

The regional dimension of national education in pre-Famine Ireland

Kevin Loughheed*

Geography Department, Trinity College, Dublin, Ireland

The establishment of the National Education System in 1831 provided Ireland with a non-denominational education system aimed at reducing sectarian distrust and uniting the population. The national system was one element in the wider emergence of an institutional landscape in nineteenth century Ireland. The system involved a central-local management structure with the Commissioners of National Education having tight central control of an overall system but relied on local impetus to apply for, establish, and operate individual schools. As a result of this interaction, the emergence of national education was dependent on activities of various individuals and groups in Irish society, most notably the hierarchies of the various Churches. This paper examines the geographic aspects of the emergence of national education in the landscape of pre-Famine Ireland. The emergence of the system occurred in four distinct phases, with the activities of different groups affecting the uptake of national education. The distribution of national schools across the country is examined through thematic mapping, which identifies the development of distinct areas of high national-school densities and other areas of relative non-adoption. The pattern of national education in pre-Famine Ireland can be highly generalised by a line running from Sheephaven Bay in Donegal to Waterford Harbour, with the areas east of this line exhibiting high rates of national-school establishment, and areas to the west experiencing low national-school establishment. Spatial analysis is used to detect clusters of densities and provides further evidence of the spatial nature of national education. The spatial analysis is combined with the thematic mapping and discussion to produce a general regional map of the emergence of national education in pre-Famine Ireland. The regional map illustrates the role that social interactions played in the spatial emergence of institutions of the British state in nineteenth century Ireland.

Keywords: National education, nineteenth century, historical geography, regional studies, spatial analysis

Introduction

The Irish national education system was first introduced by the British administration in 1831. From controversial beginnings, the national system quickly became one of the dominant forms of elementary education in the country, emerging as a significant element in the Irish landscape. The Act of Union, which transferred political power from Dublin to London, resulted in significant changes in both Irish society and the Irish landscape. Many have argued that the union was not that of equals, and as a result actually intensified imperial control instead of

* Email: lougheed@tcd.ie

abating it (Kenny 2004). One of the changes that the transfer of power brought about was the emergence of centrally administered institutions in the landscape of nineteenth century Ireland, which included national education. This has led some scholars to state that the 'tentacles of the British Empire were stretching deep into the remote corners of the Irish countryside, bearing with them schools, barracks, dispensaries, post offices, and all other paraphernalia of... state' (Whelan 1983, p. 9). The emerging landscape also involved the building of institutions related to the Catholic Church, facilitated by the gradual reduction of the penal laws and eventual emancipation in 1829. This institutional landscape, both state and religious, has been studied in the Irish context with scholars often paying attention to the significant role of the national education system (Jones-Hughes 1981, Whelan 1983, Hennessy 2013).

In the early years, there were very few regulations regarding the nature and location of national schools. The only rule, which was not strictly enforced, was that a national school could not be established within three miles of another. Combined with the transfer of other schools to the national system, including hedge schools, this resulted in a vast range of national school types and sizes which were often established at the edge of villages and towns, mirroring the emergence of other state and church institutions as part of the nineteenth century 'governmental and ecclesiastical fringe-belt' (Hennessy 2013, Loughheed 2014). National schools were also established in more rural locations, such as alongside small Catholic chapels and in remote areas, including small islands off the west coast. In this way, national schools 'symbolise the transformation of the state from an abstract set of power relationships into a physical entity' witnessed in the Irish landscape (Loughheed 2012, p. 8).

This paper adds to the body of knowledge on institutional landscapes in nineteenth century Ireland by examining the spatial dimension of national education. A significant amount of research has been conducted on the emergence of national education in Ireland from a historical perspective (Atkinson 1969, Akenson 1970, Coolahan 1981, Daly and Dickson 1990). The previous research extensively covers the structure of the system, the politics surrounding its creation, the reactions of various groups, and the impact of the system in Irish society. However, very little research has been undertaken on the geography of the system. This paper maps the emergence of national education in pre-Famine Ireland using information contained in the annual reports of the Commissioners of National Education. The resulting patterns of national-school distribution are examined and illustrate that the system emerged in four distinct phases, occurring from 1831–35, 1836–38, 1839–42, and 1843 onwards. The interactions of various players are discussed as they greatly influenced the emerging geography of the system during these phases. When combined with spatial analysis of the geography of national schools, this paper produces a distinctly regional view of the emergence of national education in pre-Famine Ireland. These discussions are framed within the concepts of regions in Irish historical geography, which see regions as the result of social processes and interactions. This suggests that national education emerged

with a distinct regional pattern, influenced by the interactions of different groups connected to the system. While this paper examines the emerging regional pattern of national education, and discusses the broader context of that emergence, local examinations of these regions are not discussed in detail. Studies elsewhere have examined local activities and the geography of national education and suggest that ‘the interplay between the governmental rationale [of national education], the strategy of state agents, and wider social networks was central’ to the geography of national education (Lougheed 2014, p. 88).

The emergence of national education

When national education was introduced it was not a new idea in Ireland, as a system of education had first been proposed in the Irish parliament as early as 1787 by Thomas Orde (Orde 1787). Subsequent parliamentary inquiries on Irish education, most notably in 1812 and 1824, outlined the need for educational reform and recommended the creation of a central authority to control an elementary system of education funded by the state (*Reports from the Commissioners of the Board of Education* 1813, *Irish Education Inquiry* 1825). The central aim of any reform was the creation of a non-denominational system where children of all creeds could be taught in the same classroom in an effort to reduce sectarian sentiment in the country. This would be ‘a system of united education from which suspicion should, if possible, be banished, and the cause of distrust and jealousy be effectively removed’ (*Irish Education Inquiry* 1825, p. 91).

A more concise report, published in 1828, combined the recommendations of the various inquiries and proposed a structure for the new system (*Report from the Select Committee on Education in Ireland* 1828). The plan centred on the creation of a multidenominational central board to control funds, the curriculum, teacher training, the regulations for schools and a system of inspection. The plan also emphasised a major role for local management of schools, thus introducing a dual system of management with tight central control of an overall system of education which relied on local impetus to apply for, establish, and operate individual schools. The central administration tasked with the establishment of the new system, called the Commissioners of National Education, was established at the end of 1831 following a letter sent from the Chief Secretary of Ireland, Edward Stanley, to the Duke of Leinster (Hyland and Milne 1987). Stanley’s letter emphasised the important role of local affiliates, stating that the system must ‘depend upon the cooperation of the resident clergy’ of different creeds (*Copy of a letter from the Chief Secretary of Ireland* 1831, p. 2). The Commissioners ensured this by creating a grading system for applications, such that first-class applications were those signed by clergymen of different faith, while second-class applications were signed by a clergyman of one faith and laity from another. To establish a national school, or to transfer a school from another system such as hedge schools, the applicant therefore needed the cooperation of clergymen of different faith. As discussed elsewhere, this can be viewed as an attempt by the British administration ‘to place different local actors in a unified system that promoted unity and thus

secure governance' (Loughheed 2014, p. 75). The dual-management system created a complicated network of actors involved in the establishment and management of national schools which opened the system to a variety of influences on many scales. This would greatly impact on the emergence of the system on a national scale, especially with the influence of the hierarchies of the various Churches in Ireland who interacted with the central administration of the system and also influenced the activities of the local clergy and laity.

The Commissioners of National Education began accepting applications for aid in 1832 and by the start of 1834 had received 1,548 applications for assistance and granted aid to 789 schools that were in operation. Within two years, the national education system was therefore supplying education to 107,042 children, enabling the Commissioners to claim that the system had been 'gratefully received and approved by the general public' (*First report of the Commissioner of National Education* 1834, p. 2). Over the next decade, the national education system continued to increase and by the beginning of the Famine had succeeded in becoming one of the dominant providers of education in Ireland with close to 3,500 national schools supplying education to over 430,000 children (*Twelfth report of the Commissioners of National Education* 1846). The emergence of national education, from when the first school was established in early 1832 until the onset of famine in 1845, can be divided into four distinct phases (Figure 1).

The first phase (1831-5) showed a rapid increase in the number of national schools over the first three years, with 789 schools connected to the system by the start of 1834. This increased by forty percent in the next year to give a total of 1,106 schools connected to the system by the beginning of 1835. The initial attainment can be attributed to a push by the Commissioners to achieve a high level of early success, as well as a significant transfer of schools from the Kildare Place Society and other educational societies concerned with the continuation of their funds under the new system, as well as hedge schools that wanted to access state resources. The state, therefore, had rapidly emerged as a strong player in the field of Irish education due to the ability to use the central financial machinery to organise and colonise other educational institutions, enabling it to provide educational facilities without having to build them itself (Archer 1984).

The second phase of national-school establishment (1836-8) showed a drastic reduction in the rate of establishment over a three-year period. The average increase dropped to ninety-three schools per year, which equated to an average annual increase of less than eight percent. National-school establishment fell for several reasons. One of the reasons may be that the significant number of schools that transferred to the system in the initial years had lessened over time. However, if this was the only reason for the reduction it might be expected to reduce at a more gradual rate. Another reason for the dramatic reduction of national schools established was that the Commissioners shifted their attention away from school establishment to other issues, which included the building of the model school in

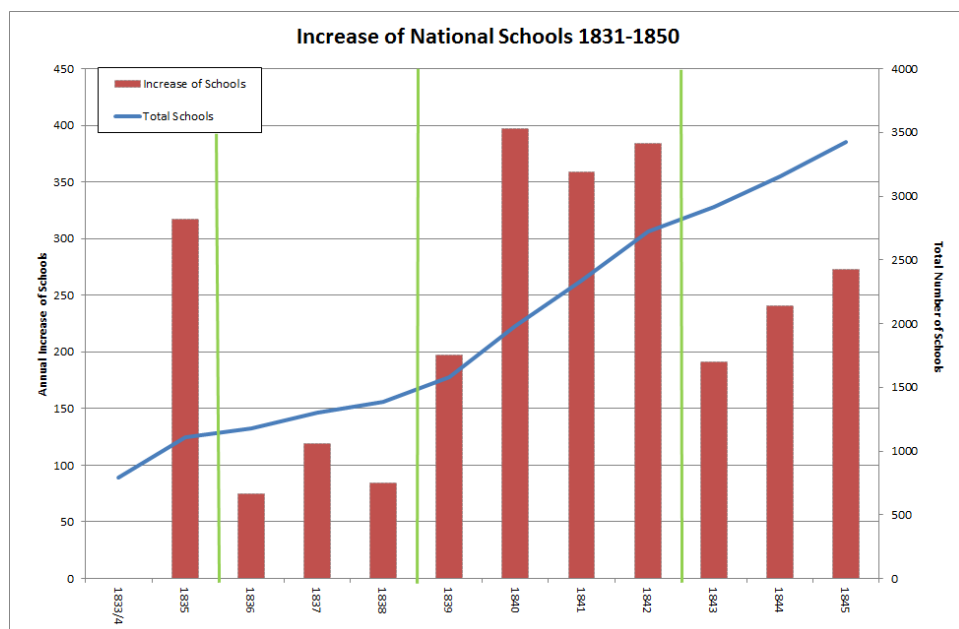


Figure 1. Total number of national schools, 1831–45 (note: period boundaries marked as vertical lines) (Source: Commissioner of National Education 1851)

Marlborough Street and the production of text-books and other publications. The Commissioners also complained of the lack of funds for salaries to attract teachers, as they were ‘by no means sufficient to induce persons possessing the requisite qualifications for teachers to devote themselves to our schools’ (*Third report of the Commissioners of National Education* 1836, p. 3). Another explanation for the reduction in the rate was the heavy criticism arising from influential individuals, both within and outside of Ireland, which may have affected the attitudes of those interested in establishing a national school. Many individuals and groups who strongly opposed the system did so due to the lack of religious teaching and the encroachment of the state into educational matters which were previously the domain of religious bodies. The reactions of the hierarchy of the various denominations in Ireland were the strongest, especially the Church of Ireland, and the influence of the Archbishops would greatly affect the spread of national education throughout the country (Lougheed 2014).

One of these influential groups was the Synod of Ulster, which was the largest congregation of Presbyterians in the country. The Synod communicated with the Commissioners in the early years of the system in the hope of changing the regulations of the national system, especially around the restrictions on using the bible as a textbook. These views were heavily influenced by the evangelical party within the Synod headed by Rev. Dr Henry Cooke (Akenson 1970). However, it soon became apparent that one of the main issues for the Synod was the regulation requiring cooperation between clergymen, with the Synod asking the

Commissioners to allow for applications from their ministers on their own. The Commissioners were unwilling to change the regulations and correspondence became more hostile. In February 1834, the Commissioners decided to 'decline further correspondence on the subject' (*First report of the Commissioners of Public Instruction* 1835, p. 37). The Synod therefore strongly opposed the system in this period, resulting in the creation of a separate system of education (*Freeman's Journal*, 5 July 1834). There was also criticism of the system from outside of the country, exemplified by the Anglican Bishop of Exeter, Henry Philpotts, who addressed his grievances in a speech to the House of Lords, which was later circulated as a pamphlet. The Bishop condemned the national system on several accounts, most notably on the grounds of the lack of religious instruction to teachers in the Model School, which he claimed made the system 'not only defective but positively vicious' (*Freeman's Journal*, 2 August 1836). Despite the opposition and low rate of school establishment, by 1838 a total of 1,384 national schools were in operation, providing education to 169,548 children. The Commissioners restated that this progress demonstrated the success of the state system of education, claiming that 'centuries have elapsed since the State first attempted to provide education for the poor of Ireland; but its efforts were failures... until the present national system was established' (*Fifth report of the Commissioners of National Education* 1838, p. 8).

The third phase of national-school establishment (1839-42) saw a dramatic rise in the establishment of national schools. In 1839, close to 200 schools were established, which increased the total number of schools in the system by over fourteen percent. The rate of establishment rose significantly in the years 1840-42, with an average of 380 schools established per year. This three-year period saw the highest increases since the first year of the system, with an average annual increase of nearly twenty percent over the three years. The increase was reflected in the greater number of children attending national schools, which rose by an average of 31,614 children per year from 1839 to 1845 (*Seventeenth report of the Commissioners of National Education* 1851). A significant element that contributed to the increase was the eventual endorsement of the system by the Synod of Ulster. This followed negotiations that reopened in 1838, encouraged by Parliament, and resulted in changes to the regulations of the system (*Belfast Newsletter*, 20 March 1840). The endorsement of the system by the Synod resulted in a vast increase in Presbyterian applications to the Commissioners, which accounted for a quarter of all applications in 1839-40 (*Seventh report of the Commissioners of National Education* 1841). Another factor was the enlarged grant the Commissioners received for salaries, rising from £9,220 in 1835 to £24,944 in 1841. This encouraged teachers and other local actors to establish or transfer schools to the Commissioners (*Eight report of the Commissioners of National Education* 1842).

While there was a high degree of national-school establishment, the period also saw increased opposition to the system from certain quarters, most notably the Roman Catholic Archbishop of Tuam John McHale who took exception to what he perceived as prejudices of the Commissioners in not providing grants

to his archdiocese. McHale attempted to devalue the national education system in his archdiocese through a process of 'restriction' which involved removing facilities controlled by the state and preventing it from supplying its resources in his area of influence (Archer 1984). To do this, McHale encouraged the local Catholic clergy who were national school patrons to withdraw their school from any connection with the board (*Seventh report of the Commissioners of National Education* 1841). A lack of sufficient funds for these schools, however, resulted in all of them being re-attached to the national system at a later date.

The final phase of national-school establishment (1843-5) saw a stabilisation in the rate of establishment, with an average of 228 schools established per year, which equated to an average annual increase of seven per cent. The Commissioners felt a strain on their funds in the period and, to maintain this rate, requested an increase in their grant in 1843 which they received two years later (*Ninth report of the Commissioners of National Education* 1843). The Anglican Church came to the fore in the opposition to the national system during this period. The opposition of the Church of Ireland came from the regulations forbidding the use of the bible as a textbook, as well as opposing the constitution of the Commissioners with a Catholic Archbishop having any influence over the system (Coolahan 1981). The ongoing opposition resulted in the establishment of the Church Education Society of Ireland, which set up a separate Anglican education system in Ireland in an attempt by the Anglican Church in Ireland to lessen the emerging dominance of the national education system (Archer 1984). The Commissioners responded strongly to the opposition claiming that 'the national system is a principle of freedom... whereas the system of the [Church Education Society] committee is a system of compulsion' (*Ninth report of the Commissioners of National Education* 1843, p. 5). As this synopsis suggests, the activities and interactions of the various groups and individuals greatly impacted the emergence of national education in Ireland, not only in terms of the rate at which the system grew, but also in terms of the spatial emergence of national education in the landscape.

Regions and Irish Historical Geography

In order to frame discussions of the spatial emergence of national education in the context of social interactions, it may be useful to briefly examine how studies of the institutional landscape and regionalism in Ireland have been conducted in the past. Regions can be described as discrete units of space that 'define distinct clusters of human-physical phenomenon or as maximising the differences between areas in relation to one or more phenomena' (Agnew 1996, p. 366). So the geographical understanding of regions is served by drawing boundaries to identify areas in terms of criteria of difference. Traditional regionalism was concerned with the description of the different elements of the landscape. The method employed was to define the boundaries within the landscape and establish differences between bounded areas, taking the natural environment as its base and working up to human features with little attempt to interlink different human and social features

(Massey 1984). Regions were reduced to physical objects and were the focus of purely scientific explanation, description, and empirical examination (Soja 1989). Early pre-Famine studies of regions often focused on setting definitive boundaries of regions with distinctive traits, based on the importance of physical features and forms of agriculture. These early regional studies focused on physical elements such as geology and gradually moved 'upwards' to politics and culture, often examining regions as separate entities that had limited linkages. Freeman's regional studies of Ireland provide an early example of this approach (Freeman 1965). In these, he delineated complex and definitive regions and sub-regions based on the importance of the physical landscape and vegetation, which he stated led to the difference in land-use (see Figure 2). The traditional approach viewed regional change as an automatic process of adaption and evolution over time. While the concept of physio-geographic regions became the accepted understanding of geographic variations in Ireland at the time, it came under criticism for its descriptive nature and environmental determinism, as well as its treatment of the spatial organisation of society as socially inert (Soja 1989, Agnew 1996).

Irish regionalism began to shift as historical considerations were recognised as overriding physical factors in determining regional orientations. The work of scholars such as Jones-Hughes, Whelan, and Smyth resulted in Irish regionalism being interpreted not only in terms of the nature of the landscape, but also through the differences arising out of social structures viewed through a historical perspective (Jones-Hughes 1963). This realisation, combined with an increasing interest in the role of social processes, led to a shift in focus with more attention given to the regional characteristics of such elements as labour processes, production systems, class structures, and forms of cultural and political expression (Butlin 1993). A key element in this shift in regional studies was the importance of scale. Different societies not only produce space, but they also produce scale. It has been suggested that the production of scale is a social process that may be central in the differentiation of geographical space (Smith 1992). The variation of social processes that create spatial differentiation can therefore also be analysed from one scale to another, which allows for the interpretation of the region as a product of the interconnectedness of different scales (Gilbert 1988). While this paper examines the geography of national education on a national scale, the influence of scale in regards to national education has been examined in more detail elsewhere (Loughheed 2014).

As a result of this new approach, previous regional studies of pre-Famine Ireland were revisited and re-evaluated, with some being expanded upon. In studies on pre-Famine economy, the two economic regions model was revised to show the complex interconnectedness of these regions. This was furthered when it was demonstrated that, as Ireland was opening up to external influences, the adoption of new attitudes and innovations resulted in constant shifts in regional differences (Johnson 1970). The 'two' Irelands model was shown to be far too simplistic and, if it existed at all, it was in a vertical/social character and not horizontal/spatial stratification (Whelan 2000). The shift to the examination of

social relations and processes in Irish regionalism resulted in the claim that scholars were attempting to ‘socialise and thereby revolutionise the Irish past,’ (Andrews 1988, p. 11) and is exemplified by regional studies on settlement and society in the eighteenth and early nineteenth century by Kevin Whelan (2000, see Figure 2). This provided a framework for the study of regional differentiation in Ireland as a series of interlocking archetypes based on economic, social, and settlement criteria. Whelan identified regional archetypes that did not possess definitive boundaries and were not continuous and thus should be considered as ‘reified abstractions’ that serve as a general regionalism of pre-Famine Ireland (Whelan 2000, p. 201). Other studies in the variations in landholdings and their relationship to the economic areas have also illustrated that regions in Ireland should be considered in terms of ‘zones of loyalties’ without outlining definitive boundaries (Jones-Hughes 1963). The geographic studies of Jones-Hughes and Smyth are important as they also highlight the power of using maps to describe spatial strategies in power structures (Kearns *et al.* 2008). This paper is therefore highly influenced by these works as it examines the geography of national schools in the context of the changing social processes and interactions brought about by the introduction of a state administered system of education.

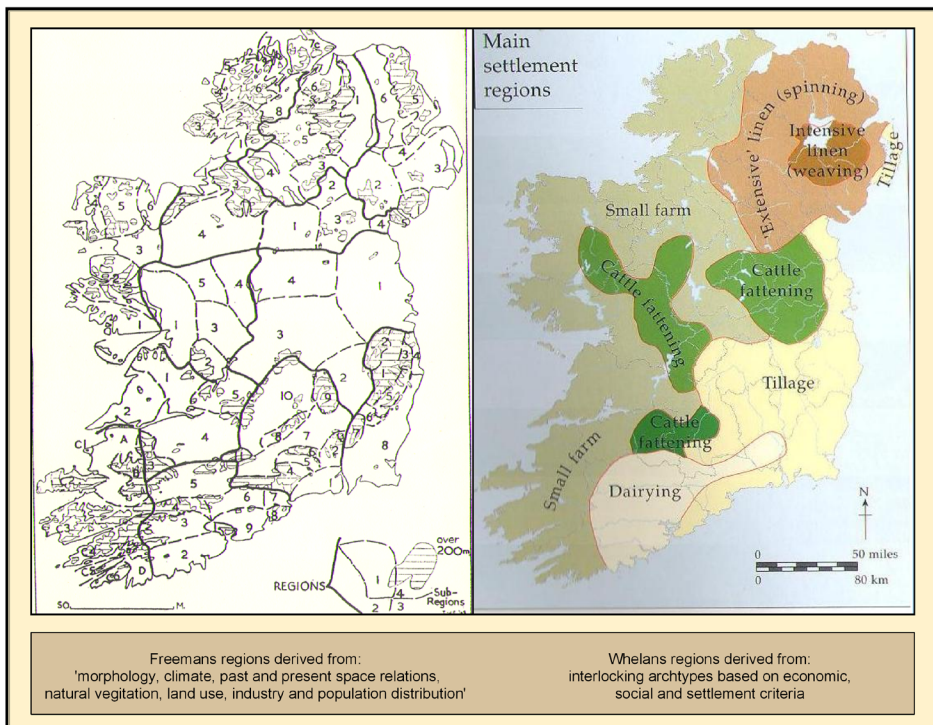


Figure 2. Different approaches to delineating Irish regions (Sources: Freeman 1965, Whelan 2000)

Geography of national education

The question then arises of how exactly did national education emerge in the landscape. In particular, was there any pattern to the distribution of national schools and, if so, was there a distinct regional dimension to the geography of the system? To examine the emerging geography of national education in pre-Famine Ireland the distribution of national schools needs to be identified over the time period. To do this, the number of national schools per 10,000 capita in each barony was mapped for the phases of establishment identified above.

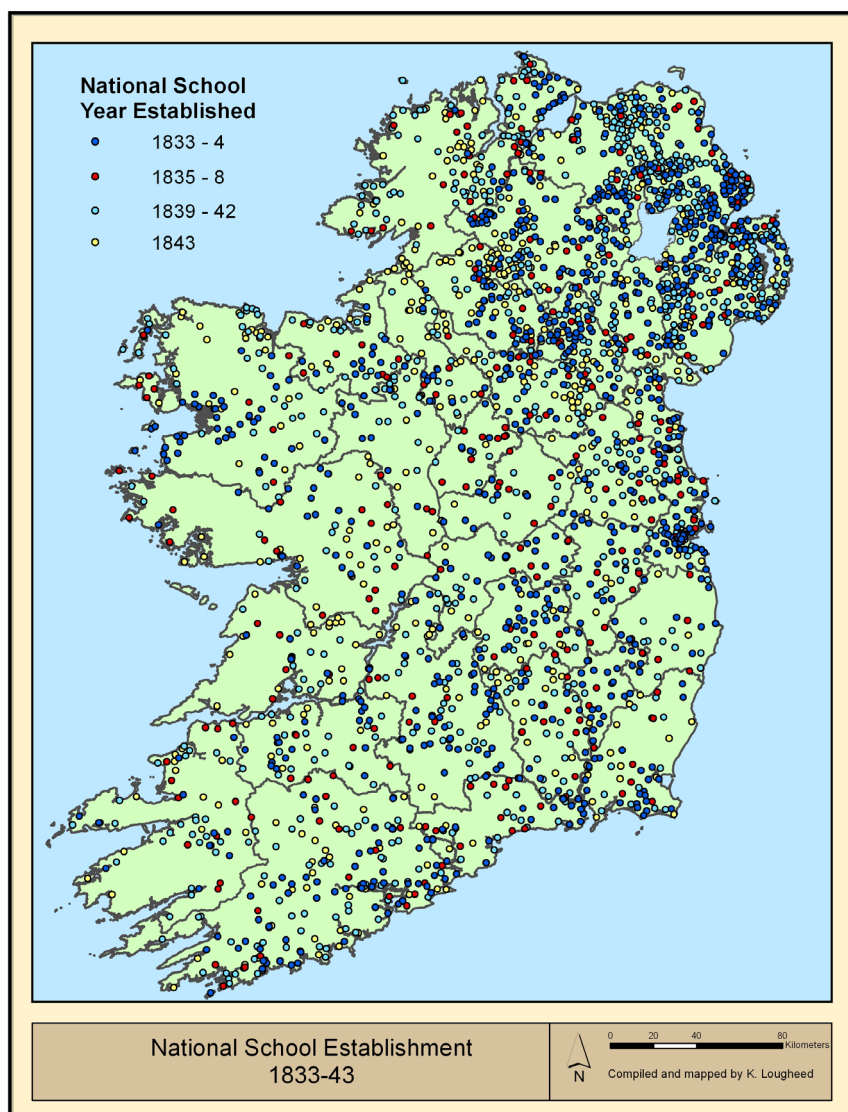


Figure 3. National school locations, 1833–43 (Source: Loughheed 2014)

The information about school locations was taken from the annual reports of the Commissioners of National Education, each of which contained an appendix, which listed every national school in operation that year. The information was used to locate national schools in the pre-Famine period in Ireland, see Figure 3. To examine the distributions of schools, the data was aggregated into geographic units. To avoid the problem of larger geographical units naturally containing higher numbers of schools, densities by population was chosen as the unit to study the geography of national education. Baronies were chosen as the geographical unit as national-school data could then be combined with information contained in the 1831 census to examine national school density per 10,000 capita over the time period. It should be noted again that this paper seeks to identify patterns at a national level and briefly draw out broad conclusions on the possible factors influencing these patterns, and as such does not look in detail at local factors. Lougheed (2014) has examined local factors influencing various patterns of national education distribution, most notably the interactions between the local clergy and the rationale of the state in the east Ulster area.

It was seen that the initial period of the national education system experienced a high uptake of national schools, with 1,106 schools established by the start of 1835. As there was very little regulation regarding the size and location of national schools there was a vast range in the type and form they took. As a result, school sizes were highly variable with the smallest having an attendance of 19 students and the largest having 731 students, with the average being 131 in 1835 (*Second report of the Commissioners of National Education* 1835). The distribution of national schools per 10,000 capita at a barony level is shown in Figure 4(b), with darker shades indicating higher densities of schools. High densities occurred in east Ulster and were localised to a relatively small area that stretched along the east coast area of Down and Antrim, north to Glenarm in the Glens of Antrim. The baronies in this region all contained over 2 schools per 10,000 capita, with those around Belfast and Carrickfergus containing between 6.5 and 9.5 schools per 10,000 capita, all which were above the national average of 1.6 schools per 10,000 capita. This area of high density was possibly the result of the interactions of local clergymen. It was seen that Presbyterian ministers were cooperating with Catholic priests to transfer Presbyterian schools to the national system, while also establishing new national schools under the patronage of the Catholic clergymen (Lougheed 2014). The Presbyterian ministers involved in national school establishment in the area were not members of the Synod of Ulster but were members of other congregations such as the Presbytery of Antrim (*Report on the new plan of education in Ireland* 1837). This activity was also encouraged by the Catholic bishop in the area, William Crolly, who actively withdrew children from other schools and transferred them to national schools that he helped establish (*Belfast Newsletter*; 2 March 1832). The activity that led to the high density of schools in this area is illustrative of how the social interactions across the various scales (with local individuals, influenced by regional actors, interacting with the state rationale of encouraging cooperation) resulted in the establishment of a

significant number of national schools.

The urban area of Belfast City had a relatively small number of schools, equating to 0.5 schools per 10,000 capita, suggesting that different processes were occurring in the urban centres. Central Ulster also had relatively high national-school densities as most of the baronies had over 2 schools per 10,000 capita. North Monaghan and eastern Fermanagh showed higher densities of up to 3.9 schools per 10,000 capita. The rest of the northern areas of the country had close to the average densities, except for the low densities contained in Armagh and the west coast area of Donegal which had densities lower than 1.5 national schools per 10,000 capita. Inishowen was an outlier in the region of low densities, with a density of 3.6 schools per 10,000 capita in 1835. The high density in Inishowen was the result of cooperation between local Anglican and Catholic clergy. This was facilitated by the fact that the Anglican diocese of Derry and Raphoe was the only one in the country that initially supported the national system as there was a need of funds for schools in the area, and thus encouraged the local clergy to join (*Report on the new plan of education in Ireland 1837*). Of the eighteen national schools established in the peninsula by 1835, sixteen were established with the involvement of Anglican clergymen. This illustrates once again the social interactions across scales that resulted in the establishment of national education.

Another area of high national-school densities emerged in north Dublin and southern Meath. The majority of baronies in the area had high densities of above 4.5 schools per 10,000 capita. This area included two of the baronies in the highest four in the country, with Newcastle and Castleknock having above 9 schools per 10,000 capita. While there were a relatively large number of national schools in Dublin City, when the large population of the urban area is taken into account it is seen that it had a low density of less than one national school per 10,000 capita. The area of central Leinster that stretched from west Kildare through east Laois and into Carlow had relatively high densities that were above the national average of 1.6 schools per 10,000 capita. There was a zone of relative low densities on the east coast of Leinster, with baronies in the south of Wicklow and north Wexford having densities lower than one national school per 10,000 capita, with three baronies having no national school.

The southern zone of the country that arched from south Wexford, across south Tipperary, and into south Cork showed a mix of densities around the average. Some baronies close to urban centres had slightly higher densities, such as the baronies close to Waterford city and Wexford town. The zone coincided closely with the old established Catholic big farm heartland, identified by Whelan (1988), which occurred from Waterford Harbour through to Limerick. Educationally, this manifested itself with the diffusion of Catholic orders and their educational institutions across the region, such as the Christian Brothers who originated in Waterford and the Presentation Sisters who originated in Cork (Loughheed 2014). It may be suggested that this activity accounted for the mix of densities in the area, as there was competition between various education systems to establish schools. A large zone of low national-school densities stretched throughout the western

area of the country and included the midlands, arching from the south of Donegal through Longford and Westmeath to Clare. Nearly all the baronies in this zone had fewer than two schools per 10,000 capita, with a large proportion below one school per 10,000 capita. A large proportion of baronies, over twenty, had no schools. The low densities may be accounted for by the apparent lack of interaction of various actors, especially the Catholic clergy, in the area as applications were often the result of individual action as opposed to a cooperative effort in areas of high density. While a significant amount of further research needs to be undertaken, it may be suggested that when there was not a suitable local network of cooperative actors with a degree of wealth, as seen in east Ulster, the result was a lack of national-school establishment. There was an outlier in the general western zone of low density, which was the area surrounding Clew Bay which had high densities of around 3.5 schools per 10,000 capita in 1835. This outlier was the result of the various Catholic clergymen cooperating and transferring all of the Catholic-run schools to the national system; this was the only area in the west of the country in which this occurred (*Report on the new plan of education in Ireland 1837*).

There was a reduction in the rate of school establishment in the period 1836–38. The changes in this period, see Figure 5(a), saw the various areas of high and low density consolidate, with transitional zones developing on their peripheries. The adjacent baronies to the initial high-density areas experienced an increase, with a stretch of coast moving north from Carrickfergus, the northern eastern part of Leinster, and the area in the peripheries of the central Leinster zone also increasing. There were some significant reductions also in the period, which may have been due to the increasing opposition of certain actors. The area in east Derry and west Antrim reduced as a result of the opposition of the Synod of Ulster, with many Presbyterians transferring their schools to the newly-created Synod system. The western areas of the country showed the impact of the opposition of Archbishop John McHale, with a zone of significant reduction in national-school densities from Clew Bay to Athenry.

The various changes in this period did not result in significant change to the overall pattern of national school densities by 1838, see Figure 5(b). While there was a slight reduction in the east of Ulster, the core area of high density on the east coast was still evident by 1838, with densities over 5 schools per 10,000 capita, while the area surrounding Carrickfergus had over 9.5 schools per 10,000 capita. The high-density area of central Ulster had consolidated by 1838, as the southern areas of Tyrone and the northern areas of Monaghan and Fermanagh had similar densities of around 3.5 to 4.5 schools per 10,000 capita. These two areas of high density in regions in Ulster were separated by a transitional zone of densities slightly above the national average of 2.3 schools per 10,000 capita by 1838. Armagh and the west coast of Donegal were the only areas in Ulster that had lower than average densities. Armagh is an interesting case requiring further work to understand the precise nature of the processes involved in it becoming an outlier of low density.

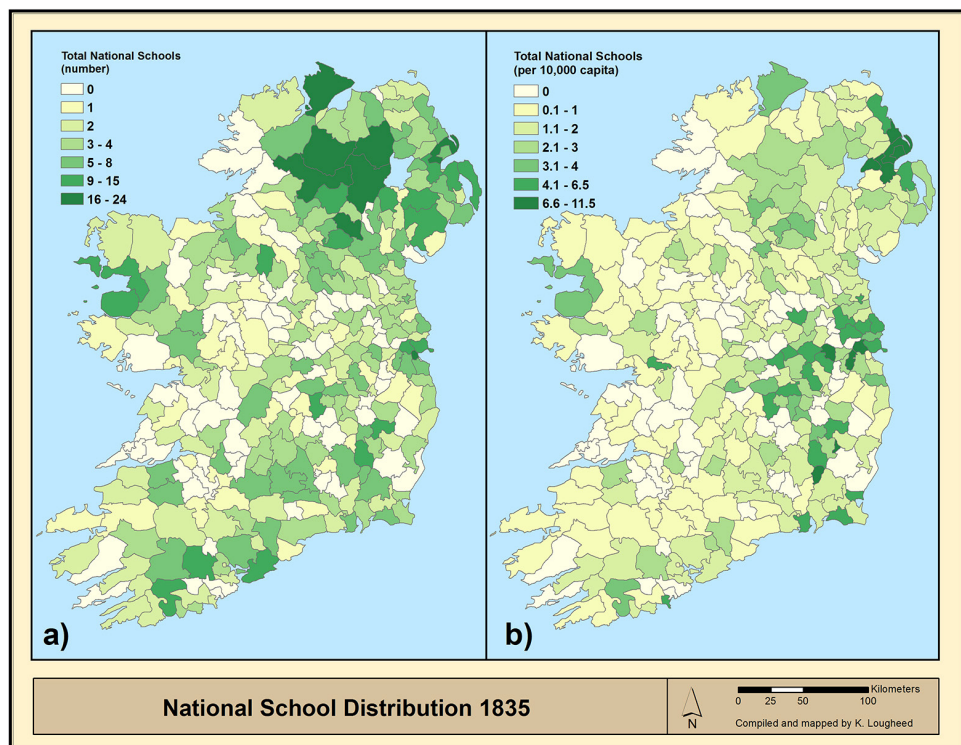


Figure 4. National-school distribution 1835

It may be suggested that a lack of cooperation among clergymen of different faiths led to the low rate of national-school establishment. In the northern parts of the county, where there were more national schools, there was some cooperation between the Presbyterian and Catholic clergy. However, the level of cooperation was significantly less than that seen in other parts of Ulster, especially in the areas of high national-school establishment. National schools established in the southern part of the county were established by Catholic clergymen acting in isolation and, similar to the areas in the west of the country, when this occurred it led to low national-school densities.

Due to the increased rate of national-school establishment in the area of north-east Leinster, the high densities present in 1835 had extended northward to include the area around Drogheda. The baronies of this area had densities over 3.5 schools per 10,000 capita, with the baronies of northern Dublin having densities as high as 11 schools per 10,000 capita. Due to the varied levels of increase, the zone of the northern borderlands of Leinster had a wide mix of densities and thus presented a transitional zone between the north-east Leinster area and the peripheral areas of Ulster. The various increases in central Leinster resulted in the expansion of the high-density area to include much of its periphery by 1838. The west coast area of Leinster between Wicklow and Wexford once again showed densities below the average. The mixed zone across the south of the country was again present in

1838, with the area that stretched from southern Wexford to Cork and Kerry all showing densities relatively close to the average. The west coast area of the country showed the lowest densities in the country, with the zone that ran from south Donegal to Clare still present.

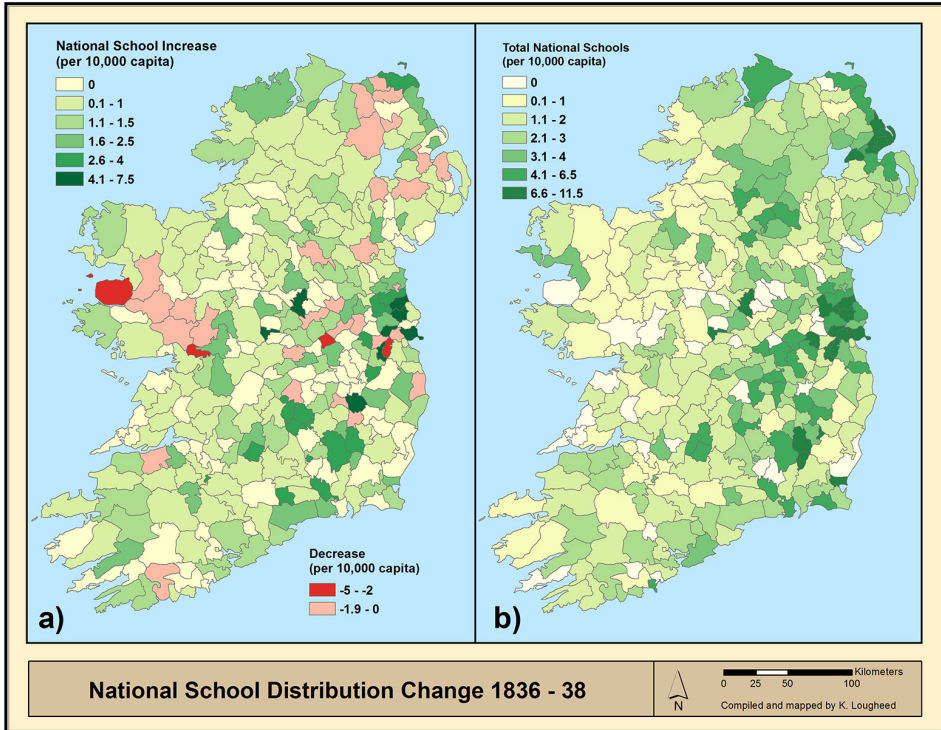


Figure 5. Change in national-school distribution, 1836–8

The influence of Archbishop McHale's opposition to the system was evident in the overall densities in the region, as the reduction around Clew Bay and north Galway meant that the area was gradually becoming part of the wider area of low densities, with only the barony of Burrishoole at Clew Bay having more than four national schools.

In 1839, the rate of national-school establishment rose, and by 1842, the national system was growing by twenty per cent per year. This sharp increase was partly due to the endorsement of the system by the Synod of Ulster, leading to a significant increase in the number of Presbyterian applicants (Loughheed 2014). The distribution of Presbyterians in Ireland would thus have a large effect on the spatial distribution of the national education system during this period. As a result some of the highest increases occurred in the east Ulster area, especially in the area of northern Antrim and Derry, with all the baronies experiencing an increase of over 5 schools per 10,000, see Figure 6(a). The transfer of schools from the Synod's education system to the national system therefore happened

over a relatively short period. The relatively high-density area of central Ulster experienced rates of increase slightly above the national average, with most baronies increasing by over 2 national schools per 10,000 capita. The high levels of increase in central Ulster were joined by high increases in the Donegal area. Once again Armagh was the outlier in the region with a level of increase below the national average of 1.6 schools per 10,000 capita.

Outside of the northern areas there was a mix of rates across the country in the period 1839-42. The high-density area of north-east Leinster experienced a mix of increases, with some areas of eastern Meath and Kildare experiencing high increases. The transitional zone of the north Leinster borderlands that had emerged by 1838 increased at a slightly higher rate than the average in the period 1839-42. The area of central Leinster experienced a mix of rates also, but in general most of the baronies experienced rates of establishment below the national average. The zone that stretched across the south of the country also experienced mixed rates of increase, with a relatively high rate of increase in southern Kilkenny and the area around Waterford having lower rates, including a reduction. The western region of the country once again experienced the lowest rates of increase in the country, with many baronies experiencing increases of less than 1 national school per 10,000 capita. Within the western region there was a zone of north Mayo and Leitrim that had relatively high rates of increase. The area around Clew Bay and Galway show significantly lower rates of increase and in some cases a decrease in schools, which was due to the continuing criticism of the national system by Archbishop John McHale.

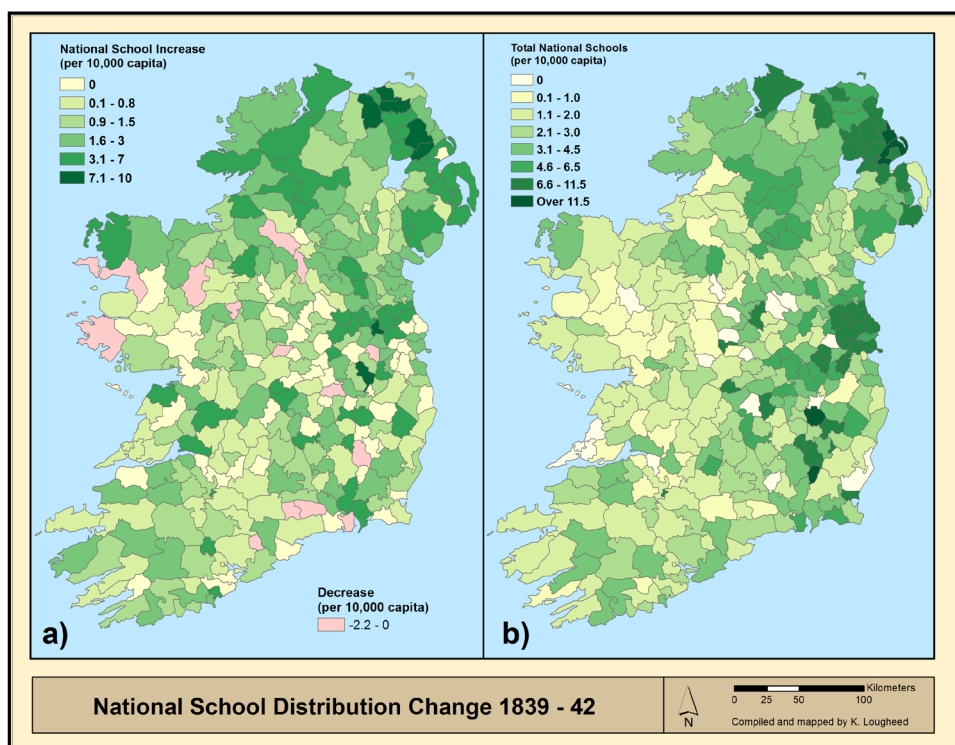


Figure 6. Change in national-school distribution, 1839-42

The increases around the area of west Antrim resulted in a significant expansion to the area of high density that, by 1842, stretched from the area around Belfast City to Coleraine, with all baronies having densities over 5 schools per 10,000, see Figure 6(b). The central Ulster area was still apparent in 1842, but now possessed lower rates than the east-Ulster area, with densities mostly above 4.5 schools per 10,000. The transitional zone that emerged by 1838 was extended, so that the two relatively high-density regions in Ulster were connected by a zone close to the average density, which was 3.2 schools per 10,000. Inishowen was again an outlier, and in 1842 had the highest number of national schools in the country with 45. Armagh was the only area that contained a significant number of baronies below the average.

The high-density area of north-east Leinster was still evident in 1842 with the area stretching from the north of Dublin City to the north of Drogheda having densities above 4 schools per 10,000. The central Leinster area, while still present, had lessened in densities when compared to that of north-east Leinster. The east coast area of Leinster had relatively low densities, with Wicklow and east Wexford having densities below the average. The southern zone of the country was an area that presented consistent densities throughout the period. The area stretching from south Wexford to south Cork had densities from around 1 to 3 schools per 10,000, with the areas around Waterford having slightly higher densities. The western areas of the country still had the lowest densities with baronies stretching from south Donegal to western Tipperary and Limerick possessing well below the average densities. The opposition of Archbishop McHale affected the area around Clew Bay, which was no longer an outlier in the region, and had densities well below the average of 3.2 national schools per 10,000 capita in 1842.

The national education system in pre-Famine Ireland emerged with a unique pattern of distribution with the development and modification of distinct areas that were quick to adopt the system and areas of relative non-adoption. Two core areas of high density in east Ulster and north-east Leinster emerged after the creation of the system, thus showing an openness of the areas to the regulations of the national system, which was further demonstrated by the intensification and expansion of the core areas by 1843. The large urban centres in the regions of high national-school density showed relative stability over the whole time period, having significantly lower densities to those of their hinterlands and wider regions. Apart from these areas, there were two areas of relatively high densities, but less than the core areas, in central Ulster and central Leinster. These areas had a mix of establishment rates over the period under study meaning that, while they were still present in 1843, they had lessened in their impact when compared to the two core areas already mentioned. There was a large zone of relative non-adoption that encompassed much of the western part of the country, which expanded over the time period such that the majority of the Atlantic coast of Ireland had low national-school densities, extending into the midlands and northern and central Munster. The southern part of the country was a mixed zone, with national-school densities close to the average in most periods. The various areas of high and low density

developed transitional zones that surrounded and connected them, meaning that areas had no definitive boundary. It was also seen that there were some consistent outliers of high or low density.

The initial distribution of high and low densities therefore displayed an east/west pattern that can be highly generalised by a line running from Sheephaven Bay in Donegal to Waterford Harbour. There was a similar pattern identified in studies of the variations in vulnerability to the Famine (Smyth 2012). It was seen, however, that by 1843 areas of higher density were spreading out from the central Ulster region into the western areas of the zone of non-adoption, such as Leitrim. This meant that interactions and influences occurred across this generalised boundary and demonstrates that, while such demarcations can act as markers for a shift in social behaviour, they should only be used for illustrative purposes.

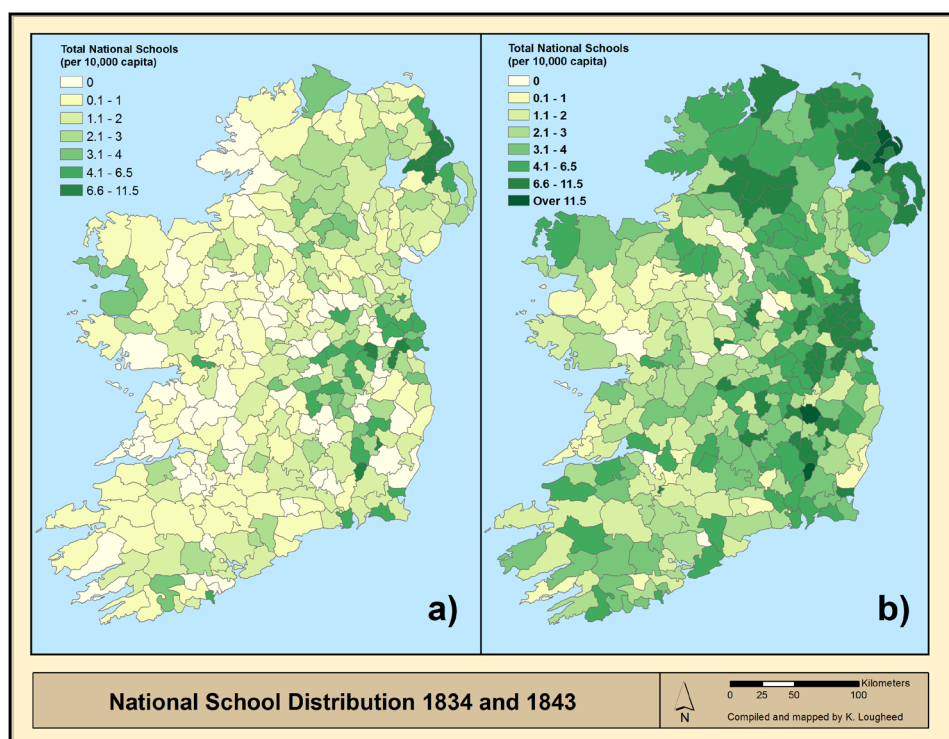


Figure 7. Comparison of national-school distribution, 1835 and 1843 (Source: Loughheed 2014)

National-school regions

There have been many criticisms of the use of thematic maps in the examination of regions in Irish historical geography. The major criticism is that patterns expressed are the result of intuitive discussions in which the choice of what is displayed is a subjective process. Intuitive examinations of thematic maps allow for the description of spatial patterns but to enable this description the data has to be simplified into categories. The classification of the data is fundamentally subjective and arbitrary, with different choices resulting in different patterns (Gregory and

Ell 2007). One way of providing more robustness to the identification of patterns is to perform spatial analysis on the data. Spatial analysis also provides additional information, which can aid in the generalisation of data and thus, when combined with intuitive discussions of spatial patterns, can present strong evidence for the existence of distinct regions. This paper uses two methods to identify possible geographic regions in national-school densities. A general test is used to find if clustering of national-school densities statistically occurs in pre-Famine Ireland, and a local test is used for the detection of clustering which evaluates where clustering of values occurs around certain points.

The general test used in the study of the pattern of national-school establishment is called spatial autocorrelation. Spatial autocorrelation simply assesses whether national-school densities occurred randomly across Ireland, or if significant clusters (or regions) of density values existed (Ebdon 1985). Spatial autocorrelation indicates whether adjacent values in geospatial data vary together, and therefore are related, and to what extent (Rogerson 2001). It uses the *Moran's I* statistical function to evaluate if values in the study area are clustered, dispersed, or random, and thus provides evidence of important underlying spatial processes. The analysis produces z-scores and p-values, which are statistical functions that inform whether the null hypothesis can be rejected, which in this case is that national-school distribution was random. This is done by computing the mean of the variance of national-school densities, which is then subtracted from the value in each barony and is then multiplied with the deviation from the neighbouring values. A high z-score with an associated low p-value indicates that the null hypothesis can be rejected, while a high positive z-score indicates that the data is heavily clustered. Analysis of the school density patterns illustrates that for every year in pre-Famine Ireland the distribution of national schools contained statistically significant clusters of high and low school densities to a confidence level of ninety-nine per cent.

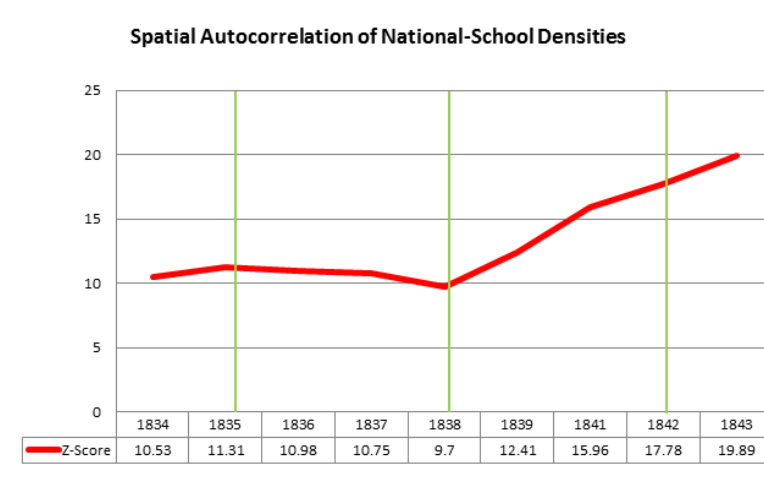


Figure 8. Z-scores from Spatial Autocorrelation of national-school densities (note: all significant to a confidence level of 0.99)

To advance the understanding of the regional nature of the distribution, the changes in the z-scores are charted over the period under study, which illustrates the changing nature of the intensity of the clustering (see Figure 8). The changes to the z-scores correspond to the various time periods of national-school establishment and also to the discussions of the changing distribution of national education, especially regarding the intensification of the areas of high and low density. After the initial establishment of the system, the z-scores do not increase dramatically, indicating that after an initial development of clusters, there is no significant change to that pattern. After 1838, there is a rise in the z-scores, which indicates that during the period of high school increase there was intensification in the clustering of school densities. This supports the intuitive discussion of national-school areas where there was a relatively low increase in the core areas between 1835 and 1838, but after 1838 the various increases were felt most in these areas, thus intensifying the overall regional character of school distribution.

While spatial autocorrelation illustrates that regions of national-school densities existed, it is a global statistical tool, which treats the whole study area as one unit of measurement. Local spatial analysis tools calculate separate values for every location in the study area, evaluating whether clusters of values occur in particular places, thus enabling the identification of regions of national-school densities across Ireland (Rogerson 2001). The local spatial analysis conducted on the national-school densities is *Getis-Ord* derived G statistical functions, which provides a straightforward way to identify the spatial association in the data (Getis and Ord 1992). *Hot Spot Analysis* is a uni-variate statistical tool used within GIS that is based on *Gi** functions, which allows for the statistical identification of clusters of values by testing whether a particular location and its neighbours have related values, and therefore constitute a significant region (Rogerson 2001).

In the examination of national-school distribution, a barony with a high value may be interesting on its own but would not be considered a region of high density unless it was surrounded by statistically significant high values. As a result *Hot Spot Analysis* analyses national-school densities such that neighbouring baronies have a higher influence on the results than those further away for each barony calculated (Getis and Ord 1996). The local sum for a barony, in the context of its neighbours, is compared to that of the expected global sum and is considered statistically significant when its difference is too large to be random chance. This form of spatial analysis has been used in other studies of nineteenth-century Ireland, such as the study of the Famine that examined the regional variations in the character and causes of population loss (Gregory and Ell 2005).

Figure 9 shows the output from the *Hot Spot Analysis* conducted on the final year of each time period discussed earlier. *Hot Spot Analysis* presents a smoothed view of the spatial patterns, and thus is a spatial summary of the various regions. The darker shades indicate statistically significant clustering of high national-school densities, while lighter shades show clusters of low national-school densities. From this, the various areas that were identified through intuitive means are apparent as statistically significant regions of high or low densities. The spatial

analysis illustrated that after the initial establishment of national education two statistically significant regions of high national-school establishment emerge, along with a large region of low establishment. The various regions correspond to the areas of high and low density identified in the thematic mapping. The regions did not experience much change in the period up to 1838. In this period, the major changes are seen in the areas where the opposition of the Synod of Ulster and Archbishop McHale occurred, illustrating that the actions of these regional actors resulted in statistically significant changes to the national education system. After 1838, there was a significant increase in the significant regions, which was also seen in the thematic mapping and increasing z-scores in spatial autocorrelation. Overall the various changes in the cluster analysis show that, after the initial establishment of the national education system, two statistically significant core regions of high school densities emerged in the eastern half of the country, while a large region of low densities emerged in the west. Over the time period these regions were modified and expanded. The spatial analysis thus provides more robust evidence to support the intuitive discussions.

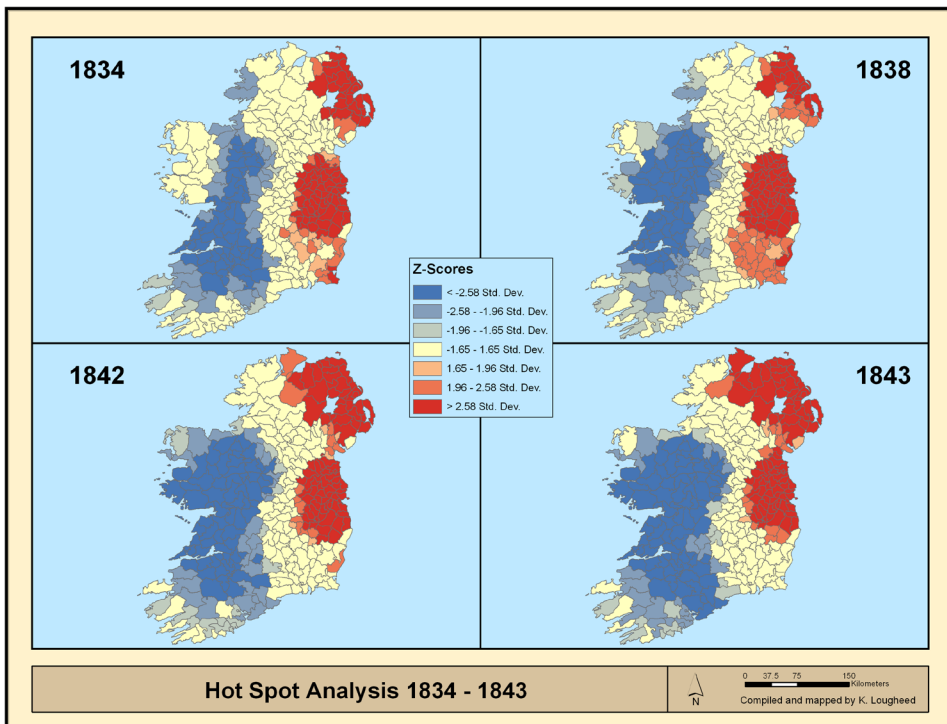


Figure 9. *Hot Spot Analysis* illustrating significant clusters of national-school densities

Conclusion

The spatial analysis conducted on national-school densities in pre-Famine Ireland

provides evidence that supports the intuitive observations of the emergence of certain regions of national-school establishment. Figure 10 shows the comparison between the thematic map of national-school distribution and the *Hot Spot Analysis* for 1843. The spatial analysis is classified to show the scale of significance of any high or low clustering, with darker shades showing greater significance. The observation of both these maps highlights the generalised east/west pattern of the adoption of national education. The line discussed from Sheephaven Bay to Waterford Harbour is especially evident in the *Hot Spot Analysis*. Taking the spatial analysis as a very general guide, as it is a summary of the spatial patterns, and the thematic map to further the specific spatial understanding, it can be stated that on the eve of the Famine the adoption of national education was highly regional in character.

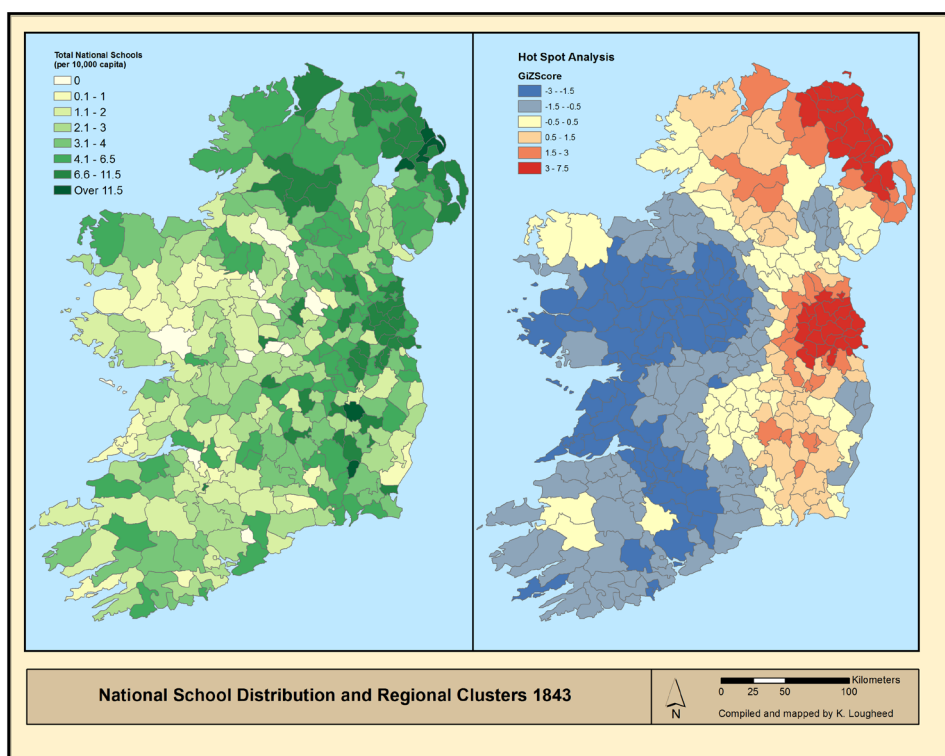


Figure 10. National-school distribution and Hot Spot Analysis comparison, 1843

The eastern areas of Ulster were quick to adopt the national education system, which was further accelerated after 1838. Within the northern areas of the country there was a region around south Tyrone and north Monaghan that had a relatively high school density. There were two significant outliers in the general Ulster area, with Inishowen as an isolated area with significant high school densities, and Armagh as an isolated area of lower school densities. This pattern was repeated in Leinster. The north-east of Leinster was a region that had significantly high

density, which was initially located in the northern Dublin area and gradually spread northwards. Within Leinster there was a region of relatively high density around central Leinster that initially stretched from south Kildare through Laois and Carlow into the Barrow valley, and which gradually expanded in the peripheral areas. There was an outlier of low density on the east coast of Leinster. The western area of the country constituted a large region of low national-school density. Initially stretching from southern Donegal to north Munster, this region expanded to encompass parts of central Munster. The area of south-west Mayo and north-west Galway was initially an outlier of higher density in this region, however, it became incorporated into the region of low density. From the thematic map, a zone of mixed densities stretching across the south of the country was identified, which was heavily influenced by the Catholic core in the region preferring education provided by the clergy, such as the Christian Brothers, or by the continuing hedge schools.

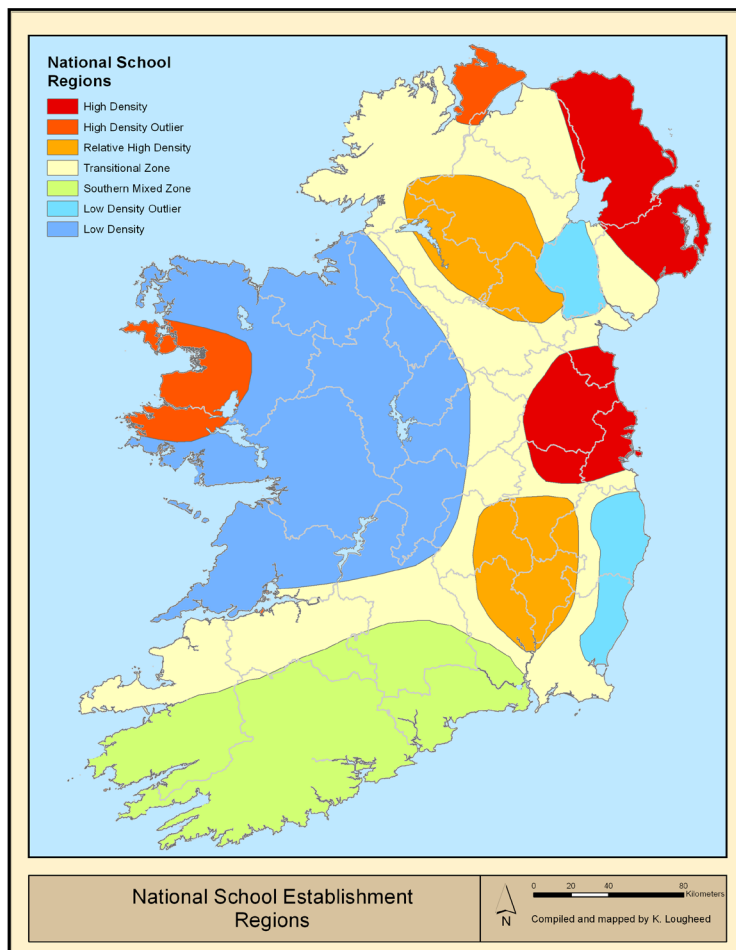


Figure 11. Regions of national-school establishment in pre-Famine Ireland (Source: Loughheed 2014)

The wide range of mixed densities in this area is illustrated by the fact that it does not appear within the *Hot Spot Analysis*. It was seen that between, and connecting, the regions of high and low densities were transitional zones that showed a degree of mixed densities.

Figure 11 presents this regional character of national education. Influenced by Whelan's methods in producing his general regionalism map of Ireland it delineates the various national-school regions, that were not necessarily continuous, that emerged from both the intuitive examination and spatial analysis of national-school distribution. The borders of the various regions are used for illustrative purposes, as the regions did not possess definitive boundaries and, as a result, these regions should be considered as 'reified abstractions' (Whelan 2000). As national education involved a complex network of social interactions, with a central administration, local management and members in between, the nature of the emergence of national education can be seen as a result of the interactions between all these actors. At a local level, it was indicated that the interactions of individuals, such as in east Ulster, Inishowen, and Clew Bay were important in the establishment of national education. At a national level, the interactions between the state's rationale for national education and various actors, such as the Synod of Ulster or Archbishop McHale, significantly influenced the regional emergence of national education. The changing nature of these interactions over time was seen not only to influence the uptake or rejection of national schools but also to drastically alter the emerging geography of the national system itself. When regions are viewed as a result of the spatial variation of social processes, it can be suggested that the regions identified in this paper are the result of spatially varied networks of social networks involved in the establishment of national schools, and also as a product of the interconnectedness of different scales. In this way, the identification and examination of these regions not only adds to the understanding of the spatial variation in the emerging institutional landscape of nineteenth century Ireland but also aids in the understanding of social processes that were occurring in pre-Famine Ireland.

Acknowledgements

The author would like to gratefully acknowledge Dr Mark Hennessy for his assistance and guidance during this research, as well as the funding of Trinity College Dublin which allowed this work to take place.

References

- Agnew, J., 1996. Introduction to region, place and locality. In: J. Agnew, D.N. Livingstone, and A. Rogers, eds. *Human geography, an essential anthology*. Oxford: Blackwell Publishing, 366–77.
- Akenson, D.H., 1970. *The Irish educational experiment; the national system of education in the nineteenth century*. London: Routledge.
- Andrews, J.H., 1988. Jones-Hughes's Ireland: a literary quest. In: W.J. Smyth

- and K. Whelan, eds. *Common ground: essays on the historical geography of Ireland*. Cork: Cork University Press, 1–21.
- Archer, M.S., 1984. *Social origins of educational systems*. London: Sage.
- Atkinson, N., 1969. *Irish education; a history of educational institutions*. Dublin: Allen Figgis.
- Butlin, R.A., 1993. *Historical geography: through the gates of space and time*. London: Routledge.
- Coolahan, J., 1981. *Irish education: its history and structure*. Dublin: Institute of Public Administration.
- Daly, M., and Dickson, D. (eds.), 1990. *The origins of popular literacy in Ireland: language change and educational development 1700-1920*. Dublin: UCD and TCD.
- Ebdon, D., 1985. *Statistics in geography*. 2nd ed. Oxford: Blackwell Publishing.
- Freeman, T.W., 1965. *Ireland: a general and regional geography*. 3rd ed. London: Methuen.
- Getis, A., and Ord, J.K., 1992. The analysis of spatial association by use of distance statistics. *Geographical Analysis*, 24 (3), 189–206.
- Getis, A., and Ord, J.K., 1996. Local spatial statistics: an overview. In: P. Longley and M. Batty, eds. *Spatial analysis: modelling in a GIS environment*. Cambridge: Wiley, 26–278.
- Gilbert, A., 1988. The new regional geography in English and French-speaking countries. *Progress in Human Geography*, 12, 208–28.
- Gregory, I., and Ell, P., 2005. Analysing spatiotemporal change by use of national historical geographical information systems: population change during and after the Great Irish Famine. *Historical Methods*, 38 (4), 149–67.
- Gregory, I., and Ell, P., 2007. *Historical GIS: technologies, methodologies, and scholarship*. Cambridge: Cambridge University Press.
- Hennessy, M., 2013. Administration. In: H.B. Clarke and S. Gearty, eds. *Maps & texts: exploring the Irish Historic Towns Atlas*. Dublin: Royal Irish Academy, 152–63.
- Hyland, A., and Milne, K., eds. 1987. *Irish educational documents. Vol. I, Selection of extracts from documents relating to the history of Irish education from the earliest times to 1922*. Dublin: Church of Ireland College of Education.
- Johnson, J.H., 1970. The two ‘Irelands’ at the beginning of the nineteenth century. In: N. Stephens and R.E. Glasscock, eds. *Irish geographical studies: in honour of E. Estylen Evans*. Belfast: Queens University Belfast, 224–43.
- Jones-Hughes, T., 1963. Regionalism in Ireland, *Rural Ireland*, 65–71.
- Jones-Hughes, T., 1981. Village and Town in mid-nineteenth century Ireland. *Irish Geography*, 14, 99–106.
- Jones-Hughes, T., 2010. *Landholding, society, and settlement in nineteenth century Ireland: a historical geographer’s perspective*. Dublin: Geography Publications.

- Kearns, G., Andrews, J., Cronin, N., Hennessy, M., Clayton, D., and Smyth, W., 2008. Mapping Irish colonialism: a roundtable. *Journal of Historical Geography*, 34, 138–66.
- Kenny, K., ed. 2004. *Ireland and the British Empire*. Oxford: Oxford University Press.
- Lougheed, K., 2012. National education and empire: Ireland and the geography of the national education system. In: D. Dickson, J. Pyz, and C. Shepard, eds. *Irish classrooms and British Empire: Imperial contexts in the origins of modern education*. Dublin: Four Courts Press, 1–17.
- Lougheed, K., 2014. ‘Not so much for their sake as for its own’: The State and the Geography of National Education in pre-Famine Ireland, *Historical Geography*, 42, 72–92.
- Massey, D., 1984. Introduction: geography matters. In: D. Massey and J. Allen, eds. *Geography matters! A reader*. Cambridge: Cambridge University Press, 1–11.
- Nally, D., 2011. *Human encumbrances: political violence and the Great Irish Famine*. Notre Dame: Notre Dame University Press.
- Orde, T., 1787. *Mr. Orde’s plan for an improved system of education in Ireland, submitted to the House of Commons, April 12, 1787; with the debate that arose thereon*. Dublin: W. Porter
- Rogerson, P.A., 2001. *Statistical methods for geography: a student’s guide*. 3rd ed., London: Sage.
- Smith, N., 1992. Geography, difference and the politics of scale. In: J. Doherty, E. Graham, and M. Malek, eds. *Postmodernism and the social sciences*. Basingstoke: Macmillan, 57–79.
- Soja, E., 1989. *Postmodern geographies, the reassertion of space in critical social theory*. London: Verso.
- Whelan, K., 1983. The Catholic parish, the Catholic chapel and village development in Ireland, *Irish Geography*, 16, 1–15.
- Whelan, K., 1988. The regional impact of Irish Catholicism, 1700–1850. In: W.J. Smyth and K. Whelan, eds. *Common ground: essays on the historical geography of Ireland*. Cork: Cork University Press, 253–77.
- Whelan, K., 2000. Settlement and society in eighteenth-century Ireland. In: T. Barry, ed. *History of settlement in Ireland*. London: Routledge, 187–205.