.

Ptolemy’s map of Ireland is remarkably accurate on the northern, eastern, and southern sides of Ireland: the ones most accessed by merchants and travelers. However, of all the Irish tribal names and details he afforded the Romans, most are concentrated around the northeastern coast, precisely the area in contact most frequently with Roman Britain. Many places he identified on the eastern side of Ireland are in fact sites of promontory forts that have yielded evidence of Roman contacts, such as Samian ware and the first-century burials on Lambay Island.

Barry Raftery also uses Ptolemy’s rather curious placement of the British tribe Brigantes and European groups such as the Caucai (Kaukoi) and Menapii (Manapioi) in Ireland to suggest that these represent a refugee group and trading colonies/outposts,

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203 See below for more details on settlements in this time period. Ringforts were likely emerging in the second century CE, to quickly become the preferred defensive domestic site of Ireland for the next five hundred conflict-filled years.

respectively. For the former, he points out that the Roman burial found in Stonyford is near the river Nore and “in easy reach” of the Waterford Harbor.\textsuperscript{205} For the latter, Raftery uses place name analysis to link the Menapii to the promontory fort of Drumanagh in northern Co. Dublin, which has an excellent harbor on the Irish Sea.\textsuperscript{206} Freeman cautions that it might be an overstatement to interpret this data to imply the presence a colony, based on what is currently known, and we must consider that these names are a factor of poor translation at the time. He also asserts that the Cauci on Ptolemy’s map are not likely to be related to those in Germany, despite the common name.\textsuperscript{207}

Ultimately, we can derive from the writings of Ptolemy that merchant traffic was not merely visiting Ireland’s shores, but going inland and following the rivers marked on his map, including the Shannon.\textsuperscript{208} Additionally, Ptolemy is the first to give the name of Ireland as \textit{Iwernia}, which Freeman argues shows increasing contact with native Irish, who used the “w” in their own name for their island, \textit{*Iweriu}.\textsuperscript{209}

The classical world (and presumably Gaul and other, less literate parts of Europe) continued to learn more about Ireland, although slowly and in small pieces. A good explanation for this limited access has been suggested by A. Bowman, who describes how sailing seasons in the Mediterranean were limited and controlled by the Romans. Bowman cites the \textit{Codex Theodosius}, written c. 380 CE to African shippers, which permitted sailing only between April 13 and October 15. From November until April navigation was suspended. Bowman argues that this limited sailing season would restrict

\begin{footnotesize}
\begin{enumerate}
\item[205] Raftery, \textit{Pagan}, 207.
\item[207] See Freeman, 78-80.
\item[208] Freeman, 67.
\item[209] Freeman, 67.
\end{enumerate}
\end{footnotesize}
the number of trips a merchant could make per year, especially given the nature and speed of a trip to the northwest seas. Bowman calculates that one round trip from Turkey to southwest Britain, a route that we have clear evidence for being in use in the fourth century, would absorb the entire permissible sailing season. A limited number of trips would explain the small numbers of Mediterranean imports found in areas where we would expect higher amounts, given the desirability of materials such as tin or other valuable commodities.\textsuperscript{210} It would also explain why information about the British Isles arrived and was reported in trickles and drips over time rather than in exhaustive reports and extensive details. Bowman also argues that there was no direct sea trade, only indirect, with goods changing hands in ports along the way via three routes: 1) North Africa to Ireland and Britain, 2) Italy to France to Ireland and Britain; and 3) Spain to Ireland and Britain.\textsuperscript{211} From what evidence we have available, it is possible all three, perhaps in combination, were in use at any given time.\textsuperscript{212}

Toward the early Christian period, political tension in Ireland remained high, and Britain was the more prosperous of the two islands. Roman merchants visited “gateway communities” in Ireland,\textsuperscript{213} where one community served as a focal point for, and the only point by which, several smaller communities could be reached, thus controlling all imports and distribution. Two such examples are at Strangford Lough and at Dalkney Island, south of Dublin Bay.

\begin{thebibliography}{9}
  \bibitem{211} Bowman, 102.
  \bibitem{212} See also Hillgarth’s take on transmission via Spain in J. N. Hillgarth, \textit{Visigothic Spain, Byzantium and the Irish} (London: Variorum Reprints, 1985).
\end{thebibliography}
Classical influences through trade extend beyond simply objects to ideas and culture. Finds in Ireland include bronze skillets and ladles, some Roman in origin and some very skilled Irish copies. Round-back combs and zoomorphic combs found in this later Roman period resemble their classical precursors, as if they, like many other trends, took longer to reach the island by a few short centuries. While gold working continued as a valuable trade, there is almost no evidence of it from this period beyond a few tiny fragments of gold filigree wire, and archaeologist Nancy Edwards suggests that the metal was simply too precious to waste, and would be melted down and reforged if items broke or went out of fashion.\textsuperscript{214}

Also appearing in Ireland were coins of Roman origin and large caches of silver. One such site, Brug na Bóinne, a sacred mound at Newgrange, is Neolithic in origin, but has turned up Roman coins from emperors Domition (81-96 CE) to Arcadius (383-408 CE), and other objects of pilgrimage and offering. Whether these were valuables purchased from foreigners in order to obtain suitable offerings, or the gifts of Romano-British visitors, or deposited centuries after the fact by the Irish, we have no way of knowing. Edwards asserts that only twenty percent of Roman coins found in Ireland likely arrived there during antiquity. The rest are probably the result of later raiding and Viking depositions of hoarded metals, and the same can be said for Roman-style Samian ware.\textsuperscript{215}

By the fourth century the Irish were raiding Romanized Britain and hauling back booty of slaves, Roman artifacts, and Celtic-Roman hybrids. Our record of transactions grows stronger as literacy took root in Britain and complaints were duly lodged of

\textsuperscript{214} Edwards, 91.

\textsuperscript{215} Edwards, 1.
marauding Irish raiders. Ammianus Marcellinus, Roman historian and traveler, wrote in his *History* (c. 392 CE) that in 360 CE the Irish, Picts, and Saxons raided Britain in a “large-scale attack against the Roman Britains”.

Charles-Edwards suggests this raiding was the result of a treaty broken earlier that year, and that previously, the Irish had invested heavily in ship building for mercantile purposes. He argues that the treaty in question likely concerned British port access. Later writings by Pacatus and Claudius Claudianus suggest that the Romans “possibly, but not necessarily” engaged in naval battle against the Irish in the 367 campaign to restore order in Britain.

That the Irish had boats is certain. There were the native, skin-covered coracles, which despite their flimsy-sounding nature were sturdy enough to take on the open ocean as well as riverine travel. These had been in use for centuries, and merited a mention in the third-century writings of Solinus. By the early Christian period, a northern-European style of plank boats with a characteristic overlapping hull had evolved within Ireland. These hardier boats would have been excellent for handling rough seas.

Northern Ireland did not have the only active ports. Gallic wine merchants were dealing a strong business with southern Ireland by this period, so much so that maritime trade eventually became considered a hallmark of a “good leader” in Ireland. Later Irish law tracts claim a long tradition of provisions for foreigners, such as the right to outside legal counsel.

Still, an extensive, organized trade was hampered by lack of money and

216 Freeman, 96.


218 Freeman, 104.

219 Breen and Forsythe, 39.

220 Breen and Forsythe, 37.

urban market centers, and the elite class controlled trade and consumed most of the luxuries.

Some of these imported luxuries, it turns out, were animals. While dogs had been in Ireland earlier, specialized breeds were now imported through Britain, which had in turn gotten its various canine breeds from the continent. In particular, by at least the fifth century aristocratic women were associated with small, pampered lapdogs. The Irish had also been exporting dogs. Quintus Aurelius Symmachus, a Roman senator, noted in a letter to his friend Flavianus c.393 CE that seven hunting dogs had been brought to Rome from the British Isles. This lends more credence to a northern trade in dogs that dates back to Strabo’s first-century accounts.\textsuperscript{222} Domesticated fowl and felines were also brought into Ireland and put into use, the latter presumably bred for their fur as well as companionship.\textsuperscript{223}

**The Early Christian Period: Evidence for Exchange**

The introduction of Christianity in Ireland in the fifth century added a new dimension to continuing contacts with the classical world. After one examines the archaeological evidence and distribution patterns for this period, it appears that in pre-Christian Ireland the elite class deliberately restricted material access, usage, imported or luxury goods, and native craftsmanship in order to reinforce their own status.\textsuperscript{224} In light of this precedent, it is not unlikely that Irish elites may have accepted Christianity as part of a package deal which included access to new technology and trade goods, ideological

\textsuperscript{222} Freeman, 102-3.


\textsuperscript{224} Mytum, 49, 229.
support to ensure that they remained in power if the populace had already converted, and to create new external contacts for the import of exotic goods that would reinforce their status and power.\footnote{Mytum, 45. Whether this conversion was true or merely superficial is outside our discussion. However, it is well known that the pagan practices of the Irish continued alongside Christian beliefs far into the modern period.}

The Irish had settlements in western Scotland, Wales, and southwestern Britain by the early Christian period, and this spread, combined with patterns of exchange and travel, helped bring about continued material exchange and cultural similarity. Ogham script developed in fifth-century Ireland (or possibly western Britain) from the Roman alphabet. Scholar Ken Dark suggests the development of ogham was influenced by Roman writings and possibly the current dialect of Latin being spoken at that time.\footnote{Ken Dark, \textit{Britain and the End of the Roman Empire} (Stroud, Gloucestershire: Tempus Publishing Ltd., 2000), 40.} Additionally, a new tradition of burial arrived in Ireland from Romanized Britain between the fourth and fifth centuries. Bodies were now inhumed on their backs instead of cremated, buried without grave goods, and often placed at the borders of land to “guard” their territory or that of their clan. These burials were sometimes marked with Irish ogham stones in a Roman tradition of marking the dead.\footnote{Charles-Edwards, \textit{Early Christian Ireland}, 175.}

Outside of Ireland, the island was still a topic of conversation and mercantilism. Orosius, a church official from northwest Spain, wrote his \textit{Histories Against the Pagans} (\textit{Historiae adversum paganos}) c.417 CE by drawing on previous geographers, but also merchants and travelers from his region of Spain, which had continued contact with Ireland.\footnote{Freeman, 111-113; see also Hillgarth.} Importantly, Orosius also recorded that by his time, the Irish had settled the
Isle of Man, which lies halfway between Ireland and Britain and was a logical choice for staging raids.\textsuperscript{229} We have then a contemporary notation of the Irish tribes who spread over the islands and the establishment of an antagonistic border, as well as evidence that parts of Spain were still viable and common stopping points for ships bound north, and those returning south.

The fifth century clearly shows the same routes that originated in early prehistory still in strong use. From the Mediterranean, ships passed through the “Pillars of Hercules” to sail up the Iberian and Gallic coasts and dock in Ireland. Other wares brought across the continent were traded through Britain to Ireland, and vice versa. One should note that both Spain and Britain have the same magnitude of similar Mediterranean wares, clearly indicating trade was occurring at those sites, as normally the number of vessels diminishes with increased distance from their source.\textsuperscript{230}

Imported pottery can be dated and its origins traced, and the results attest to explicit trade with the later Roman Empire and beyond. Rotund amphorae known as Bi pottery and characterized by the band of combed ornamentation on their shoulders are from the Argolid region of Greece,\textsuperscript{231} while the more cylindrical Bii pottery with their lighter coloring and ribbed body are from the northeastern Mediterranean.\textsuperscript{232} Biv ware from the Sardis area of West Turkey has been found, and also Phocaean Red Slipware dating to between 475-550 CE has been found in Britain.\textsuperscript{233}

Large cylindrical amphorae known as Bv wares have also been recovered. These

\textsuperscript{229} Freeman, 113.
\textsuperscript{230} Ewan Campbell, “The archaeological evidence”, 86.
\textsuperscript{231} Ewan Campbell, “The archaeological evidence”, 84.
\textsuperscript{232} “Asia Minor”; Ewan Campbell, “The archaeological evidence”, 84.
\textsuperscript{233} Ewan Campbell, “The archaeological evidence”, 85.
held olive oil or fish products, and originated from the Roman province of Byzacena (now Tunisia). Ceramic bowls (A ware) are found from Phocea (in West Turkey), and were probably shipped with the amphorae. There are also ceramics (A ware) from Carthage, and these were likely shipped with Bv ware. The four others, the Bi, Bii, Biv, and Red Slipware, were often packaged together in Mediterranean imports.

E ware is another class of cruder, household pottery found in Ireland from northern or western Gaul. This particular class of pottery has sparked debate about its function, source and exchange patterns, leading to various assertions that it was exchanged purely for functional use as cookware, not its contents, or, conversely, that E ware held commodities and was traded explicitly for its contents. The latter claim has more support archaeologically. Tests on pottery samples have revealed them to hold red-purple dyes, and later Irish texts suggest contents of honey, spices, exotic nuts, and sweetmeats. We know that madder was exported from France during the early Merovingian period, and this suggests that E-ware came from the Saintonge area of Aquitaine, or that trade was connected with the Loire estuary. Finds of E ware are concentrated in northern Ireland and Scotland, leading to speculation, based upon its

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234 Edwards, 69-70.
235 Ewan Campbell, "The archaeological evidence", 85.
236 Edwards, 69-70.
238 Ewan Campbell, “The archaeological evidence”, 92.
239 Ewan Campbell, “The archaeological evidence”, 92. Additionally, by 800 CE coriander and dill seeds were found with E-ware in Scotland, the seeds being from Aquitaine.
240 Ewan Campbell, “The archaeological evidence”, 93.
241 Comber, 56.

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distribution, that E ware was under an Irish trade monopoly, perhaps linked to monasteries, and limited to the later half the sixth century CE. Perhaps the most viable suggestion is that once E ware was emptied of its contents, it may have continued to have been passed along as rewards or to show personal favor; thus serving to convey one’s association with elites, proof of status, and trade contacts. Its northern distribution may reflect repeated local exchanges by elites determined to demonstrate their own power and sphere of influence.

Given the evidence, there is every reason to believe Irish trade remained strong as Gallic merchants rose in strength and trade centers shifted north of the Mediterranean Sea with the collapse of the Roman Empire. It was only when the Mediterranean was no longer a “Roman lake” that Mediterranean goods again decreased their flow into Ireland, being supplemented by Germanic, Gallic, and Scandinavian trade. Or, if they did not decrease significantly, their numbers were simply overwhelmed by the increased import of goods from closer regions.

In the sixth century, tin was still bring produced in Cornwall, which remained nearly the sole area of production at that time, and thus drew southern merchants. There was also lead in Britain, a mineral rare in the Mediterranean, which also would have attracted commerce. The continued connection between Anglo-Saxon Britain and Ireland is evidenced in artistic motifs, showing a transmission of ideas and skills, not merely objects.

Gallic trade with Ireland in the sixth century has been a point of contention among

243 Bowman, 103.
244 Mytum, 266-7.
246 Comber, 32.
scholars. We know there was trade from archaeological record, and written sources. For example, the port of Nantes is mentioned as heavy with Irish traffic in Adomnán’s *Vita Columbae*, which dates to c.690 and is written about sixth-century Ireland.\(^{247}\) It has been suggested that the sixth-century pattern of commerce between Gaul and Ireland was heavily influenced by monastic contacts with Gaul “through the familia of Columbanus”, and that D ware pottery from Bordeaux, Saintonge, and Touraine links west Gaul to the Irish Sea.\(^{248}\) However, the previous assumption that a large wine trade existed between Ireland and Gaul, and was driven by Church demands, has been attacked, although not abandoned entirely. J.M. Wooding argues that the sources mentioning the wine imports (the Ulster cycle, law tracts, later saints’ lives) are actually speaking of eighth-twelfth century trade, not of any earlier than the sixth century. He also asserts that there was no trade specifically for wine alone, but does not give evidence.\(^{249}\) Wooding is correct in discarding the Ulster Cycle as a record of the early Christian Ireland period, but the later saints’ lives and law tracts, in particular, still have value when it is remembered that they were written describing a way of life much more recent (sometimes within the same century) than the events described in the Ulster Cycle (c.200 BCE - 200 CE; possibly earlier).

If we combine all the evidence given, a clear picture of an active trade in the Irish and North seas emerges, with exports of corn or wheat, cattle, gold, silver, iron, skins, slaves, and dogs being traded for copper, ivory bracelets and necklaces, red amber beads, glass vessels, “trumpery wares”, and tin.\(^{250}\) The writings of Tacitus recount the ease at

\(^{247}\) Comber, 56; see also Dark, Britain, 42.

\(^{248}\) Wooding, “Cargoes”, 78.

\(^{249}\) Wooding “Cargoes”, 69-71.

which merchants from foreign lands passed in and out of the frontier, and also give us solid evidence of individuals bilingual in the native language(s) and Latin, which would have been necessary to sustain trade.\textsuperscript{251} With the subsequent decline of Mediterranean trade and the rise of Gallic and northern commerce and travel, we merely see a shift in mercantile power as the economy of the Roman empire collapsed, and barbarians brought the great power of southern Europe to its knees. By the seventh century CE, Irish trade of clothes, shoes, salt, honey, wine, hides, and dyes is evident, but this trade was centered on the north.\textsuperscript{252}

**The Iron Age & Roman Period: Settlement and Land Use**

By the onset of the Iron Age, Ireland faced climactic deterioration, famine, and fear, evidenced in the hoarding of valuables as previously discussed. Soon, there were also difficulties in farming, despite the fact that extensive field systems make their first appearance on the land.\textsuperscript{253} Human activity “collapsed” between 300 BCE - 300 CE, and hazel and elm growth surged as farmland was reclaimed by forest growth. This widespread “Iron Age lull” began as early as 800 BCE in Louth and continued as late as 590 CE in Kerry.\textsuperscript{254} An increase in bog spread and soil depletion contributed to land scarcity, a “massive regression in settlement”\textsuperscript{255} and the resulting political turbulence.

\textsuperscript{251} Freeman, 11; see also Tacitus, 75.

\textsuperscript{252} Wooding, “Cargoes”, 72-3.

\textsuperscript{253} Aalen, “Perspectives”, 365. After 250 CE, there is evidence for soil erosion indicating increased land clearance, which would allude to an increase in farming agriculture of wheat, barley, oats, and limited rye crops. See also Matthew Stout, *The Irish Ringfort* (Dublin: Four Courts Press, 1997), 46.

\textsuperscript{254} Stout, *Irish Ringfort*, 40.

\textsuperscript{255} Aalen “Perspectives”, 365.
Finds of weapons and defended hillforts are all evidence of territorial battles.\textsuperscript{256}

Owing to these environmental conditions and bog spread, Matthew Stout calculates that one-third of all of Ireland was uninhabitable, and a further fifteen percent of the island had conditions which would make farming difficult and inhibit productivity.\textsuperscript{257} With nearly half of Ireland unable to sustain its existing populations, tribes began to migrate within the island, leading to warfare and dynastic turnover on a scale perhaps never seen before, but this time witnessed by classical authors, early Christian writers, and travelers who left accounts of unrest. Whole branches of clans were expelled or voluntarily left Ireland for neighboring islands, Britain, Scotland, Wales, and possibly Gaul.

Settlement patterns did not change drastically during the Iron Age until around the third century CE. Before then, houses and settlement patterns were much the same as they had been in the Bronze Age, a reflection of the high level of cultural continuity between the Bronze and Iron ages. What is of notice is the increasing and changing importance of the major royal sites in Ireland, such as Tara, future seat of Ireland’s high kings in the early medieval period; Emain Macha, the ancient capital of Ulster; and Dún Ailinne, an impressive fort.\textsuperscript{258}

Tara, in Co. Meath, was the “symbolic and political capital of pre-Christian Ireland”\textsuperscript{259} with no less than five roads radiating out from it. The site is a complex of earthworks, and archaeologist Barry Raftery suggests a multi-period construction with

\begin{itemize}
  \item Aalen, Whelan, and Stout, \textit{Atlas}, 40-41.
  \item Stout, \textit{Irish Ringfort}, 39.
  \item There are four or five of them, depending on which scholar is consulted. Charles-Edwards lists Cruachain, Tara, Emain Macha, Dún Ailinne, and Cashel as the major five ritual centers of the Iron and Early Christian periods. Charles-Edwards, \textit{Early Christian Ireland}, 146.
  \item Aalen, Whelan, and Stout, \textit{Atlas}, 207.
\end{itemize}
both ritual and domestic use. In the first phase, Tara was a burial mound, followed by a second phase of timber enclosures, which date to the later Iron Age. In its third incarnation, both inhumation and cremation burials were added. In its final, fourth form, Tara became a large ringfort in which Roman pottery, glass, and other imports from the first few centuries CE have been recovered. The first nonferrous workshop of Iron Age Ireland was found at Ráith na Rig on Tara. The findings consisted of a large hearth, workshop remains, crucibles, bronze waste, and finished objects, and dating to a range from 200 BCE-16 CE.

We can interpret evidence from Tara to indicate an important ritual center at the meeting place of roads (themselves enormous construction projects); a home of ancient burials, but only of select individuals. This limited use suggests burials of elites, perhaps the bravest of warriors or wealthiest of men or future heirs of the most powerful. Perhaps these individuals were sacrificed to unnamed gods as part of ancient tradition. We cannot know for certain. In its final form, though, Tara was a defended ringfort with ancient and elite standing, clear ties to international trade, and a workshop for metalsmiths of gold, silver, and bronze. Its occupation by and association with the socially elite is attested to by Tara’s emergence in the writings of the early Christian period as the seat of high kings, and the prominence it played in early medieval Irish history.

Emain Macha, in southern Armagh, is also known as Navan Fort, and was the ancient capital of Ulster and the Ulaidh. It was a focal point for ritual activity and nearby deposition, which may be linked to hoarding-type religious practices dating back to the

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261 Comber, 5.
Bronze Age. Emain Macha had a long use, showing occupation from the late Bronze Age until the first century BCE. The entire complex is 4.9 hectares in area and there are two sites (A and B), with four phases of building at site B. Site B is unique because it shows occupation back to the Neolithic, and unbroken occupation from the eighth to the first century BCE. Phase four of site B is perhaps the most interesting, as all construction can be clearly dated to 95/94 BCE using dendrochronology. In fact, all the trees cut down for the 275 or more posts were cut c.100 BCE. It has been suggested that a large, roofed, circular temple was erected that year, purely for ritual use. Phase four is the only period of Emain Macha which lacks evidence of domestic habitation. It was at this site the Barbary ape skull was found, dated by association to 390-20 BCE. The presence of such an exotic item speaks to the importance of this royal site.

Finally, there is Dún Ailinne in Knockaulin, Kildare. Dún Ailinne was the ancient “capital” of Leinster, with an estimated range of use from 390 BCE - 320 CE. It was a center for ritual purposes, for there is no evidence for continuous settlement. La Tène-style metalwork has been found at the site, although there is currently no evidence for what might be termed “proto-urban” function. The site is thirteen hectares enclosed,

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265 Raftery *Pagan*, 75.

266 O’Kelly, *Early Ireland*, 321; Cooney, 28. This is the same time as the Dorsey earthwork, see below.

267 Raftery *Pagan*, 75.

268 Raftery *Pagan*, 71.

269 Raftery *Pagan*, 74.


271 Laing and Laing, *Celtic Britain*, 144.
with no hearth and no sign of domestic use. It was constructed in three phases of timber structures, with overlapping trenches: in the first phase, there was one palisade; in the second, three palisades; and in the third, two palisades. There is a noticeable jump in the need for defense or display of status or both between the first and second phase of construction, which fits given Ireland’s increasingly violent circumstances over the span of Dún Ailinne’s usage.

Large earthworks were also built contemporary with Iron Age royal sites, and have been the subject of much speculation and fascination since their true function was lost to common memory, especially since they appear to correspond to ancient (and legendary) provincial borders. Given that the royal sites indicate the development of regional alliances, not merely local dues, it makes sense that in an increasingly violent period powerful individuals would be now able to command labor on a far larger scale than previously possible. In a society of clients and patrons, serfs, freemen and elites, one must recall that labor and construction were counted among the dues to be paid to a lord or king. Therefore, a regional over-king, or king of kings, or perhaps a council of allied elites could easily demand labor dues from a large range of individuals to produce a sizable labor force. Three of these impressive earthworks are the Black Pigs Dyke, the Dorsey earthworks, and the Dún of Drumsna.

The Black Pigs Dyke in Co. Monaghan stretches east-west. If the fragments which constitute the dyke are connected, they appear to separate the ancient province of Ulster from the rest of Ireland, which would have fascinating implications, especially given the accepted historical basis for the Ulster Cycle and other famous cattle raids.

272 Raftery, Pagan, 71.
273 Raftery, Pagan, 72.
However, there is no evidence that these parts were ever connected, nor do we know if all the fragments were constructed in the same period.\textsuperscript{274} The Black Pigs Dyke dates to c.490-70 BCE,\textsuperscript{275} and with this earthwork structure as with others, timber palisades on top were an important part.\textsuperscript{276}

The Dorsey earthworks in south Armagh is one of two places where earthworks combine with natural boundaries (lakes, rivers) to result in a huge enclosure of land, the purpose of which has yet to be determined. This impressive structure is still six meters tall after centuries of erosion, and posts attest to a palisade which continued through wet areas.\textsuperscript{277} The Dorsey earthworks date from 400 BCE - 80 CE, and the timber in the palisade dates to 95 BCE, the exact year Emain Macha’s central post was cut and anchored in place.\textsuperscript{278} We know the building projects of the palisade and the wooden structure in phase four of Site B construction at Emain Macha were contemporary. One must wonder what exact event(s) prompted the elite of Ulster to demand the construction of both a defensive palisade and a central temple or meeting house simultaneously. In the least, we have an idea of the large-scale labor force the elites were able to summon at will.

The second earthwork structure that links to natural boundaries is the Dún of Drumsna on the Roscommon side of the Shannon river. The enclosure is 100 hectares, with a rampart thirty meters wide by, six meters tall in current times.\textsuperscript{279} This earthwork

\textsuperscript{274} Raftery, \textit{Pagan}, 86.
\textsuperscript{276} Raftery, \textit{Pagan}, 85.
\textsuperscript{277} Raftery, \textit{Pagan}, 86.
\textsuperscript{278} Raftery, \textit{Pagan}, 97; Cooney, 28.
\textsuperscript{279} Raftery, \textit{Pagan}, 86.
dates to 350-30 BCE, contemporary with the others. Gabriel Cooney suggests that the Dún of Drumsna was part of a system to control access to the Shannon.

One is left with the profound sense that early Iron Age Ireland was a rapidly changing landscape, rapidly by our backward-looking gaze. In the midst of spreading bogs, environmental downturn, burgeoning food shortages, land scarcity, and population movements, massive, defensive earthworks were constructed around what appears to be ancient regions of Ireland. Evidence of a social hierarchy complex enough to demand such regional loyalty rings clear, and as we have seen, there is evidence enough for trade and exchange of luxury items to support a ruling class. Barry Raftery suggests that large earthworks such as these were constructed to serve as impediments to cattle raiding and/or to regulate and control movement along routeways. Cooney adds that earthwork construction reflects an increasing need for territorial definition and status display, and stresses this emergence of what he terms “regional politics”.

Another kind of large-scale building project seen in Iron Age Ireland is that of roads and routeways. Contrary to old belief, Ireland had roads, and they date to long before the Romans could have inspired their creation. In their earliest forms, brushwood tracks were used as footpaths, but in this early period sturdier roads were constructed, even over bogs, and permitted increased travel and communication. Irish horses at this time were roughly the size of a Shetland pony and although we do not know if they

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281 Cooney, 28.
283 Cooney, 28.
were ridden or pulled carts, two-wheeled carts did exist, and oxen had been used since the Neolithic period for labor.  

An intriguing example of the roads constructed in Iron Age period is the Corlea Road. In 148 BCE at the Corlea bog in Co. Longford, a road of split oak planks was built. This section was connected to another trackway, the planks for which were cut in 156 +/- 9 BCE, for a total length of two kilometers. An enormous undertaking, Corlea required 200-300 oak trees, as many or more birches, more than 5000 pegs, and practiced workers able to adapt the ongoing construction to the changing surfaces of the land. The planks are all chopped, not sawed, are 3-4 meters long, and as much as twenty centimeters thick and 65 cm wide. Raftery noted in excavation that it required six men to lift each plank. Corlea was either left incomplete or deliberately destroyed by fire, or possibly both. After a brief period the road was “swallowed” by spreading peat bog in the middle of the second century BCE as the climate grew more wet. Raftery has suggested that the Corlea road was part of a pilgrim’s route between Crúachain, the royal center of Connacht, and Uisneach, a cult center for the festival of Beltaine in Co. Westmeath. This is speculation, but it cannot be disproven, either. It is not unfeasible that Corlea Road was part of a larger pilgrim’s route or a system to link major centers of Ireland for increased ease of travel and transportation of goods.

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The Early Christian Period: Settlement and Land Use

The landscape of Ireland changed again rather dramatically in the early Christian period. Pollen records show an increase in weeds and grasses associated with pasturing and arable farming.\textsuperscript{291} While the increase in food production and drier environmental conditions might suggest relief from the stress of resource scarcity for the people of Ireland, if this occurred, it was only a brief respite. The early Irish did as generally all agricultural societies do when technology allows for improved land usage and more intensive farming: with better nutrition and the corresponding increase in fertility, the population grew, and steadily increased from the fourth century onward into the medieval period.\textsuperscript{292}

There is the suggestion, using evidence from the ages of animals slaughtered at excavated sites, that dairying was introduced to the Irish in the early Christian period, aiding in the population surge.\textsuperscript{293} The coulter plough was introduced around 500 CE, in a period of warm and dry weather.\textsuperscript{294} Approximately one hundred years later, the mouldboard plough was introduced, and it is possible that a land management system involving a fallow period was widely implemented.\textsuperscript{295}

These agricultural developments had an important impact on society and culture. With increased productivity and an increased population, a surplus of labor could be diverted into the manufacture of luxury goods such as brooches, glasswork, and precious metalworking. Items produced, grown, or manufactured, could be traded for bronze,

\textsuperscript{291} Aalen, Whelan, and Stout, \textit{Atlas}, 44.

\textsuperscript{292} Richter, \textit{Seventh Century}, 22.

\textsuperscript{293} Stout, \textit{Irish Ringfort}, 36.

\textsuperscript{294} Stout, \textit{Irish Ringfort}, 43.

\textsuperscript{295} Stout, \textit{Irish Ringfort}, 43.
copper, dyes, beads, and other luxury goods, but in Ireland as in other Celtic societies, excess food and wealth was also used heavily for entertainment. Drinking, feasting, and patronage were important ways of marking a king or chieftain’s own influence and wealth over his subjects and exercising clientship, and this is reflected in grave finds of drinking vessels which clearly demonstrate their use to determine social status.\textsuperscript{296} There is also evidence that Ireland was exporting textiles (linen from flax, and leather goods) in exchange for wine. This inter-elite competition for new status symbols would have been fierce as long as trade supplied new ideas, new items, and new decorations for them.\textsuperscript{297}

This is not to say that Ireland settled into a peaceful existence and second “Golden Age”. On the contrary, the fourth-sixth centuries were a period of continued political upheaval as newer dynasties came into power and pushed older, more ancient lineages out - out of power, and sometimes off the island entirely. One example of internal migration is the movement of the Uí Néill from Connacht north into Ulster and east into Meath. There were also large displacements to Wales and western Britain.\textsuperscript{298} The Dyfed dynasty in southwest Wales had its origins in Irish royalty who left Ireland because they were expelled in dynastic upheaval.\textsuperscript{299} Ogham script commemorating burials of (likely) high-status individuals with Irish names in western Britain attest to this displacement.\textsuperscript{300}

Tension, warfare, and the increasingly complex social hierarchy is reflected in the

\textsuperscript{296} Arnold, 104-112.

\textsuperscript{297} Arnold, 104-112.

\textsuperscript{298} Comber, 6. See also Ó Cróinín, Early Medieval Ireland, 42-62.

\textsuperscript{299} James Campbell, ed., The Anglo-Saxons (New York: Penguin, 1991), 20. This generally accepted conclusion is disputed by Ken Dark, who suggests instead that the Dyfed was actually a separate dynasty that “actively cultivated an Irish identity” out of proximity, linguistic affinities, or political or economic reasons. See Dark, Britain, 188-190.

\textsuperscript{300} Dark, Britain, 40.
main forms of settlement in this period: ringforts and crannogs, both of which are
defensive in nature and labor-intensive to construct. Of these two, ringforts are primary
and have warranted the most attention and yielded the most information. In the period
between the fifth and tenth centuries, over 45,000 ringforts (raths or ráiths) were
constructed across Ireland. They are without a doubt the “most numerous domestic
archaeological monument” on the island.

Ringforts are circular bank and ditch enclosures averaging 30 meters in diameter. If
they have stone banks, they are called cashels. While some are merely farm perimeters
for enclosed pastures, most were inhabited. Noted for their defensive visibility, the
average rath can oversee 100 acres. Matthew Stout, noted ringfort expert, has
developed four “rules” from his studies of raths. First, ringforts are not found where
land cannot support farming. Secondly, as part of their defensive nature, they tend to be
located on hilly or sloping terrain for increased visuality; hence the later incidence of
Norman conquerers building castles on some of them. Ringforts were able to maintain
visual contact with up to seventeen neighbors at a time, which allowed for warning of
impending attacks and the chance to take safe refuge with nearby neighbors. Third,
ringforts tend to be located in areas of good quality soils, which explains their frequent
overlap with modern farms and villages. Finally, those on less suitable soils were

301 Aalen, Whelan, and Stout, Atlas, 44.
302 Stout, Irish Ringfort, 11.
303 Aalen, Whelan, and Stout, Atlas, 44. There is an excellent map of ringforts on page 46; also throughout Stout (1997).
304 Richter, Seventh Century, 20.
305 Stout, Irish Ringfort, 106-7.
primarily used as enclosures for livestock to graze, not for habitation or farming.

Ringforts often appear in groups, and Stout suggests that this distribution is partially the result of the expansion of agricultural clearance and settlement into forested areas.\textsuperscript{308} He also questions whether the settlement pattern of early medieval Ireland may have something to do with political sanctions or prohibitions against settlement or agriculture in some areas.\textsuperscript{309} Unfortunately for the historian, there are no records of early commands or decrees, or religious taboos, for that matter, and this intriguing question will likely never be answered.

In addition to practicing agriculture, the average ringfort farmer kept his own smithing center for making and repairing equipment.\textsuperscript{310} It appears that iron-working in early Christian Ireland was localized with individuals making their own tools, as no factory-like areas of extensive production have been discovered. It is highly probable that blacksmiths, a respected class of artisans in Celtic society, made the professional tools of warfare.\textsuperscript{311} Smaller settlements traded for ore and tools, while larger centers of tribal,

\textsuperscript{308} Stout, \textit{Irish Ringfort}, 107.

\textsuperscript{309} Stout, \textit{Irish Ringfort}, 109.

\textsuperscript{310} Comber, 45.

\textsuperscript{311} Edwards, 86.
royal, or regional significance kept groups of smiths for repairs and the creation of weaponry and/or items of personal adornment and prestige. Evidence for nonferrous working in these ringforts consists of crucibles and molds, scrap, ore, slag, furnaces, and tools. Most of the non-utilitarian metal (bronze, silver and gold) would have been precious and reused.\(^{312}\) While it has previously been suggested that blacksmiths and goldsmiths were roving artisans, depending on patronage to support their expensive work,\(^{313}\) no real evidence has been found to support this claim on a large scale, and the practical matter of a smith carrying around all his (quite heavy) necessary equipment seems prohibitive.

Ringforts are also themselves evidence of the increasing stratification in Ireland, and the new ways the elites found to display their status and assert themselves in a very visual, concrete way. The different number of defensive banks which surround them, from one to three, demonstrate a “consistent and widespread settlement hierarchy which must mirror a similar social stratification,”\(^{314}\) and show “obvious ranking of individual sites in both economic and political terms.”\(^{315}\) The pattern is clear: the larger the site and/or the more banks and ditches surrounding it, the wealthier and more powerful the occupant.

Later law tracts, which represent ancient traditions in Ireland,\(^{316}\) give a measure of

\(^{312}\) Comber, 45.

\(^{313}\) Edwards, 86. This is also a stance of Harold Mytum. For opposition to the idea of traveling smiths, see Comber, 62; and note that Fergus Kelly’s study of the law reveals that by the early medieval period, craftsmen in Ireland had a fairly high status in and unto themselves, and could be independent of patronage. Discussed by Bernard Wailes in Webster, 354.


\(^{315}\) Comber, 45. See Tables 4 & 5 (pages 57-58) for a summary of the correlation between ringfort size and wealth, and evidence for economic activity.

42.56 m (equivalent) as the dimension for the residence of a tribal king, and this is found to be true in high-status sites excavated today. Importantly, Stout notes that the actual living space in a ringfort is often less than 60% of its total size, and that “increasing a site’s defences without a corresponding increase in its functional area demonstrates either a greater need for defence or an effort to display the status of the occupant.” Quite literally, adding rings of banks, ditches, and palisades without increasing living space merely makes an elite home more defensive or more rich-looking, demonstrating the labor force under the command of the occupant and the perceived power of occupying an impressively defended space.

Stout also suggests that the clusters of ringforts are themselves microcosms of the larger social hierarchy, with the highest status and lowest status (and smallest) ringforts grouped together, representing a lord or king and his dependents or serfs. The mid-range, mid-size ringforts of his clients surrounded this nucleus. In addition to the landowner-client relationship, a “defense in depth” theory has been suggested after examining the landscape. By this design, the lesser clients’ ringforts on the perimeter of the nucleated settlement also served as a buffer zone against attacks, while the highest-status family remained secure in the most heavily defended, and wealthiest ringfort located in the center.

Elites under duress were the primary occupants of the other major form of settlement that emerged in the early Christian/Medieval period. Crannogs are “defended settlements located on an artificially built lake edge, platform, or on a modified natural

317 Stout, Irish Ringfort, 16.
318 Stout, Irish Ringfort, 19.
319 Stout, Irish Ringfort, 108.
320 Aalen, Whelan, and Stout, Atlas, 47.
They were very labor intensive to construct, requiring bases built of timber, brushwood, stone, and animal bones, with piling driven deep around edges and wood palisades constructed around the top. Many show evidence of nonferrous metalwork, or finds of luxury items, indicating wealth and a clear occupation by high-status individuals. There were two phases of construction, the first from 424-648 CE and the second between 722-926 CE. It has been suggested that the crannogs became retreats for royals under attack from fellow elites who were asserting their own military power and transforming their families into the “over-kings” and large dynastic groups known to exist by the seventh century and beyond. Unfortunately, because of their water-logged nature, crannogs are extremely difficult and expensive to excavate, and remain underserved in the archaeological record of Ireland.

Monasteries and the Development of Proto-Urban Centers

The introduction of Christianity to Ireland brought about one other change which significantly changed the landscape: the Church, or rather, churches and monasteries which began to crop up alongside existing wealthy secular ringforts, ritual centers, meeting points, crossroads, trading centers, and other key locations, and rapidly became what may be termed “proto-urban” centers. These early Christian churches were often enclosed sites, much like ringforts and perhaps modeled from them for the same defensive purposes. Many early churches or monasteries developed in low-lying areas near running water to operate their grain mills. Naturally, in an agricultural society, this necessity made

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321 Comber, 45.
322 Comber, 45.
them a community focal point, and they frequently became trade and market centers
because of this and of their proximity to river transportation and merchants.\textsuperscript{324} Many
monastic enclosures also show evidence for being nonferrous centers of metalworking,\textsuperscript{325}
suggesting the wealthier monasteries kept their own skilled smiths on staff to provide the
church’s decor and other decorative or ritual items, as well as gifts and tribute. Leo Swan
suggests settlement clusters may have formed around the enclosed ecclesiastical burial
sites or cemeteries as a carry-over from earlier beliefs, and that these enclosed sites
provided focal points for worship and burial.\textsuperscript{326}

As early as the seventh century large battles and disputes occurred over the
control of important monasteries by Irish “feudatories”,\textsuperscript{327} and there were strong signs
that monasteries were developing into centers of nucleated settlement.\textsuperscript{328} Written sources
such as the \textit{Life of Brigit} by Cogitosus give us a glimpse of the saint’s environment:

“Who can express in words the exceeding beauty of this church and
the countless wonders of that monastic city we are speaking of, if one may
call it a city since it is not encircled by any surrounding wall. And yet,
since numberless people assemble within it and since a city gets its name
from the fact that many people congregate there, it is a vast and
metropolitan city. In its suburbs, which saint Brigit had marked out by a
definite boundary, no human foe or enemy attack is feared; on the
contrary, together with all its outlying suburbs it is the safest city of
refuge in the whole land of the Irish for all fugitives, and the treasures of

\textsuperscript{324} Stout, \textit{Irish Ringfort}, 128-9; see also Stout, “Early Christian Ireland” in \textit{A History of Settlement}, Terry
Barry, ed., 85.

\textsuperscript{325} Comber, 45.

\textsuperscript{326} Leo Swan, “Enclosed Ecclesiastical Sites and their Relevance to Settlement Patterns of the First
Millennium A.D.” in \textit{Landscape Archaeology in Ireland}, Terence Reeves-Smyth and Fred Hamond, eds.,

\textsuperscript{327} Conleth Manning, \textit{Early Irish Monasteries} (Dublin: Country House, 1995), 13.

\textsuperscript{328} Richter, \textit{Seventh Century}, 23; citing Charles Doherty, “The Monastic Town in early medieval Ireland”
in \textit{Comparative History of Urban Origins in NonRoman Europe: Ireland, Wales, Denmark, Germany,
Poland, and Russia from the 9th-13th Centuries}, H. B. Clarke and A. Simms, eds., BAR International
kings are kept there; moreover, it is looked upon as the most outstanding on account of its illustrious supremacy.

And who can count the different crowds and numberless peoples flocking from all the provinces, some for the abundant feasting, others for the healing of their afflictions, others to watch the pageant of the crowds, others with great gifts and offerings—to join in the solemn celebration of the feast of saint Brigit.\textsuperscript{329}

Many of these early ecclesiastical centers developed into large monasteries by the eighth or ninth centuries and became major centers of social organization, as towns and villages grew around them. Some were abandoned, eventually, but continued to be used as cemeteries or cillens for unbaptized children.\textsuperscript{330}

Early medieval Ireland looked vastly different after three thousand years of various environmental, political, and economic stresses than the Ireland of the early Bronze Age. In that time, Ireland’s population transitioned from a loose, tribal-based society with relatively low-level stratification to that of a highly stratified, dynastic society with multiple alliances, regional politics, a strong economy, and more international connections than ever before. This slow but impressive layering of power and enmeshing of dominant relationships into the basic social makeup of Ireland was the result of not just brute force and warfare, but the masterful use of perceived power by select individuals through claims to labor and large-scale building projects, possible alliances with the Church, and a careful courtship and display of both local and international economic power.


\textsuperscript{330} Aalen, Whelan, and Stout, \textit{Atlas}, 50. See also Finlay, 407-422.
Ireland’s economy adjusted to the collapse of the centralized Roman state by shifting its trade centers north to the Germans, Gauls, and Scandinavians. Ireland’s continued contacts with the continent played an enormous role in the coming centuries, as links with the Church proved crucial, texts were exchanged and copied, missionaries were sent to Gaul and other regions, monastic daughter houses sprang up, and the much-studied golden age of the Church in Ireland began. The Irish conservation of this classical and ecclesiastical knowledge proved invaluable to the rest of Europe through the tumultuous early medieval period.

Ireland’s physical isolation from the rest of the continent helped to spare the Irish the full brunt of continental upheaval during the early medieval period. While the libraries of antiquity were ravaged and the dynasties of medieval Europe fought for establishment, the Irish existed in a realm of their own that, while not exactly peaceful, was spared major population movements or environmental crisis. Most importantly, the Irish had finally arrived at something Europe’s people would not possess for several more centuries: a relatively stable social system, and with it, a unified culture and identity.
APPENDIX

SCALAR STRESS AND THE DEVELOPMENT OF HIERARCHIES

The model of scalar communications stress appears to have originated in the 1970s, if not earlier, most likely as an economic model for explaining corporate structure and profit. Scalar communications stress has spread from field to field over the decades, from anthropology (looking at societies as types of organizations) to brain-based study and information processing theory. In fact, many aspects and much of the data from information processing studies support the fundamental tenets behind scalar stress, and support it as a critical factor in communication between individuals, groups, entities, units, etc.

Gregory Johnson sets out his model of scalar stress convincingly in his article, “Organizational structure and scalar stress”. He declares the old idea that population growth forces organizational complexity to develop oversimplified, because “predicting stress points at which either fission or simultaneous [i.e. normal] hierarchy development is likely to occur requires knowledge of underlying group organization. Simple knowledge of group-population size is unlikely to be very useful in predicting stress points.”

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331 Mancur Olson has some additional insights into the implications of this idea when examining labor strikes and other socioeconomic forces. See Mancur Olson, The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities (Yale, 1982).


333 G. Johnson, 391.

Johnson first notes that the “potential exchange of information in group decision making should be a function of maximum potential group interaction,” i.e. every single person interacts one-on-one with every other person in the group. His studies showed “some kind of organizational threshold in groups of approximately six individuals” that was often followed by the development of in-group leadership, i.e. hierarchical organization. In groups larger than six that were not hierarchical, he noted decreased consensus in decision making and decreased member satisfaction with group performance.

Johnson suggests that this number, six, is directly related to the capacity of individuals to monitor and process information. Humans do have finite limits for this ability, and when exceeded, decision making errors increase and performance decreases. The average number of “bits” of information the brain can effectively handle at one time is seven. This, of course, directly relates to the fields of brain study, memory, and information processing theory. Johnson then defines scalar stress as “communications” stress: too much information from too many people for any one person to process effectively at any given time. Psychologically, this can result in anxiety, among other mental blocks.

When this small-group plan is extended to larger groups, such as hunter-gatherers, that obviously have more than six members, he concludes that three likely ways of reacting to the resulting scalar stress are possible. “Either system collapse or the

335 G. Johnson, 392.
336 This conclusion is supported by a complementary approach taken by Mayhew and Levinger, which demonstrates that hierarchies are most likely to develop in groups of seven entities, just at that point when Johnson argues scalar stress becomes an impediment to effective decision making. See B. H. Mayhew and R. L. Levinger, “On the emergence of oligarchy in human interaction,” American Journal of Sociology 81 (1976): 1017-1049.
337 G. Johnson, 393-4.
development of hierarchical organization” will occur," or else the total number of units (information sources\textsuperscript{339}) must be made smaller by increasing the number of individuals in each unit. “Larger numbers of people can be accommodated with a horizontally organized social group by expanding the size of the basal units of which the group is composed,”\textsuperscript{340} and hence the development of units such as clans, kinship groups, residential groups, etc.\textsuperscript{341} The only other possibility is “sequential decision making”, where nuclear families make a decision, then the family heads go to their extended families and agree on a consensus, and then the whole clan agrees, and so forth. Johnson rightly dismisses this approach as too slow and clunky for a large-scale operation or large group of hundreds.\textsuperscript{342}

Johnson observes that fission is the most popular reaction to increasing scalar stress, especially in pre-state societies,\textsuperscript{343} which is what would be expected given that pre-state societies lack a state’s mechanisms and bureaucracy for coping with scalar stress. Interestingly, he notes that the easiest way fission is prevented follows Carneiro’s idea, that physical, social, or resource-related boundaries constrain the group and prevent fission parties from settling anywhere else.

Another potential source of scalar stress is the span of control, or reach, of the administration. Johnson defines the span of control as the “number of individuals or organizational units directly subordinate to a given individual or unit within a hierarchical

\textsuperscript{338}\textsuperscript{G. Johnson, 396.}

\textsuperscript{339}A note: Johnson defines “information sources”, or “bits,” as organizational units that might be territorial, population-based, residence, activity units (for example, all the weavers), etc.

\textsuperscript{340}\textsuperscript{G. Johnson, 398.}

\textsuperscript{341}This is the same “chunking” principle from memory and information processing theory that makes it easier to remember the random numbers 4 3 7 5 8 6 9 3 2, nine “bits”, by grouping them into 437, 586, 932. These would now be processed as 3 “bits”.

\textsuperscript{342}\textsuperscript{G. Johnson, 403-4.}

\textsuperscript{343}\textsuperscript{G. Johnson, 408.}
Again the “magic number” appears, as he observes the ideal span of control averages six units or individuals, which makes sense given the previously stated human ability to handle only six or seven bits of information at any given point in time. Thus it follows that the span of control is “inversely related to the variety of activities for which the field of administration is responsible,” and it must be limited in order for a relatively high degree of control to be maintained. These constraints promote the formation of ever-increasing hierarchical tiers, instead of widening span of control.

Given the above circumstance, one might wonder about problems of reliability and information transfer. Johnson notes Williamson’s theory on “control loss”, whereby the potential for administrative control decreases with each increase in the number of hierarchical tiers owing to the opportunities for loss, distortion, and problems in transmission of information. Johnson suggests that writing systems were developed and used by the early administrations precisely to combat this information (control) loss.

Finally, Johnson cautions that “each increase in levels of hierarchy, basal unit size, etc., also represents a stress point that may inhibit further development,” and that much like the pressure against a bottle cap, scalar communication stress builds slowly, but its resolution in either hierarchical development or group fission/system collapse is relatively abrupt by comparison. This would explain why groups which appear in archaeology

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344 G. Johnson, 410.
345 G. Johnson, 412-3.
347 G. Johnson, 415-6, see his text for similar publications of interest on this topic.
348 G. Johnson, 415-6.
to be fairly stable appear to split or break into periods of severe war quite suddenly, and why the development of, for example, complex chiefdoms into states is a slow process that leaves little in the way of material evidence.


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110


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