

Geographies of Communalism, Colonialism, and Capitalism: Ecology and the World-System

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ABSTRACT: Drawing upon recent reworkings of world systems theory and Marx's concept of metabolic rift, this paper attempts to ground early nineteenth-century Ireland more clearly within these metanarratives, which take the historical-ecological dynamics of the development of capitalism as their point of departure. In order to unravel the socio-spatial complexities of Irish agricultural production throughout this time, attention must be given to the prevalence of customary legal tenure, institutions of communal governance, and their interaction with the colonial apparatus, as an essential feature of Ireland's historical geography often neglected by famine scholars. This spatially differentiated legacy of communalism, embedded within a country-wide system of colonial rent, and burgeoning capitalist system of global trade, gave rise to profound regional differentiations and ecological contradictions, which became central to the distribution of distress during the Great Famine (1845-1852). Contrary to accounts which depict it as a case of discrete transition from feudalism to capitalism, Ireland's pre-famine ecology must be understood through an analysis which emphasises these socio-spatial complexities. Consequently, this structure must be conceptualised as one in which communalism, colonialism, and capitalism interact dynamically, and in varying stages of development and devolution, according to space and time.

Ireland is no stranger to reductionist characterizations of its economy, social structure, or geography. From the classical ethnographic study of Arensberg and Kimball, to the works of Estyn Evans, and modern accounts from comparative political economists, Ireland has long stood as a paradoxical case within the European Atlantic periphery.¹ Nineteenth-century Ireland also occupies a contentious position within a series of narratives which, to date, have seen limited integration into mainstream historical-geographical discourse. Marxist historical materialism has recently experienced a resurgence of interest in Ireland amongst other countries, both empirically and theoretically, as an example of a pre-capitalist mode of production.² In addition, others have begun to pay specific attention to Ireland's complex ecologies of production, resulting from its embeddedness within broader systems of colonial rent, and global trade.³ Although these works serve to complicate simplistic accounts of nineteenth century Ireland as either a subsistence economy dependent solely on the potato, or a burgeoning capitalist society, less attention has been paid to the manner in which the complexities of Irish social structure, production, and ecology generated profound spatial inequalities and regional heterogeneities during the pre-famine era.⁴ Less attention still has been paid to the centrality of communalism, in the form of the rundale system of agrarian communism, ubiquitous across the Western seaboard throughout this time, and the importance of its inclusion in any such characterization of the socio-spatial structure of nineteenth-century Ireland.

This paper attempts to remedy these deficiencies, by grounding Irish communalism more clearly within a number of key metanarratives which have gained prominence in recent years

amongst historical geographers, human ecologists, and Marxist historians, in particular those of the *metabolic rift*, as articulated by John Bellamy Foster, and of *ecology and the world system*, as developed by Jason Moore.⁵ Although these narratives offer much explanatory power and insight into the mechanisms which generate regional diversities and spatial patterns of ecological distress, they have seldom been brought to bear on specific historical case studies. Consequently, despite their theoretical sophistication in accounting for macro-level ecological despoliation under capitalism in the modern era; little is known about the position of non-capitalistic modes of production within the burgeoning pre-twentieth century world system. Pre-famine Ireland offers one such avenue for empirical enrichment; by elaborating more clearly the complexities of Irish socio-spatial structure throughout this time, we stand to learn much about the ways in which the structures of colonialism and communality interacted with the world system in a non-deterministic manner. These interactions in turn gave rise to a variety of socio-spatial regimes within Ireland, which were to prove critical for the distribution of distress throughout the later famine period.

The emphasis of this paper is therefore on clarifying the socio-spatial structure of pre-famine Ireland. To this end, it begins with a brief outline of the development of world-systems theory and Marxist human ecology since the turn of the century. This section also considers a number of restrictive accounts of Ireland's development throughout the nineteenth century, which have attempted to characterize it in terms of prime movers such as population growth or a subsistence economy, and others which have erroneously characterized it as solely capitalist. I argue instead that nineteenth-century Ireland must be conceived in terms of complexity, rather than essentialism. Having established the conceptual utility of these metanarratives, I next describe the centrality of communality to the geography of pre-famine Irish agriculture. As a key component of the "hidden Ireland," an historical re-visitation of Irish land law and contemporary statistical accounts suggests that agrarian communism, in the form of the *rundale* system, was a substantial component of the pre-famine landscape with its own unique productive dynamics and worthy of greater attention than it has received to date. Finally, drawing on existing works in historical political economy, I outline an alternative model of Irish socio-spatial structure, which depicts Irish communality within a broader matrix of feudal rent and global capitalism. I conclude by suggesting that to conceptualize Ireland in terms of such complexity means avoiding essentialist accounts which seek to reduce the dynamics of pre-famine Ireland to a single entity or cause. This alternative conceptual model might later form the basis of a revised assessment of the distribution of distress throughout the Great Famine, and of the unique nature of Ireland's metabolic rift.

The global ecology of capitalism and feudalism: tensions and transitions over space and time *Metabolic rift and the world-system*

The concept of metabolic rift has fast outgrown its origins in the critical environmental social science which emerged during the 1980s and 1990s.⁶ It has since been incorporated into a variety of substantive domains such as climate change, marine ecology, urban agriculture, and food sovereignty.⁷ The concept of metabolism has emerged, from its abstract origins in early ecological anthropology, to a formidable theory of the middle range, which has seen some application within social geography (by Carl Sauer, amongst others), and which now features in a number of empirical studies in comparative human ecology.⁸ It owes this rise to prominence, within the social sciences at least, to a number of key publications by John Bellamy Foster, which have since been incorporated within the apparatus of world systems theory by Jason Moore.⁹ Given that both strands have developed in dialogue with each other, it is worth briefly outlining their development, in order to establish their utility for understanding the case of Ireland.

The concept of metabolism constitutes the essential basis of Marx's macro-theoretical model of *modes of production*, which play a central role in Marxian historical materialism. Accordingly, various modes of production may be viewed as differing modes of relating to nature, engendering differing historical forms of resource exploitation and, consequently, differing forms of social-ecological metabolism. Although certain definitions depict *metabolism* as strictly a biological concept, or a structural assemblage of matter-energy exchange pathways irrespective of historical form, the question of historical variability rests at the heart of Marx's use of the concept. Consequently, the concept of *metabolism* permits characterization of the sum total of a society's reproductive activity, and allows distinction between various empirical-historical forms of human organization in terms of their fundamental relations to nature, the form of which depends on how they are embedded within a particular mode of production. Accordingly, a capitalistic or feudal mode of production may present many empirical instances of social-ecological metabolism, depending on the manner in which production is organized at local levels.

Drawing upon the works of soil chemist Justus Von Liebig, Marx sought to refute notions of "natural fertility" which had long dominated the classical political economy of Malthus and Ricardo, a contention which held that land rents were determined primarily by natural rates of fertility, whose spatial distribution was mere historical accident. Conversely, James Anderson claimed in his 1777 *Enquiry into the Nature of the Corn Laws*, that the property of fertility was in fact a historically varying function of human interventions and investments, such as drainage, irrigation, and other remedial works.¹⁰ Shifting the emphasis from abstract notions of "natural endowment" thus mandated a close analysis of the human-generated conditions and inequalities which gave rise to the distribution of fertility and productivity over space. Marx advanced the concept of metabolic rift in order to capture what he saw as the core spatial-ecological dynamic of capitalism; the imbalance of nutrients engendered by the removal of produce from rural sites of local production, to urban centers of consumption during industrialization, where nutrients embodied in agricultural produce were not repatriated into their place of origins, but rather lost in the urban waste system. The underlying mode of production of capitalism was thus central to understanding the dynamics of local production, fertility, and productivity throughout the industrial revolution: "[F]ertility is not so natural a quality as might be thought; it is closely bound up with the social relations of our time."¹¹

Clearly, capitalism and feudalism are not mere passive historical archetypes in the schema of historical materialism; they generate vastly differing dynamics of production from the macro-, to meso- and micro-spatial levels. The ecology of production under putative capitalism, for example, may be differentiated by the centrality of the market as mediator between producers and appropriators; and the acceleration of land-labor separation engendered by the enclosure movement, as a hallmark of primitive accumulation in industrializing Britain.¹² In volume three of *Capital*, Marx characterized such market-oriented capitalist relations as ones which "produce conditions that provoke an irreparable rift in the interdependent process of social metabolism, a metabolism prescribed by the natural laws of life itself."¹³ This dynamic, according to Marx, extended readily to the case of colonial Ireland: "For a century and a half, England has indirectly exported the soil of Ireland, without as much as allowing its cultivators the means for making up the constituents of the soil that had been exhausted."¹⁴ Throughout the early-mid nineteenth century, Britain was a net importer of corn with Ireland as one of its main suppliers, a condition facilitated both by the protectionist corn laws, and the ability of direct producers to subsist on the prolific potato crop. So extensive was this export trade, driven by the imperatives of commodity production engendered by rental obligations under colonialism, that Ireland was often characterized as a "granary for the remainder of the United Kingdom."¹⁵

The question remains however, as to how the concept of metabolic rift facilitates the task of illuminating the complex and multilayered socio-spatial structure of Ireland in the pre-famine period, characterized as it was by the coexistence of capitalism, feudalism, and crucially, agrarian communism as will be qualified below. Historical geographer Jason Moore has recently incorporated the concept of metabolic rift into an ambitious theoretical model of the *longue durée* of capitalism. This model builds substantially on Wallersteinian world-systems theory, which conceptualizes the macro-historical emergence of the conditions of metabolic rift in terms of the rise of global markets. Moore's early work advances the concept of *systemic cycles of agro-ecological transformation* punctuating the long-term development of capitalism. He stresses the relevance of this concept for understanding the emergence of ecological crises in the twenty-first century; which Moore claims owe their origins to the transition from feudalism to capitalism in sixteenth century Europe (1450-1640).¹⁶ This perspective claims to move beyond accounts which seek to assign causation for long-term ecological change to individual, local phenomena such as imperialism, technology, or industry, focusing instead on the reorganization of global ecology in terms of the logic of capital.

Within this broad historical perspective, Moore asserts that primitive accumulation, or the dispossession of property under colonialism, be conceptualized as essentially *multi-scalar* insofar as the twin colonial imperatives of land consolidation, and the separation of producers from their means of production, underpin the emergence of capitalism at multiple organizational levels (i.e. at the level of individual farms, settlements, estates, and national balances of trade and debt). These processes, resulting in the profound town/country antagonism which features centrally in Foster's accounts of metabolic rift, are therefore afforded broader historical attention as products of antecedent "series of successive historical breaks in nutrient cycling."¹⁷ Moore's approach therefore extends the periodization of metabolic rift across the "longue durée" of capitalism, by illustrating how agriculture had, in certain locations, become subordinated to the imperatives of capital long before the nineteenth century. The crucial contribution of Moore's model however, is to orient us toward the immanent need for a sufficiently abstract theoretical apparatus, as well as specific empirical-historical enrichment in order to assess inequalities of resource distribution within countries at specific historical points, given that different modes of production are capable of structuring resource dynamics in a variety of inequitable ways. Moore's abstraction does however, identify an important general ecological dynamic of capitalisms' historical development – that of its need for intensification through land-grabbing (conceptualized by David Harvey as a "spatial fix"), whereby capitalist accumulation comes to depend on additional land inputs in order to upscale agrarian productivity.¹⁸

Adopting a world-systems perspective thus augments our understanding of long-term socio-spatial change, by examining how the growth of capitalism was predicated centuries earlier on a crisis of feudalism, or "socio-physical conjuncture." This crisis, whereby feudal systems which were based upon the political extraction of tribute in the form of absolute surplus encountered limits to expansion, thus necessitated the outward expansion of global trade in order to sustain levels of accumulation.¹⁹ Imperialist colonial expansion, driven by systemic limitations to accumulation under feudalism, thus gave rise to a condition of core-periphery dependency. Coercive extraction in peripheral countries and colonies (including those of Atlantic slavery, European second serfdom, and Ireland from the seventeenth century), provided grain and raw materials to core regions, facilitating the conversion of agricultural lands and the freeing of an urban labor supply to fuel emerging industrialization. Driven by a need for food and fuel, global expansion gave rise to a system of enduring ecological inequality under a new extractive global division of labor, conditioning the unequal movement and distribution of natural resources both within and between implicated core and peripheral nations. The effect of this global incorporation

upon local ecology and production in Ireland was to introduce not only an international dimension to resource circulation, but to further subordinate local ecology and production to market and imperialist imperatives, giving rise to a condition of “metabolic rift” in the form of diminished productive capacity as detailed above. Colonial Ireland was therefore central to this emerging international division of labor.

The uneven transition to capitalism

Ireland was not merely a passive agent caught amid the churn of history and the globalization of trade; in this sense, world-systems theory falls somewhat short in its depiction of the external, unidirectional influence of the world system on production in non-capitalist societies. As a result, it produces too sharp a distinction between capitalist and pre-capitalist forms of production, and implies that the process of capitalization consists merely of the external imposition of market relations upon local producers. Ellen Hazelkorn is typically credited with forwarding a perspective emphasizing Marx’s reading of Ireland’s capitalistic nature throughout this period.²⁰ According to Hazelkorn, Marx’s most prominent commentaries on Ireland (those in volume 1 of *Capital*), centered on the question of Ireland’s transition from a feudal to a capitalist mode of production, a process exacerbated in the post-famine years by demographic collapse, clearance and consolidation. Hazelkorn’s interpretation of Marx’s reading of Ireland as a “capitalist economy in the making” centers on a number of key structural developments throughout the mid-nineteenth century:

- (i) the dramatic shift in population which removed an otherwise latent surplus population from rural areas as a first step towards the formation of a rural and urban proletariat; (ii) the transference of agricultural priorities from tillage to pasture further reducing the necessity and livelihood of tenant-farmers; and (iii) the introduction of free trade in land [which] encouraged the concentration of land under an emergent rural bourgeoisie.²¹

According to Desmond Greaves, this apparent contradiction of the law of accumulation, by which surplus production continued apace against the backdrop of a declining economy in Ireland, is accountable for Ireland’s unique colonial relationship with Britain. Hazelkorn rightly points out that when considered as a unit, capitalist accumulation continued beyond the borders of Ireland, owing to the appropriation of Irish surplus by Britain.²² Mathur and Dix have also suggested, in agreement with Hazelkorn, that Marx’s inclusion of Ireland under a discussion of the “General Law of Capitalist Accumulation” in *Capital* served to downplay simplistic interpretations of Ireland’s colonial relationship with Britain which emphasized the Act of Union as a formal determinant of Ireland’s capitalist status. His interpretation focused instead on how “the transference of capital, foodstuffs, and labor from Ireland to England formed an integral and necessary part of their respective economic growth.”²³

Although Hazelkorn’s is largely an unproblematic account of prevailing structural conditions, such a reading engenders a number of conceptual difficulties, owing to the predominance of the manner in which this surplus labor and agricultural produce were appropriated from the Irish tenantry; in Ireland, the universal role of the rent relation as mediator between landowner and laborer continued unabated long into the nineteenth century. In short, Hazelkorn’s three factors of structural change cited above are but one means of assessing the relative penetration of capitalism into Irish society, and but one set of levels according to which one may reckon the extent of capitalism. Others have argued that such a reading was precisely forthcoming in Marx, and that the issue is perhaps not with his specific rendering of the agrarian question in Ireland, but the manner in which others have interpreted it.²⁴

On this point, Slater and McDonough forward an alternative reading of Marx which emphasizes the feudal nature of Irish social relations under landlordism. Accordingly, they point to the gross annual rental of landlords in 1867 of ten million pounds, a valuation which incorporated almost two-thirds of the surface of Ireland.²⁵ The political and economic subjugation of Ireland thus rendered a feudal rent relation upon direct producers beyond the parameters of capitalist free contract, under which rent became not a surplus above wages and profit as per capitalist rent, but rather a surplus above minimum subsistence requirements without profit.²⁶ This extraction was in turn predicated upon the conquest of Ireland under colonization, which resulted in the eradication of the Gaelic order, confiscation of lands under the estate system, and the erosion of tenurial security under the penal code. William Petty estimated the net value of Irish rentals in 1670 to be £800,000 out of a total national income of £4,000,000, rising to £1,200,000 in 1687, and by 1779, Arthur Young had estimated a total yield of £5,293,000 for Irish rent.²⁷ Under such a system, English grantees and their agents engaged in extensive leasing and sub-leasing in order to extract maximum rent returns, resulting in a “rapid growth in Ireland of leasehold tenure to an extent never experienced in England.”²⁸

In Ireland, rent was thus determined not by the vicissitudes of supply and demand (a moot mechanism given the extent of land monopolization), but by the amount of intermediary sub-tenancies which, in practice, doubled rent returns according to each successive division and stage of mediation between direct producer and landlord.²⁹ Following the legalization of long leases for Catholic tenants in 1778, many lengthy leases were granted, with the lessees enjoying significant profits owing to an upsurge in tillage prices throughout the Napoleonic wars. Such was the profitability of tillage at this time that the estate of Lord Leitrim, let originally for £8000, was subsequently re-let by middlemen for £64,000, under leases of thirty years.³⁰ With rent being set, not by the relative scarcity of land, but by a relation of force between direct producer and the person to whom rent-collecting was farmed, this exploitative relation has been described as extra-economic, and as feudal. This feudal rent relation featured prominently as a hallmark of the Irish class structure, and as a primary mechanism of surplus appropriation.

At regional levels, the mere presence of such a developed cash nexus has unfortunately lured others to a deceptive acceptance of the presence of capitalist relations, and the work of Meiksins Wood epitomizes this strain of thought³¹. Initially, Wood establishes the specific mechanism by which capitalism penetrates rural relations, by suggesting the transition from feudalism to capitalism be reckoned in terms of a transformation of property relations through dispossession, and the institution of the market as prime mediator, which assumes “an unprecedented role in capitalist societies, as not only a simple mechanism of exchange or distribution but the principal determinant and regulator of social reproduction.”³² With regard to Ireland, Wood draws a clear distinction between the attempts of the early sixteenth century plantations to institute a system of feudal subjugation upon the Gaelic order by military means, and later attempts of the Tudor monarchy to impose an alternative model of economic, political, and legal order based on revolutionizing existing social relations. Consequently, Wood characterizes these later efforts as successful in instituting a new imperial project, which sought to “subdue the Irish by transforming their social property relations and introducing agrarian capitalism.”³³

Given that it glosses over substantial internal complexities and ignores the feudal character of the rent relationship in much of Ireland, there is, then, little validity to the contention that: “The Irish model [...] represented a pattern of imperial settlement different from other European empires, a form of colonial domination that replaced existing property relations with new ones driven by market imperatives.”³⁴ Furthermore, the extensive presence of agrarian communism (to be established below), further challenges such characterizations as depend solely on the presence of markets, ignoring continuities in non-capitalistic forms of production. Yet, it is also

abundantly clear that historically, Ireland was integrated substantially into global markets. The introduction of the potato into the tillage of the Irish peasant, and its subsequent dominance in the diet of the agricultural laborer, was predicated upon its introduction from Britain's American colonies.³⁵ Consequently, although the assertion of market primacy in world systems theory appears overdrawn, its role as a key influence on the organization of production at various spatial levels should neither be neglected, nor elevated to the status of prime determinant.

In order to resolve this conceptual dilemma, the remainder of this paper establishes the extent of non-capitalistic communal forms of production within Ireland at this time, before detailing their integration into broader systems of feudal tenure, and capitalist exchange. As we will see, there is no inherent contradiction in such an approach—the socio-spatial structure of Ireland at this time requires an approach which emphasizes these complexities, in order to make sense of the manner in which production and productivity were both spatially distributed, and critically compromised, throughout the pre-famine era.

The extent of agrarian communism in post-medieval Ireland

The practice of farming in common or as joint leaseholders, was widely distributed across pre-famine Ireland; the historical ubiquity of this practice however, has remained a highly contested topic in Irish historical geography throughout much of the twentieth century. Building on the seminal works of Seebohm and Meitzen, Estyn Evans was amongst the first to suggest that, contrary to the former's emphasis on dispersed or *Einzelhof* patterns of settlement as a long-standing feature of Celtic society associated with pastoralism, both nucleated *and* dispersed forms of settlement could be traced to the iron age, with evident continuities into the recent past.³⁶ These nucleated village clusters consisted of a "joint-farm which was leased in common by the joint-tenants, or partners, who co-operated in the work of the farm, each contributing his share of the joint-rent."³⁷ Each tenant's holding consisted not of a fixed quantity, but of a notional entitlement to a share in the lands of the commune: "The land of the joint-farm was held in rundale by which individual holdings, to assure equal quality as well as quantity, consisted of open plots and strips scattered through the arable land."³⁸ The extent of common holding in pre-famine Ireland is well substantiated by statistical sources of the time as indicted in figure 1 below, which maps the extent of common- or joint-holding within counties based on data from the 1845 Devon Commission.³⁹ Shadings of common holding are overlaid with an indication of the extent of poverty within each county, measured as the total poor law valuation of county holdings divided by the county population. As may be seen, those areas of higher common holding were also of lower valuation.

When decomposed further to poor-law union, of which there were 130 in Ireland in 1845, greater within-county variance may be found. Therefore, although 58% of the lands of county Mayo were held in common, for the Mayo unions of Westport and Ballina in the year 1845, 83% and 68% of lands respectively were held in common or joint tenancy.⁴⁰ Physical identification takes us only so far however, and it is important to approach rundale not simply as a morphological oddity (i.e., as settlement nucleation), but also by the prevalence of institutions of communal governance. The works of McCourt in particular emphasized the tendency of rundale to wax and wane over time, with individual holdings devolving into communes over generations of subdivision, along with possible consolidation of former joint units.⁴¹ James Anderson also introduced a distinction between the institutional and the physical forms of rundale, suggesting that earlier forms of kinship grouping (perhaps more readily identifiable as potential survivals of kin-based communal governance), and more recent forms of collective leaseholding, both gave rise to the characteristically nucleated villages recognizable as rundale.⁴²

Identification of the prevalence of rundale in terms of institutional criteria is far more difficult a task, relying as it does on corroboration not readily amenable to historical and statistical

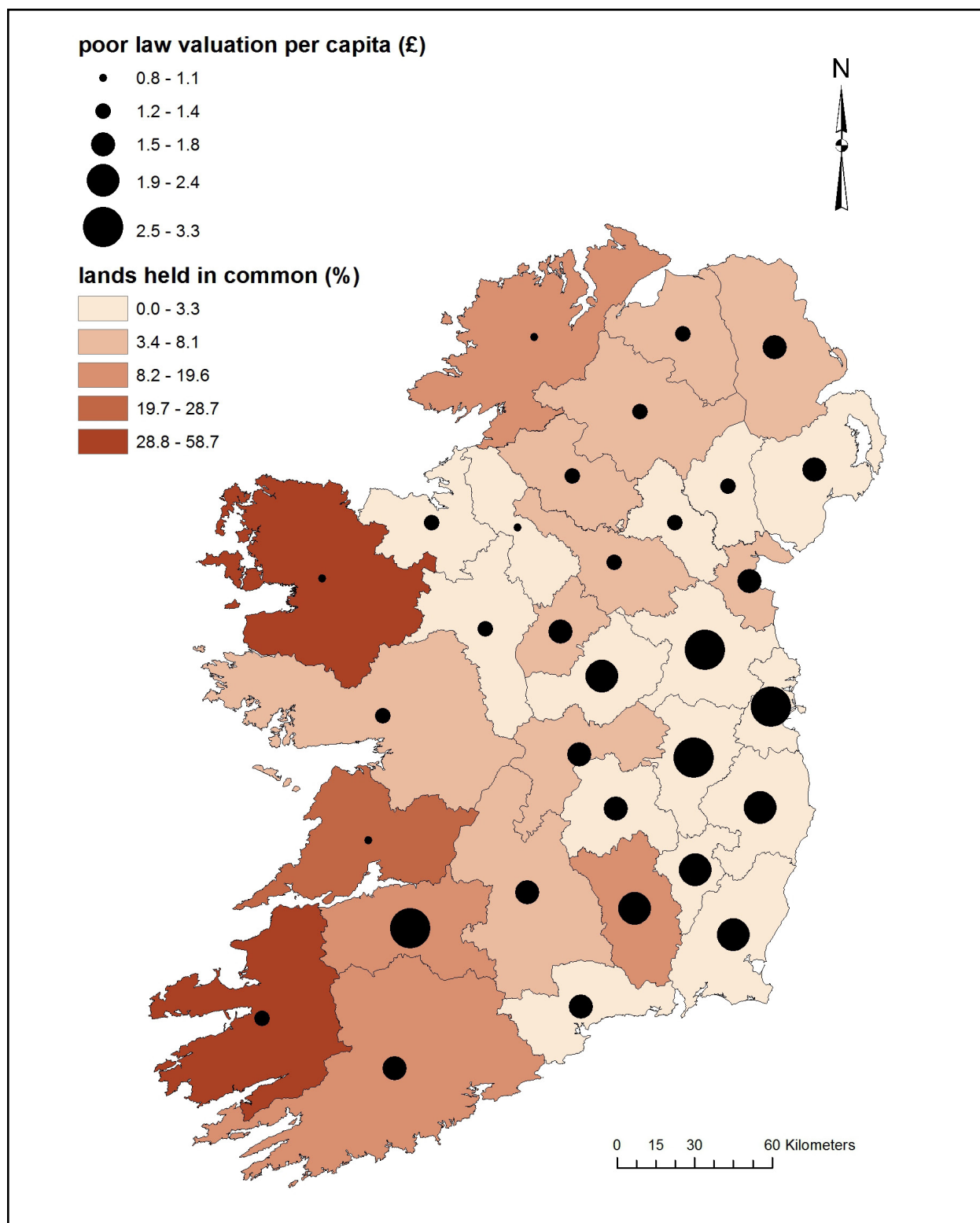


Figure 1. Lands held in common or joint tenancy, and poor law valuation per capita, 1845.

record. However, there are a number of ways in which this verification may be accomplished. As argued above, the presence of communalism was central to the socio-spatial identity of pre-famine Ireland, in tandem with a country-wide system of feudal rent, and the gradual encroachment of global trade networks – in the case of Ireland, vis-a-vis its trade in agricultural produce with Britain. The extent to which those nucleated settlements themselves consisted of institutions of communal governance – such as the allocation of land shares by communal council, or the deputation of village headmen – may instead be corroborated by briefly examining the coevolution of customary legal codes with those of various waves of colonization in the post-medieval period. This is an essential step, given that systems of farming based upon communal administration conferred a drastically different ecological dynamic than that of individually farmed units, owing to the collective exploitation of their resources, and the unique balance of tillage and arable engendered by communal share rotation, and grazing entitlement allocation.

Communalism, communal property, and institutional co-evolution

According to Wylie, modern Irish land law owes its composition to a range of predecessors, including principles of English common law grounded in Norman feudalism, and English statute law enacted both by devolved Irish parliament, and by Westminster subsequent to the implementation of the Act of Union in 1801.⁴³ Land tenure in eighteenth- and nineteenth-century Ireland must therefore be interpreted in context, as a cumulative product of successive waves of colonial influence, the inconsistent eradication of indigenous legal codes governing landholding, transmission and succession, political conflict, and changing local administrative structures. Legal practice, particularly throughout the early nineteenth century, was compounded by the administration of law both by institutions of the crown – such as justices of the peace, magistrates, and assizes – and by those of the manor courts. The latter of these did not administer English common law, and quite often sought restitution within the provisions of local customary code.⁴⁴ Despite this complexity, a number of key features of landholding may be extracted through a broad examination of the development of Irish tenure under the dual influences of indigenous Brehon law and the colonial apparatus, which permits some corroboration of the prevalence of institutions of agrarian communalism under the rundale system.

Following the ascendance of James I to the throne of Britain in 1604, a proclamation was issued in 1605 by lord deputy Arthur Chichester declaring all persons of Ireland subjects not of their lord or chief, but of their British king. Crucially, this proclamation outlawed the indigenous Irish system of partible inheritance, known as gavelkind under Gaelic law, through a declaration by judges of the King's Bench in Dublin that neither should be recognized or enforced in the king's court.⁴⁵ According to Irish law texts of the seventh and eighth centuries, indigenous landholding centered on kin-groups known as *derbfine* (true kin) which exerted legal power over their members, according to which each legally competent male of the kin-group was entitled to some degree of responsibility in the kin-land, or *fintiu*.⁴⁶ Indicative of the subservience of individual to collective, members were not permitted to sell shares of land against the wishes of their kin group, and in certain instances of transgression, the kin-group could be held liable for the offences of individual members⁴⁷. Sir John Davies, in his *Of the Lawes of Ireland* (c.1610) detailed how Irish lands were distributed amongst *septs* headed by local chiefs, under which lands were distributed periodically between sept members, according to the provisions of gavelkind.⁴⁸

Similar forms of collectivity in a pan-European context were noted by Coghlan, who remarked on the Romanian body of customary law, or *jus valachorum*, which bound tracts of land to individual villages as the collective property of their residents.⁴⁹ Coghlan and Davies' comments suggest that not only was such a system of collective holding and partible inheritance characteristic of many pan-European forms of kin-based social organization (of common Celtic origin in the

cases of Ireland and Wales), but that it also involved periodic division and cyclical reallocation of lands.⁵⁰ Land share allocation under gavelkind thus exhibits notable similarities with the later practice of periodically rotating shares under the rundale system. In parts of Antrim and Cork at the end of the eighteenth century, Arthur Young remarked on the existence within these regions of “change-dale,” a practice which involved annual rotation of arable plots amongst community stakeholders. Contemporary accounts suggest that similar practices of rotation operated across certain regions of the Western seaboard, and in parts of Kilkenny and Fermanagh⁵¹. Although a tenuous proposition owing to source prestige bias, Young’s observations at least suggest that the practice of gavelkind appears to have survived with some prevalence amongst the lower classes in customary form, following the eventual submission of the Irish nobility to primogeniture under British colonization.⁵² Consequently, the practice of periodic rotation in certain districts, as observed by Young in the late eighteenth century, is suggestive not of an institutionalized system of private holding, but rather of a co-existing mode of collective holding and share entitlement or usufruct, which Friedrich Engels argued was a feature of Celtic survival⁵³.

Other accounts corroborate the institutional extent of agrarian communism across Ireland, from the seventeenth- to nineteenth-centuries. Writing in 1682, Henry Piers remarked on such a system of division undertaken by the inhabitants of a Westmeath townland, who allocated shares in both their arable and pasture by lottery⁵⁴. Over a century later, Peter Knight remarked on a similar process of collective division observed in the townland of Killmore (Mayo), by which the inhabitants cast lots for the arable land of the commune, “every third year for the number of ridges each person is entitled to after the usual rotation is over.”⁵⁵ These lots were typically of varying quality and scattered, “in different parts of the farm, so as to equalize the quality among the whole,—a ridge in a good field, one in an inferior, and one in a worse one.”⁵⁶ Allocation of grazing entitlement on the village outfield was similarly decided by the qualitative measures of *collops*, “which originally meant the number of heads of cattle the farm could rear by pasture.”⁵⁷ Therefore, in order to avoid overgrazing, each commune member was permitted to graze no more stock than his tillage area could support, thereby maintaining a delicate balance between grazing and fertilization.

On this basis, it may be concluded that although the object of Chichester’s 1605 declaration, and subsequent crown plantations, was to supplant the existing Gaelic order by undermining its indigenous legal code, it is clear from the preceding examples that there remained within the later rundale system, a remarkable degree of similarity — if not continuity — in local modes of land administration, tenure, and transmission which bear striking resemblances to gavelkind such as it operated under Gaelic law. Amidst the administrative structures of colonialism, there remained notable indigenous elements of some resilience, in various stages of development and devolution. Although Brehon law had begun to yield to the influence of *ius commune* (European common law) by the late medieval period, according to Kenneth Nicholls, its longevity was previously asserted by Frederick Gibbs.⁵⁸ He suggested an historical link between the provisions of Brehon law, and the rundale system of the nineteenth century

What traces did Brehon Law, though abolished by the Judges and the Lord Deputy, Sir Arthur Chichester, leave in the habits and sentiments of the people, and can any of those traces be observed at the present day? Of the custom of Tanistry we hear no more; but the custom of gavelkind long survived, reappearing, under English law, in the form of tenancy common down to the early part of this century; and it may still be traced in the love of holding property in families, in the tendency to subdivide the land, and in an unfavourable shape, in Rundale, where the tenement is made up of a number of scattered patches of each particular quality of the land.⁵⁹

In terms of Moore's depiction of the centrality of the world system, the continued presence of gavelkind and subdivision is not difficult to comprehend in light of the surplus-maximisation imperative under which many landlords, estate administrators and agents operated. In order to maximize rent returns, long leases were initially granted to Irish tenants, some up to hundreds of years, or leases renewable for three lives, under which subdivision subsequently held free rein.⁶⁰ Under such conditions, customary modes of partible property transmission could continue, uninhibited, amongst the tenantry. Into the nineteenth century, as the wars of empire raged between England and France, such lengthy leases were readily granted, owing to an upsurge in tillage prices throughout the Napoleonic wars.⁶¹ This practice of maximizing returns through increasing the absolute density of direct producers continued until the contraction of the domestic British grain economy at the conclusion of the Napoleonic wars, signaling the end of wartime price inflation.⁶² Eamonn Slater has argued the conceptual significance of the intermingling of possession and usufruct in typifying property relations under rundale. Accordingly, Slater suggests that "the rundale system of farming is not merely a system of commonage but a specific system of land tenure, which is determined by the inheritance patterns of gavelkind."⁶³

On the basis of the foregoing discussion, it is clear that existing accounts have drastically overdrawn a dichotomous transition between capitalism and feudalism. Continuity and co-evolution, rather than discrete rupture, is the hallmark of the Irish experience. Furthermore, unravelling the socio-spatial distribution of Irish tenure in this manner has demonstrated the multilevel nature of the impact of the world-system. The Irish tillage system was inherently responsive to market signification throughout this time, as may be observed in the early eighteenth-century shift from tillage to pasture in Irish agricultural production. As the post-war grain economy contracted into the nineteenth century, a new imperative took hold in response to the shifting structure of economic incentives, giving rise to a post-war regime of consolidation. On the Nixon estates in county Donegal, tracts of upland commonage were enclosed for grazing, whilst on his estates, Lord Leitrim retained for his personal use 1130 acres of mountain commonage for sheep grazing, subsequently raising rents on his tenants' arable plots.⁶⁴ As market conditions shifted in favor of production regimes dependent upon large-scale grazing, rather than intensive, small-scale tillage; enclosure and consolidation sought to deprive rundale communes of their grazing grounds, and to realign the imperatives of landlordism away from a rental regime of maximum population density, toward one of consolidation.⁶⁵

In terms of local ecologies of production, the system of trade in produce between Ireland and Britain was underpinned, within certain regions, by a mode of production based not on individual holdings but on agrarian communism. In this way, producers retained a degree of autonomy over the organization of their means of production. How might we characterize the precarious ecology of this system of production, by which agrarian communism continued to exist under the rubric of feudal rent, whilst its surplus produce entered into markets determined by political-economic trends playing out far beyond its boundaries? In order to understand how the interaction of agrarian communism, feudalism, and capitalism resulted in a state of heightened ecological risk exposure, a condition characterized above as one of *metabolic rift*, I conclude by examining more closely the structure of Irish trade throughout this time. In doing so, I advance a conceptual model of the structure of Irish tenure during the early-mid nineteenth century.

A complex mode of production: the ecology and socio-spatial structure of pre-famine Ireland

As discussed above, the progressive devolution of the institutions of Gaelic society suggests that the rundale system constituted not only a mode of landholding conforming to the parameters of agrarian communism, but that it was capable of coexisting comfortably under the rubric of Irish feudalism. In this manner, a commune could exist under conditions of joint or

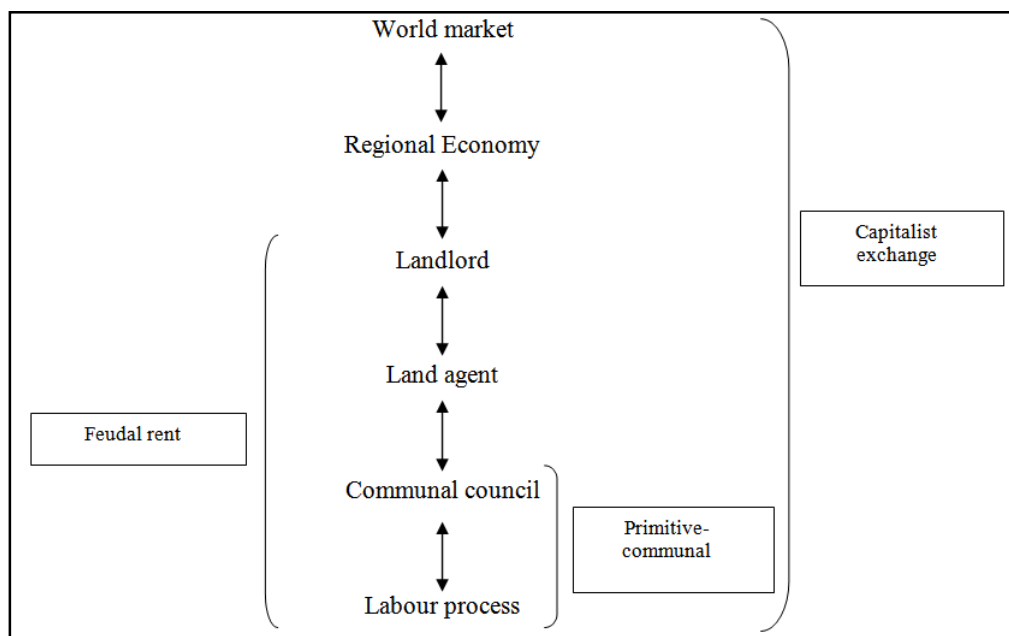


Figure 2. Socio-spatial structures of communality, colonialism, and capitalism in nineteenth-century Ireland.

collective lease, as a primary stage of mediation between landlord and tenant-as-collective, whilst controlling access to the means of production on the basis of devolved, indigenous legal code. Organization of access to the means of production here resides within the *community*, and such an understanding is critical for grasping the ecological dynamics of Irish agrarian communism. Figure 2 offers a provisional outline of this systemic relation, according to which, the *socio-spatial* nature of the model of landholding distribution proposed in this paper becomes clear. Rather than proceeding by detailing the spatial distribution of forms of formal-legal tenure, when attempting to reckon the ecological dynamics of pre-famine Irish agriculture, it instead makes sense to consider in abstraction, the intermixing of the various components depicted in figure 2. Consequently, we may conceive of local agricultural practice as contingent upon a potential combination of influences, in varying states of devolution or development, according to place and time.

The effects of the Irish feudal rent system and of the institutions of agrarian communism upon the character of local production are readily grasped; but what of the extent, and influence of the world system at this time? As noted above, the exacerbation of the town-country antagonism was central to Marx's understanding of the macro-ecology of production under capitalism during the industrial revolution. The spatial extent of this relation had arguably transcended the narrow confines of English farming villages and industrial towns by the nineteenth century however, extending its reach through a growing demand for foodstuffs and raw materials sourced from colonies far afield. In his "energetic" analysis of industrialization, Alf Hornborg has attempted to quantify the world-systems' growing demand for resource appropriation. Hornborg's estimates demonstrate the extent of this ecological displacement in the North American British colonies, which facilitated the supplanting of domestic British agricultural labor to manufacturing, through the externalization of raw material production under imperialism. According to Hornborg, the appropriation of "1.1 million hectares of cotton fields in North America . . . meant the liberation of the over 6 million hectares in Britain that would have been require to generate the equivalent amount of revenue from woollen manufactures."⁶⁶

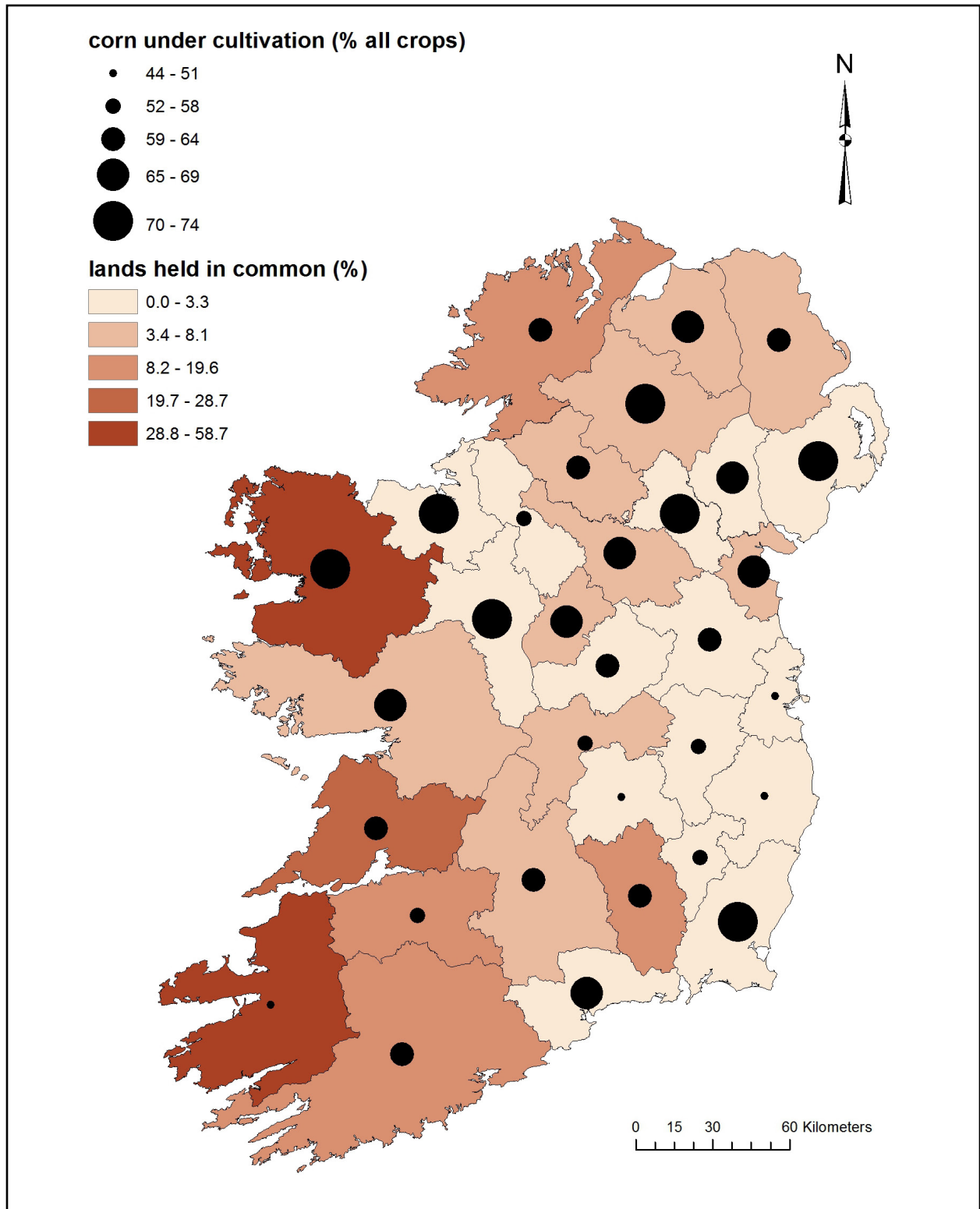


Figure 3. Lands held in common or joint tenancy (1845), and corn production (1847).

In the South American colonies, demands for precious metals in Europe fuelled a drastic reorganization of labor and village structure, as in Bolivia. The colonial administration accomplished this by instituting a system of draft labor (*mita*), which involved conscripting one in seven adult males for work in mining and textiles. A supply of labor was established by the colonists' relocation of 1.5 million indigenous people, and the imposition of collective agro-pastoral systems based on commonage, community regulation and herding.⁶⁷ In the case of Ireland, as with the Bolivian *mita* system, the spur of global market demand and the apparatuses of colony and market exerted their pressure on the organization of Irish production at settlement level. Figure 3 illustrates the continuing importance of marketized cash-crop production across all regions of Ireland, contrary to the subsistence model that others have fallen victim to.⁶⁸ To varying extents, corn formed an integral part of peasant production, across areas with both high and low extents of common holding. However, both market and landlordism conspired to disrupt consumption patterns at settlement level; as a result, in certain areas, such as Clare Island in County Mayo, oats became eliminated from local diets and consigned entirely to the market in order to meet rent obligations.⁶⁹

Regarding the extent of Ireland's trade in produce with Britain, Figure 4 reveals something of the volume of Irish agricultural output consumed beyond its borders. Total weights of Irish grain imported into Great Britain from 1805–1840 are tabulated in this figure at five-year intervals.⁷⁰ Beginning from a base of 2,411 quarters (30.6 metric tons) of oat and oatmeal imports in the year 1800, oats display almost consistent growth across the tabulated time period, peaking at 2,037,885 quarters (25,881 metric tons) in the year 1840. Such was the relationship between British industrialization and the transfer of foodstuffs from its colonies that the proportion of British population engaged in agriculture fell from 90% in 1698, to 10% by 1881.⁷¹ Whilst figure 4 illustrates real growth in the volume of trade throughout this period, with significant consistency across all categories buoyed in part by the presence of the protectionist Corn Laws which exempted Ireland from import trade tariffs, figure 5 tabulates Irish grain as a proportion of total foreign imports, allowing estimation of the relative contribution of Irish produce to British imports. Figure 5 excludes English and Scottish grain processed through the Port of London over the period 1820–1840, permitting a cursory comparative assessment of the position of Ireland amongst other colonies.⁷²

Although in Figure 5 it is somewhat more difficult to discern trends, given likely year-on-year inconsistencies in import volume from colonies further afield, it may be observed that Irish oats comprised a peak proportion of 98% of foreign oat imports into Britain in the year 1832, with Irish barley peaking at 50% in 1824, recovering to 39% in 1836. Crotty's analysis of Irish export data between 1698 and 1818 also notes a burgeoning export market throughout this period in both tillage produce and livestock, to the extent that by the early nineteenth century, Ireland enjoyed a profitable trade in pigs and pig meat with locations as far afield as Denmark.⁷³ In the period immediately following Ireland's formal colonization, marketization began to take hold as evidenced in the growth of the port towns of Belfast, Derry and Cork, and an increase in granted authorizations to hold town markets and fairs, with over five hundred taking place between 1600 and 1649.⁷⁴ Between 1616 and 1625, the amount of wool leaving Youghal rose from 4,378 stones to 15,716.⁷⁵ In short, Ireland's integration into global markets vis-à-vis its close trading relationship with Britain, far from being a phenomenon of the late nineteenth century, was a consistent hallmark of its political and economic union.

Conclusion: Ireland's precarious pre-famine ecology

The specific form of the Irish metabolic rift within the rundale system was the disruption of the agricultural cycle through the removal of agricultural produce from local sites of production.

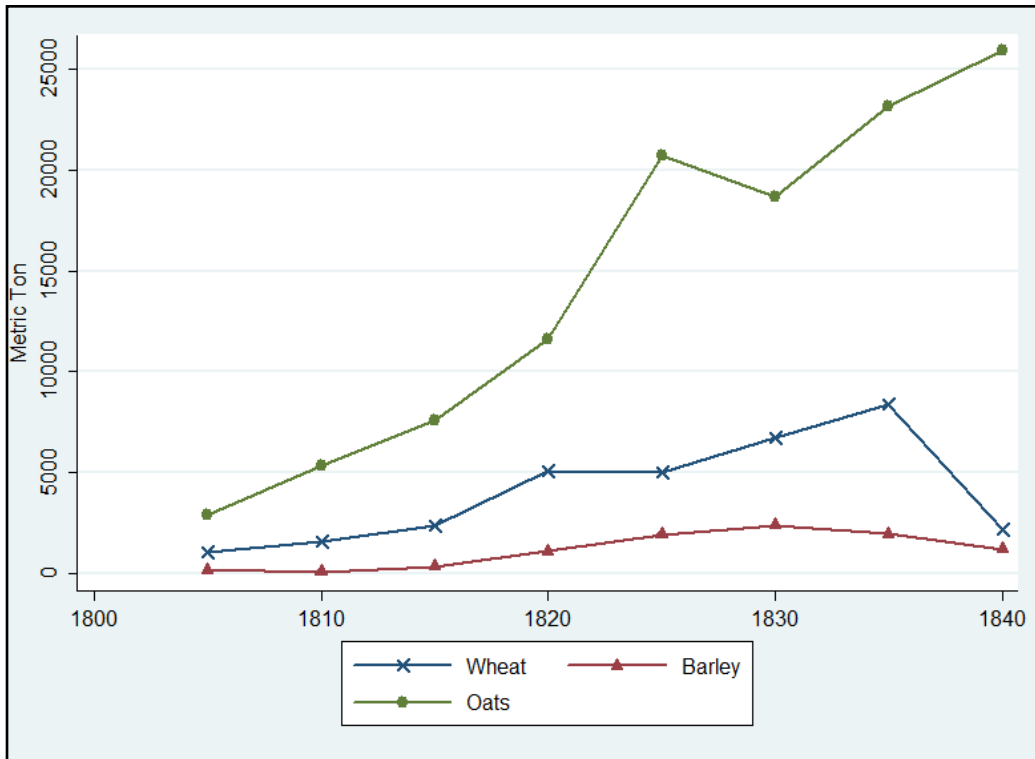


Figure 4. Grain of Irish growth imported into Britain, 1805-1840 (metric tons).

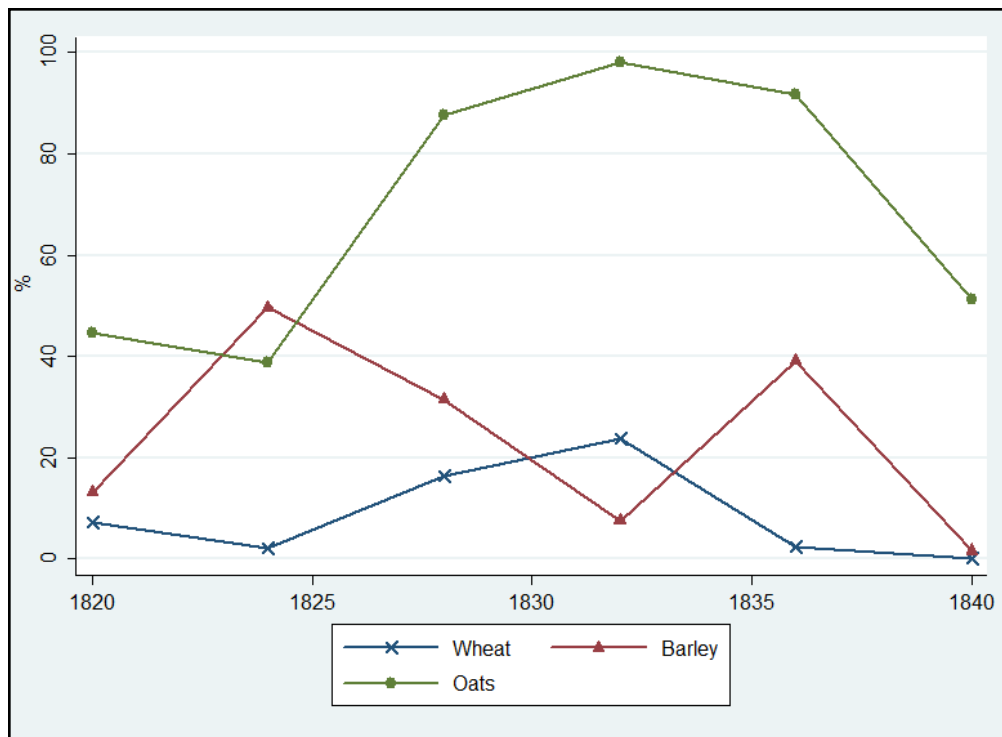


Figure 5. Irish grain as a proportion of total British foreign grain imports, 1820 -1840.

As Ireland's population continued to grow prior to the demographic watershed of the Great Famine, and as markets increasingly dictated that enclosure, rather than subdivision, was to prove for landlords the more productive use of landed estates, a paradoxical state was reached. The rundale commune's lands, which were in many cases subject to continuous cropping without fallow, were forced to yield both subsistence and cash crops under conditions of increasing ecological stress. Given that the sale of agricultural produce was integral to the reproduction of the rundale through the realization of rent; a classic, albeit multi-scalar mechanism of metabolic rift came into play, whereby movements of produce off-site deprived the commune permanently of these repatriated nutrients, which were instead consumed in locations far from their site of production. The long-term effect of this process was a decline in productivity and output, particularly in the inter-famine period, during which "the great export of live stock and of various other kinds of agricultural products raised in this country . . . has tended for many generations, to cause a depletion of fertility which can only be made good by importing feeding stuffs and fertilizers, and bestowing constant attention on the land."⁷⁶

Few regions, even those of the classically isolated Atlantic "peasant fringe," escaped the imperative of cash generation. Regarding the remotest parts of the rundale-dense barony of Erris, county Mayo, in the late eighteenth and early nineteenth centuries, Arthur Young remarked on how livestock trade and cash-crop sale formed an integral component of the local economy, thus bringing the occupants of this classical subsistence fringe into contact with the vicissitudes of the market:

[H]e was told "there is not a post-house, market town, or justice of the peace in the whole Barony." Yet . . . Cattle were driven into the market at Ballinasloe. In 1802 MacParlan wrote that "in years when they escape a blast" the people of Erris "plentifully supply the markets of Newport and Westport with potatoes and barley."⁷⁷

Furthermore, in the context of earlier regimes of subdivision—engendered by the desire of agent and landlord for increasing rent returns according to the number of intermediary lessors, and the inherent tendencies of rundale toward subdivision and parcellization under partible transmission, the presence of the potato as a key subsistence crop facilitated an ever-increasing density of direct producers. Due to its prolific nature, its ability both to thrive on poor-quality soils and act as a primer for corn production, the potato yielded a sufficient stock of food to permit the tenant to produce his rental surplus in the form of cash-crops such as oats, on increasingly smaller plots.⁷⁸ Gibbon notes that:

This attribute of the potato allowed the peasant's subsistence to be produced with a minimal expenditure of labour in the same way as the abundance of its yield allowed it to be grown on a minimal area of land. But the point of thus economizing in labour and land was to free these factors for the greater production of the grain or butter or beef which made up the rent.⁷⁹

Such was the extent of this intensification of productive activity and market orientation that Peter Gibbon refers to the presence of a "dual economy" of export-oriented cash crop and subsistence zones.⁸⁰ Although this distinction may be somewhat overdrawn, it is clear that the net effect of the accumulation imperative was to push rundale to ever-marginal locations as consolidation took hold in response to livestock price fluctuation in the early nineteenth century.⁸¹ Despite this "Malthusian drift," and its tendency to lead to the cultivation of an increasingly narrow range of crop varieties, the

preceding evidence demonstrates quite clearly that the hierarchical integration of rundale remained largely intact, albeit with a concrete labor process not readily explicable solely in terms of market imperatives.

The dynamics of these interactions between production, tenure, and trade, as detailed in figure 3, thus conspired to critically interrupt the agricultural cycle. Despite the attempts of the commune to counter declining returns with techniques such as the selective application of fertilizer, ridge cultivation, and the maintenance of an infield-outfield rotation, such measures were “inadequate to overcome the loss of nutrients from the tilled soil and thereby unable to repair the damage done to the nutrient recycling process by the metabolic rift. More nutrients apparently leaked from the ecological system than were replaced by the rundale members and this was manifested in the continuing decline in the fertility of the soil.”⁸² These conditions accelerated to a drastic tipping point in the pre-famine era, resulting in a loss of species diversity, and a state of increased connectivity and biomass density brought about by subdivision and land-use intensification⁸³. Together, they define the specific socio-spatial character of the metabolic rift, such as it operated under Irish agrarian communism.

Contrary to a number of accounts cited above, the encroachment of capitalism did not necessitate an eradication of either the feudal or communal orders. Adopting a multilevel socio-spatial perspective thus avoids the pitfalls of characterizing production strictly in terms of single dominant relations and instead emphasizes the structural complexities which fed into the spatial distribution of regional production profiles, here characterized by an intermixing of elements of agrarian communism, feudalism, and capitalism. This paper has offered a theoretical template with which to think through the spaces of ecological risk which became rapidly entrenched in pre-famine Ireland. The empirical task of probing the specific structural, productive, and demographic characteristics that differentiated these regions within Ireland is already underway, and it appears that these regional differences played a key role in determining the spatial distribution of distress as the famine took hold in 1845.⁸⁴ Furthermore, incorporating the dual informants of world system and metabolic rift has enabled us to look beyond the specifics of Irish locality, and to understand how the *general* characteristics of capitalization and marketization gave rise, across the globe, to similar patterns of coercive resource appropriation, and unique local modes of agricultural production. Ireland therefore remains a critical case for understanding the long-term historical dynamics of capitalism, the uneven incorporation of non-capitalistic societies within its boundaries, and the ecology of local production within these global structures and processes.

NOTES

- 1 Conrad M. Arensberg and Solon T. Kimball, *Family and Community in Ireland*, 2nd ed. (Cambridge, Massachusetts: Harvard University Press, 1968); E. Estyn Evans, “The Ecology of Peasant Life in Western Europe” in *Man’s Role in Changing the Face of the Earth*, ed. William L. Thomas, Jr. (Chicago, Illinois: University of Chicago Press, 1957), 217–239; Evans, *Irish Heritage: The Landscape, the People, and their Work* (Dundalk: Dundalgan Press, 1967); Evans, *The Personality of Ireland: Habitat, Heritage and History* (Belfast: Lilliput Press, 1976); Denis O’Hearn, *The Atlantic Economy: Britain, the U.S. and Ireland* (Manchester UK: Manchester University Press, 2001).
- 2 Kevin Anderson, “Marx’s Late Writings on Non-Western and Precapitalist Societies,” *Rethinking Marxism* 14 (2007): 84–96; Heather A. Brown, “Multilinearism, Contingency, and Resistance: Re-Evaluating Marx on Historical Development in Precapitalist Societies,” *New Political Science* 32 (2010): 345–366; David Norman-Smith, “Accumulation and the Clash of Cultures: Marx’s Ethnology in Context,” *Rethinking Marxism* 14 (2007): 73–83.

- 3 Eoin Flaherty, "Modes of Production, Metabolism, and Resilience: Toward a Framework for the Analysis of Complex Social-Ecological Systems" (PhD thesis, National University of Ireland Maynooth, 2013); Eamonn Slater and Eoin Flaherty, "Marx on Primitive Communism: The Irish Rundale Agrarian Commune, its Internal Dynamics and Metabolic Rift," *Irish Journal of Anthropology* 12 (2009): 5–34; Eamonn Slater and Terrence McDonough, "Colonialism, Feudalism and the Mode of Production in Nineteenth-Century Ireland" in *Was Ireland a colony? Economics, Politics and Culture in Nineteenth-Century Ireland*, ed. McDonough (Dublin: Irish Academic Press, 2005), 27–48.
- 4 Evan Fraser, "Social Vulnerability and Ecological Fragility: Building Bridges between Social and Natural Sciences Using the Irish Potato Famine as a Case Study," *Conservation Ecology* 7 (2003): 9–18; Peter Gibbon, "Colonialism and the great starvation in Ireland," *Race and Class* 17 (1975): 131–139; Ellen Hazelkorn, "Some Problems with Marx's Theory of Capitalist Penetration into Agriculture: The Case of Ireland," *Economy and Society* 10 (1981): 284–315; Hazelkorn, "Reconsidering Marx and Engels on Ireland," *Saothar* 7 (1983): 79–88.
- 5 John Bellamy Foster, "Marx's Theory of the Metabolic Rift: Classical Foundations for Environmental Sociology," *American Journal of Sociology* 105 (1999): 366–495; Foster, *Marx's Ecology: Materialism and Nature* (New York: Monthly Review Press, 1999); Jason Moore, "Environmental Crises and the Metabolic Rift in World-Historical Perspective," *Organization and Environment* 13 (2000): 123–157; Moore, "'The Modern World-System' as Environmental History? Ecology and the Rise of Capitalism," *Theory and Society* 32 (2003): 307–377; Moore, "Transcending the Metabolic Rift: A Theory of Crisis in Capitalist World-Ecology," *Journal of Peasant Studies* 38 (2011): 1–46.
- 6 Ted Benton, "Biology and Social Theory in the Environmental Debate" in *Social Theory and the Global Environment*, eds. Michael Redclift and Ted Benton (London: Routledge, 1994), 28–50; Benton, "Marxism and Natural Limits: An Ecological Critique and Reconstruction," in *The Greening of Marxism*, ed. Ted Benton (London: Guildford, 1996), 157–186; Peter Dickens, *Reconstructing Nature: Alienation, Emancipation and the Division of Labour* (London: Routledge, 2006); Riley E. Dunlap, "Paradigmatic Change in Social Science: From Human Exemptions to an Ecological Paradigm," *American Behavioural Scientist* 24 (1980): 5–14.
- 7 Rebecca Clausen and Brett Clark, "The Metabolic Rift and Marine Ecology: An Analysis of the Ocean Crisis Within Capitalist Production," *Organization and Environment* 18 (2005): 422–444; Richard York, "A Rift in Modernity? Assessing the Anthropogenic Sources of Global Climate Change with the STIRPAT Model," *International Journal of Sociology and Social Policy* 23 (2003): 31–51; Nathan McClintock, "Why Farm the City? Theorizing Urban Agriculture through a Lens of Metabolic Rift," *Journal of Regions, Economy and Society* 3 (2010): 191–207; Hannah Wittman, "Reworking the Metabolic Rift: *La Vía Campesina*, Agrarian Citizenship, and Food Sovereignty," *Journal of Peasant Studies* 36 (2009): 805–826.
- 8 Philip Mancus, "Nitrogen Fertilizer Dependency and Its Contradictions: A Theoretical Exploration of Social-Ecological Metabolism," *Rural Sociology* 72 (2007): 269–288; Joan Martinez-Alier, "Marxism, Social Metabolism and International Trade" in *Rethinking Environmental History: World System History and Global Environmental Change*, ed. Alf Hornborg, John R. McNeil and Joan Martinez-Alier (Lanham, Maryland: AltaMira Press, 2007), 221–237.
- 9 See note 5 above.
- 10 James Anderson, *An Enquiry into the Nature of the Corn-Laws with a view to the new Corn Bill proposed for Scotland* (Edinburgh: Mrs. Mundell, 1777); Foster, *Marx's Ecology*, 145.
- 11 Foster, "Marx's Theory of the Metabolic Rift," 375.
- 12 Ellen Meiksins Wood, "The Agrarian Origins of Capitalism" in *Hungry for Profit: The*

- Agribusiness Threat to Farmers, Food, and the Environment*, eds. Fred Magdoff and John Bellamy Foster (New York: Monthly Review Press, 2000), 23–42.
- 13 Karl Marx, *Capital: A Critique of Political Economy*, vol. 3, trans. David Fernbach (London: Pelican Books, 1981, [1894]), 949–50.
 - 14 Foster, “Marx’s Theory of the Metabolic Rift,” 384.
 - 15 Christine Kinealy, *This Great Calamity: The Irish Famine 1845-52* (Dublin: Gill and Macmillan, 2006), 4.
 - 16 Moore, “Environmental Crises and the Metabolic Rift.”
 - 17 *Ibid.*, 127
 - 18 David Harvey, *The Limits to Capital* (Oxford: Blackwell, 1982); Kozo Mayumi, “Temporary Emancipation From Land: From the Industrial Revolution to the Present Time,” *Ecological Economics* 4 (1991): 35–56; Moore, “Transcending the metabolic rift.”
 - 19 Isaac Ilyich Rubin, *A History of Economic Thought* (London: Ink Links Ltd, 1979 [1929]).
 - 20 Hazelkorn, “Some problems;” Hazelkorn, “Reconsidering Marx and Engels on Ireland.”
 - 21 Hazelkorn, “Reconsidering Marx and Engels on Ireland,” 80–1.
 - 22 *Ibid.*
 - 23 *The Act of Union (Ireland)*, 1800, 40 Geo. 3, c. 3; Chandana Mathur and Dermot Dix, “The Irish Question in Karl Marx’s and Friedrich Engels’s Writings on Capitalism and Empire” in *Social Thought on Ireland in the Nineteenth Century*, ed. Seamas O’ Siocháin (Dublin: UCD Press, 2009), 97–101.
 - 24 Mathur and Dix, “The Irish Question,” 99.
 - 25 Slater and McDonough, “Colonialism, feudalism and the mode of production,” 29.
 - 26 *Ibid.*, 30.
 - 27 Raymond D. Crotty, *Irish Agricultural Production: Its Volume and Structure* (Cork University Press, 1966), 294.
 - 28 John C. W. Wylie, *Irish Land Law* (London: Professional Books, 1975), 24.
 - 29 Kevin O’ Neill, *Family and Farm in Pre-Famine Ireland: The Parish of Killashandra* (Madison, Wisconsin: University of Wisconsin Press, 1984); Slater and McDonough, “Marx on Nineteenth-Century Colonial Ireland: Analysing Colonialism as a Dynamic Social Process,” *Irish Historical Studies* XXXVI (2008): 153–172.
 - 30 Crotty, *Irish Agricultural Production*, 43–4.
 - 31 Ellen Meiksins Wood, *The Origin of Capitalism* (London: Verso, 2002).
 - 32 *Ibid.*, 97.
 - 33 *Ibid.*, 154.
 - 34 *Ibid.*, 155.
 - 35 Kenneth H. Connell, “The History of the Potato,” *The Economic History Review* 3 (1951): 388–95; Louis Cullen, “Irish History without the Potato,” *Past and Present* 40 (1968): 72–83.
 - 36 Evans, “Some Survivals of the Irish Openfield System,” *Geography* 24 (1939): 24–36; Desmond McCourt, “The Dynamic Quality of Irish Rural Settlement” in *Man and His Habitat: Essays Presented to Emyr Estyn Evans*, eds. Ronald H. Buchanan, Emrys Jones and Desmond McCourt (London: Routledge), 126–164.
 - 37 McCourt, “The Rundale System in Donegal: Its Distribution and Decline,” *Donegal Annual* 3 (1955): 47–60.
 - 38 *Ibid.*
 - 39 *Devon Commission. Appendix to minutes of evidence taken before Her Majesty’s Commissioners of Inquiry into the state of law and practice in respect to the occupation of land in Ireland. Part IV. 1845 [672] [673] xxii, Appendix 94, 280–282.*
 - 40 Desmond McCabe, “Law, Conflict and Social Order in County Mayo 1820-1845” (PhD

- thesis, University College Dublin, 1991); Flaherty, "Modes of Production, Metabolism, and Resilience."
- 41 McCourt, "The Dynamic Quality of Irish Rural Settlement."
 - 42 James Anderson, "Rundale, Rural Economy and Agrarian Revolution: Tirhugh 1715-1855" in *Donegal History and Society: Interdisciplinary Essays on the History of an Irish County*, eds. William Nolan, Liam Ronayne, and Mairead Dunlevy (Dublin: Geography Publications, 1995), 447-69.
 - 43 Wylie, *Irish Land Law*, 7-8.
 - 44 McCabe, "Law, Conflict and Social Order."
 - 45 Kinealy, *A New History of Ireland* (Stroud UK: Sutton Publishing, 2004), 82; Wylie, *Irish Land Law*, 19.
 - 46 Fergus Kelly, *A Guide to Early Irish Land Law* (Dublin: Dublin Institute for Advanced Studies, 1988).
 - 47 *Ibid.*, 13.
 - 48 Kelly, *A Guide to Early Irish Land Law*, 430; John Davies, "Of the Lawes of Ireland" (London, 1609/10). Corpus of Electronic Texts, University College Cork, <http://www.ucc.ie/celt/online/E610001/text002.html> (accessed September 6 2013).
 - 49 Daniel Coghlan, *The Ancient Land Tenures of Ireland* (Dublin: Browne and Nolan, 1933).
 - 50 Kelly, *Early Irish Farming* (Dublin: Dublin Institute for Advanced Studies, 1997).
 - 51 McCourt, "Infield and Outfield in Ireland," *Economic History Review* 7 (1955): 373-5.
 - 52 Henry Morris, Seamus Ó Duilearga, and Domhnall Ó Cearbhaill, "Varia: Reliques of the Brehon Laws and other Ancients Usages in Ulster," *Bealoidis* 9 (1939): 290
 - 53 Friedrich Engels, *The Origin of the Family, Private Property and the State in Connection with the Researches of Lewis H. Morgan* ([1884] Peking: Foreign Languages Press, 1978).
 - 54 Henry Piers, *A Chorographical Description of the County of West-Meath* ([1682] Dublin: Luke White, 1981).
 - 55 Peter Knight, *Erris in the Irish Highlands and the Atlantic Railway* (Dublin: M. Keene, 1836), 46-7.
 - 56 *Ibid.*
 - 57 *Ibid.*
 - 58 Kenneth Nicholls, *Gaelic and Gaelicized Ireland in the Middle Ages* (Dublin: Lilliput Press, 2003), 50.
 - 59 Frederick Waymouth Gibbs, *English Law and Irish Tenure* (London: Ridgway, 1870), 14.
 - 60 Wylie, *Irish Land Law*.
 - 61 Crotty, *Irish Agricultural Production*, 43-4.
 - 62 *Ibid.*, 293.
 - 63 Eamonn Slater, "A Contribution to a Critique of the Idealisation of Irish Agricultural Development, 1847-1882" (PhD thesis, Trinity College Dublin, 1988).
 - 64 Seamus Mac Aoidh, "Nixon: A Tyrant Landlord," *Donegal Annual* 42 (1990): 45-8; Brendan Mac Cnámhsí, "North-West Donegal After the Great Famine," *Donegal Annual* 9 (1970): 178-202.
 - 65 Slater and McDonough, "Colonialism, feudalism and the mode of production."
 - 66 Alf Hornborg, "Footprints in the Cotton Fields: The Industrial Revolution as Time-Space Appropriation and Environmental Load Displacement" in *Rethinking Environmental History: World System History and Global Environmental Change*, eds. Alf Hornborg, John R. McNeill, and Joan Martinez-Alier (Lanham: Altamira Press, 2007), 259-272.
 - 67 Moore, "The Modern World-System," 342.
 - 68 Data on cash-cropping from *Devon Commission*, note 39 above. Figures for corn cultivation

- are taken from: *Returns of Agricultural Produce in Ireland, in the Year 1847*. 1847-48 [923], viii-ix
- 69 Kevin Whelan, *New Survey of Clare Island* (Dublin: Royal Irish Academy, 1999).
- 70 *Further Returns relating to the Importation and Exportation of Corn, Foreign and Colonial; Of the Quantities of Grain of each Kind, distinguishing British, Scotch, Irish and Foreign, Imported into the Port of London, in Each Year, from 1820 to 1841*. 1842 [18-1] xl, 59. Original quarter-weight units converted to metric tons for interpretation (2 stone = 1 quarter; 1 quarter = 12.7kg; 1000kg = 1 metric ton).
- 71 Gibbon, "Colonialism and the Great Starvation," 132.
- 72 *Further returns relating to the importation and exportation of corn, foreign and colonial; Of the Quantities of Grain of each Kind, distinguishing British, Scotch, Irish and Foreign, Imported into the Port of London, in each year, from 1820 to 1841*. 1842 [18-1] xl, 60.
- 73 Crotty, *Irish Agricultural Production*, 276-9.
- 74 Raymond Gillespie, "Explorers, Exploiters and Entrepreneurs, 1500-1700" in *An Historical Geography of Ireland*, ed. Brian Graham and Lindsay Proudfoot (London: Academic Press, 1993), 137.
- 75 *Ibid.*, 138.
- 76 John Hooper, "The Yields of Irish Tillage Food Crops Since the Year 1847," *Department of Agriculture and Technical Instruction for Ireland Journal XXI* (1922): 215.
- 77 Tom Yager, "Mass Eviction in the Mullet Peninsula During and After the Great Famine," *Irish Economic and Social History* 23 (1996): 26.
- 78 Leslie. A. Clarkson, "Irish Population Revisited, 1687-1821" in *Irish Population, Economy and Society: Essays in Honour of the late K. H. Connell*, eds. John . M. Goldstrom and Leslie. A. Clarkson (Oxford UK: Clarendon Press, 1981), 31.
- 79 Connell, "History of the Potato," 390-1.
- 80 Gibbon, "Colonialism and the Great Starvation in Ireland 1845-9," 136.
- 81 Eric Almquist, "Mayo and Beyond: Land, Domestic Industry and Rural Transformation in the Irish West" (PhD thesis, Boston University, 1977).
- 82 Slater and Flaherty, "Marx on Primitive Communism," 29.
- 83 Evan Fraser. "Food system vulnerability: Using past famines to help understand how food systems may adapt to climate change," *Ecological Complexity* 3 (2006): 328-335.
- 84 Flaherty, "The Macro-Context of Communalism in Nineteenth Century Ireland: Toward a Typology of Social-Ecological Complexity," (NIRSA Working Paper No. 72, 2013).