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Mapping 'sluggish' migration: Irish internal migration 1851 – 1911

Mary Kelly[1*], Aidan Slingsby[2], Jason Dykes[2] and Jo Wood[3]
[1]Kingston University London
[2]City University of London
[3]University of Exeter

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Abstract: Emigration is a major theme in Ireland's demographic history and has, as a result, received significant attention in scholarship. By contrast, the less prominent story of internal migration has been much less researched. This has resulted in a neglect of the changing geographies of those who remained in Ireland. Here we use Origin-Destination (OD) and Destination-Origin (DO) maps to explore changing patterns of internal migration in Ireland from 1851 and 1911. In doing so, we show that up to 1851 internal migration primarily involved the movement of people to neighbouring counties, even in the east where internal migration was higher. Dublin and Antrim were however, both destination counties. Dublin attracted people from all over Ireland, but more prominently from its immediate hinterland, and Antrim (containing most of Belfast) attracted migrants primarily from counties that would eventually become Northern Ireland. We also show that in 1851 women tended to make more localised movements whilst men moved further afield. By 1911, the proportion of people classified as internal migrants had increased by only 4%. However, here we show that migrants were now moving farther distances, being less likely to move to neighbouring counties and more likely to move towards the two principal cities. We also show that by 1911 women now outnumbered men in almost all directions, and in particular in their movements towards Dublin and Belfast. We also show some nuances with regard to the geography and gender of movement towards these cities. Men from northern counties were more numerous in Dublin than females from northern counties, and women were prevalent in Dublin city and county, whereas in Antrim women were more prevalent in the city only. Our identification of these patterns of change using innovative OD and DO maps aims to stimulate further research on this neglected area of Irish demographic history.

Keywords: *Internal migration, Historical demography, Data visualisation, Origin-Destination mapping*

m.h.kelly@kingston.ac.uk

Introduction

Emigration is a major theme in Ireland's demographic history and has, as a result, received significant attention in scholarship (Kennedy 1973; Lees 1979; Miller 1985, Guinnane 1998). By contrast, the less prominent story of internal migration has been much less researched. Ravenstein's early work on migration in Ireland and Britain identified the Irish as being the most migratory in terms of leaving their own island but least migratory when it came to moving about within it (Ravenstein 1885; 1889). More recent analyses also recognise the 'inconsiderable' or 'sluggish' nature of internal mobility in late-nineteenth early-twentieth century Ireland, when viewed against the movement of people abroad (Daly 1981a, 222; Fitzpatrick 1989, 506).

However, as argued by Smith *et al*. (2015, 3) in their work on internal migration in the UK, the causes of migration, national or international, are often 'extremely similar', a point also noted in relation to Ireland (Fitzgerald and Lambkin 2008). Post-famine farm consolidation, coupled with changing attitudes to land and inheritance, the gradual move from labour intensive crop production towards pastoral farming, and the mechanisation of agriculture resulted in a decline in employment opportunities in rural areas. This meant that young people had to look for work elsewhere, wherever that elsewhere was (Kennedy 1973; Fitzpatrick 1989; Kennedy 1991). At the same time improvements in communications, including information that came from those who had already left, facilitated a widening of geographical imaginations, while improvements in transport made re-location easier. Finally, the social vacuum left in the wake of emigration, alongside rising social expectations, further stimulated outmigration (Johnson 1994; Smyth 2000).

However, whilst these processes encouraged the movement of people both off and around the island, the dominance of emigration as a theme in scholarship has resulted in a neglect of the changing geographies of those who remained in Ireland. The research that does exist suggests however, that internal migration was important for rural people and that it had an impact on the population geography of the island. Johnson's work on emigration argues that for young men, internal migration was often an important first phase in the process which culminated in the eventual move to Britain or America (Johnson 1990), and Guinnane (1992) argues that women often migrated to take up domestic service positions to save for emigration. While internal migration may have been a first step on the road to more distant locations, not all those who moved internally emigrated. Daly's work on domestic servants in Dublin outlines that that 'docile country girls' were favoured in the houses of the emerging middle classes over those born in the city itself (Daly 1981a: 225). Prunty's work on the Dublin poor finds that many had rural origins while Purdue's work on the Belfast workhouse also finds that it accommodated migrants from surrounding counties (Prunty 1997, 330; Purdue 2019). Urban geographers have also recognised the contribution of rural migrants to the growth of industrial and commercial sectors (Daly 1944, Lynch 1998, Royle 2011). Guinnane's analysis of the 1911 data, which while identifying its slow rate as a distinctive feature of Irish population history, also notes that by 1911 those that stayed at home 'did not

always stay put' (Guinnane 1998,122), particularly so those living in the more urbanised eastern counties. This has been highlighted in the work of Connor *et al.* (2011) on Dublin, which demonstrates how these eastern movers (along with those from other parts of the country, though fewer in number) were, by 1911 making their own demographic imprint on the city.

What this suggests is that while internal migration may have been negligible in comparison to emigration flows, it was a feature of Irish demographic history. However, with the exception of county choropleth maps, which mask detail on patterns and directions (Guinnane 1998), Ravenstein's (1885) impressionistic but effective flow maps, and a range of local studies which while useful provide but fragmentary perspectives on very specific areas (Prunty 1997), there has been very little mapping and overall consideration of the internal movements that are part of the story of Irish population change. This paper draws on our mapping of internal migration in Ireland from 1851 to 1911 (Kelly *et al*. 2013) to highlight some nuanced changes that took place at the sub-national level during this period and to stimulate further research on this topic in Ireland.

The first part of the paper examines the literature on late nineteenth-early twentieth century Ireland, highlighting the fields where internal migration has been identified, in some instances explicitly, but in others less so. The second part of the paper discusses the data and the methodology employed. The third part analyses the data from 1851 to 1911. The final part outlines the significance of the findings and points to further research.

Existing Research on Internal Migration in Ireland

The study of internal migration in Ireland during the sixty years that followed the famine begins with Ravenstein's examination of the movements within and between the countries of the British Isles from 1871 and 1881 (1885, 1889). Identifying Ireland as a vast area of out migration, he noted the exceptionalism of the Irish in their tendency to move abroad as opposed to internally and the consequent limited rate of urban growth in the country. The general tardiness of internal migration, and slow rates of urbanisation, are themes in subsequent analyses. Cousens's work on the period from 1841 to 1851 for example, argues that internal migration was so 'slight' during this decade that it was inconsequential to the demographic changes that took place as a result of the famine (Cousens 1960). This issue has been refuted by subsequent historians. Fitzgerald and Lambkin (2008, 168-9) argue that there was 'already a sizeable vagrant population' by 1845 and drawing on the work of Ó Gráda (1999), use newspaper reports and eyewitness accounts to highlight the throngs moving along the roads, as people made their way into towns and, in particular into port towns. Coroner's reports, and institutional records which include numbers admitted to prisons, workhouses and hospitals, as used by Daly (1984), Prunty (1997) and Dickson (2014) on Dublin, and Maguire (1993), Royle (2011), Lynch (2001) and Gribbon (1979) on Belfast, confirm this. In addition, the Galway edition of the Irish Historic Towns Atlas records the 'many thousands' that 'swelled the ranks' of the town's existing destitute classes during the famine (Prunty and Walsh 2016, 8).

Research on the post-famine period highlights that the movement of people into urban areas continued, and that this had a distinctive eastward, and north eastward pattern. Both Fitzpatrick's work on emigration from 1871 to 1911 and Guinane's work on rural depopulation from 1861 to 1914, while not studies of internal migration per se, both recognise this (Fitzpatrick 1989, Guinane 1997). Urban histories also note this ongoing movement of poor communities into towns. Daly has highlighted the way in which migrant inflows to Dublin fluctuated in response to periods of distress in the countryside (1984). However, there were also more local movements into urban areas. In 1865, 'one quarter of the inhabitants [of Kells] had been born outside the town and these immigrants tended to congregate in the streets with lower social status, where they experienced the highest unemployment rates' (Simms and Simms 1990,8). While those in need were often attracted to the cities, due to the larger number of institutions or charitable organisations therein, the rural poor also found assistance in provincial institutions (Crossman 2013). While relief policies stipulated that people in need were provided for locally, unions did cross county boundaries resulting in inter-county movement. Reform schools, Magdalene laundries and prisons were also sites of incarceration which became increasingly widespread during this period, and into which those deemed problematic were moved. As argued by Cox (2018,686) while it was not intended that 'institutional populations would become permanent or even long-term residents' the lack of aftercare coupled with the stigma attached to being in one meant that for some, long-term institutionalisation was the outcome.

Rural migrants, contributed to more than the swelling of destitute populations in urban areas. Dickson (2014: 308) has argued that some crisis migrants may have 'put down roots' in Dublin while Daly has outlined how rural migrants often found work in better paid and more secure employment sectors than city born workers (1982). The significance of migrant labour for the phenomenal industrial growth of the city in the second half of the nineteenth century has also been noted (Royle 2011, Lynch 2001). While sources indicate that migrants into Belfast were predominantly from northern counties, some came from farther afield. A report from 1892 outlines how a large textile factory owner, when short of labour, sought out employees from the south whom he 'brought up at his own expense' along with their families (Lynch 1998, 140). With regard to the cities of the south, much attention has been paid to their poor level of industrial activity when compared with Belfast. Guinane (1998, 123) identifies Ireland's 'feeble industrialisation' as cause and consequence of its poor rates of urbanisation and internal migration. However, while this might be the case, there was some employment in this sector. Daly for example noted the propensity of the Guinness Brewery in Dublin, one of the city's largest employers to provide work for rural labourers, while also recognising carters as being a rural migrant friendly occupation (Daly 1982). Clear (2018) also calls for greater attention to be paid to industrial workers noting the significant numbers in mining as well as those working with precious metals, stone, wood and timber, iron and steel, and textiles at various sites around the country, the employment and training of whom would have involved some level of relocation. Cronin (1993) has also examined industrial activity in Cork, and its role in attracting rural labour to the city.

The expansion of the railway also provided employment for rural workers in Dublin (Daly 1982) as well as across the country. As argued by Gribbon (1996, 310) the influx of engineers to country places 'must have conveyed a sense of change and an air of progress long absent from the Irish scene' and they more than likely contributed to the local economy, and to social mixing. Moreover, while many argue that the arrival of the railway, led to the outflow of the rural youth (Lee 1989), it did contribute to the development of tourist towns, thereby creating pockets of employment and inward movement into particular areas (Turnock 2016).

While the industrial sector contracted in the south, the service sector expanded. This included the professional classes, a group which some regarded as 'overcrowded', there being 'as many as' 1,030 barristers, 2,575 doctors and 1,637 solicitors in the country, proportionally more than could be found in England or Scotland at the time (Paul-Dubois (1908, 334). Lee (1989) argues that Catholic families tended to seek social mobility through professionalisation rather than through industry, while Fitzpatrick (1989) has observed how inheritance practices amongst the more substantial farming class involved the provision of apprenticeships and education for siblings not in line for the farm, so that they could be 'dispersed' into non-farming sectors. The maintenance or acquisition of a middle-class status has been explored by Hatfield (2018) in her work on Dublin boarding schools, places young people were sent to be educated and appropriately socialised, and as such places which stimulated mobility. O'Neill (2014) has also looked at boarding schools as systems of social and spatial mobility, and their role in facilitating rising expectations and professionalisation across a spectrum of social groups.

While the professional classes did 'cluster in large towns and cities' (O'Neill 2018, 539) they could be found all over. Gribbon (1996, 334) notes the introduction of bank clerks, and local government officials 'people with permanent and reasonably well-paid jobs' which meant 'increased social diversity'. Other professions such as the religious orders, teachers, the Royal Irish Constabulary, and army personnel, as well as those involved in surveying, or the operations of the Congested Districts Board also involved migration (Crossman 2018). While not examined explicitly, research on these positions, and on the expansion of social and public services more broadly, indicate that they contributed to the shifting of people around the country, and consequently to social mixing and new demographic configurations.

Domestic service, as outlined above did provide opportunities for young women in Dublin. However, while Daly (1982) has outlined the prevalence of rural migrant girls and women within the community of domestic servants in Dublin, and Kearns (2015) has mapped them across the city, their connection with rural areas is not really known. Clear's work on situations vacant published in the national papers indicates that families advertised for servants from all over the country. However, how this translated into population movement is also not clear. Moreover, while domestic service was still the largest employer of females in 1911, her work also demonstrates that advertisements for domestic service positions were beginning to decline, while advertisements for other types of employment, drapery and millinery, and shop attendance for example, were on

the increase (Clear 2018). These could however be low paid. As noted by Luddy, evidence from Cork indicates that sometimes those employed in these professions also engaged in prostitution, another occupation from which rural migrants drew an income (Luddy 1997). May Laffan Hartley, the Irish 'Charles Dickens' recorded the rural origins of one such late nineteenth sex worker:

> *'She was a country girl, as we know, barely more than twenty, though there was little to tell of youth or the country … in her haggard white face' (Kahan 2005: 178).*

More work is needed on the literary geographies of other cities, and other professions, to trace the flow of incoming migrants documented therein.

In relation to rural change, declining opportunities available to young people that resulted from farm consolidation and mechanisation, and the increasing move towards single inheritance and towards cattle production, have been identified as reasons for outward movement. Seasonal migration, as a source of rural employment, which enabled rural communities to survive is well recognised (Ó Gráda 1973). However, Gribbon (1996) notes that while wages for agricultural labour increased after the famine, wages for unskilled labour were higher in the UK making emigration attractive. He also argues that while the rural migrant could get higher wages in Dublin than in rural towns, the high costs of accommodation in Dublin may have been prohibitive. Moreover, while agricultural labour was seasonal, commercial and/or industrial labouring in Ireland was more irregular. Crossman has highlighted how wages varied across the country, which would have encouraged internal movement (Crossman 2013,) However, if and how this related to internal migration in Ireland needs further research. The increasing tendency to leave the farm to one heir, reducing the number of eligible (i.e., landed) marriage partners, the responsibility of those bequeathed with land for caring for elderly parents, and the 'dysfunctionality' of rural family life where multiple generations might live under one roof, were also seen as stimulants of out migration (Grimes 1999, 378). However as noted by Earner-Byrne (2018) while there is evidence to suggest that the negative stereotype of rural family life existed, it was by no means the complete story. Wealthier families often divided property amongst siblings and catered for those not inheriting land through dowries and/or other resources. Daly notes the high proportion of farmers' sons who occupied positions as grocers and publicans in Dublin, positions which could only be achieved by 'financial means' (Daly: 1982: 126). Having a dowry made one attractive to a greater (and therefore wider) pool of potential suitors. As outlined by Fitzgerald and Lambkin (2008) women were more likely than men to move into a farm on marrying, while better off farmers could move further to find a wife. While not examined explicitly in relation to spatial mobility, this suggests that increased mobility was likely, particularly for those better off. Finally, Walsh's early work on gender ratios and marriage rates argues that 'that single women may have migrated out of low marriage areas in search of brighter marriage prospects' (1970,155), again suggesting some level of mobility.

Thus, while internal migration has not been explored in detail during this period, research indicates that alongside the waves of people moving off the island, were more subtle, but no less important, movements of people around on it. It is clear, that these

movements were structured by gender, age, and class. Here we use the data to explore broad but gradual shifts in internal movement, at the inter-county scale, to understand how patterns changed and to stimulate further research on the processes that drove these changes. Moreover, if and how the patterns identified in Ireland resonate with what has been found elsewhere also warrants investigation. Research on England, for example, indicates that the working-class intercounty migrant was young, literate and skilled, and while distance did not seem to matter, internal migration followed distinctive regional patterns (Nicholas and Shergold 1987). Tores et al (2019), have explored how internal migration affected rates of life expectancy and Jennings et al (2019) have examined its relationships with levels of economic development, and environmental change in Scotland. These are all topics, which are beyond the scope of this paper but are worthy of investigation in an Irish context.

Data and Methodology

Data on internal mobility for Ireland exists in the 'tables of migration' published with the census of population from 1841 onwards. These tables document the birth places of all those not resident in the county in which they were born arranged by the county in which they live. As such, this captures where people classified as 'internal migrants' (that is people living in counties in which they were not born) came from and went to. While historians have drawn on these data, and as outlined above some have mapped them, difficulties associated with traditional forms of migration mapping, particularly choropleth and flow maps, have meant that the potential of the data contained in these tables has not been realised.

Here, a JavaScript implementation was used to produce spatially orientated Origin-Destination (OD) and Destination-Origin (DO) matrix maps. A classic OD matrix shows origins and destinations as rows and columns of a matrix, where cells are coloured to indicate magnitude of flow or connection. OD matrices show grids of origin counties as rows, and destination counties as columns, with the colour lightness of cells indicating the amount of migration between each pair. This enables the viewer to quickly compare flows between all pairs of counties. They do not however, reveal the spatial structure of these flows. Here we used spatially organised OD and DO matrices (Wood *et al*. 2010), where the country is transformed into a grid of squares which retains the county structure. This is essentially a spatially ordered version of a traditional matrix.

Figure 1 shows how the OD maps have been constructed.[1] The country is transformed into a grid, with each county being represented by a square. We then embed within each county, a similar grid of counties. For OD maps, each large square represents the county of origin, and the inner grid represents the destinations. Colour shading represents the amount of migration from the origin to the destination or vice versa. The darker the squares the greater the number of people moving to or from that county.

The blank central square (or home square) indicates the county of origin. This is blank as a migrant could not move into their county of origin. The DO maps, (Figure 2 right), show

the opposite flow. Here, each large square represents the county that migrants moved into (the destination), while the smaller internal squares represent the counties they came from. Again, the darker the squares the greater the number of migrants that came from that county.

Using OD and OD maps in this way, enable us to overcome some of the difficulties associated with traditional forms of migration mapping. Choropleth maps, for example tend to show point-in-time snapshots of the number of migrants coming from particular areas, or the number having migrated to particular areas, but not both. Flow maps capture the relationship between origins and destinations, but they can be problematic particularly where there are many possible movements in a small area. In such instances occlusion from crossing lines often obscures the pattern. Here we have used squares of equal size to represent counties. This means that the patterns are equally visible for small counties as they are for larger ones.

Using this approach to map internal migration in Ireland from 1851 to 1911 therefore enables us to visualize where people were born (their origins) and where they went to (their destination) more effectively than has been achieved to date and as such is a novel approach in Irish historical research.

Figure 1. Constructing an approximate geographical layout (origins) and embedding maps (destinations) in a grid layout.

In this analysis we use the data from the 1851 census to examine firstly inter-county migration looking at total migrant origin-destination and destination-origin patterns. The 1851 census is the first record of population after the famine, which resulted in largescale but uneven rural depopulation and which also stimulated internal mobility as people gravitated towards urban areas or port towns (Crowley *et al*. 2012, Ó Gráda (1999). The 1851 tables record the birth places of people residing in counties in which they were not born, but not the point at which they moved. People recorded as migrant in 1851 may have moved at any point up to that year. As such they could be pre-famine migrants or famine migrants. Essentially, the tables provide us with a perspective on one point in time (1851) and capture movement up to that point without telling us when people moved in the first instance. We have not here explored in detail the differences between the 1841 and 1851 data, although such an analysis is possible. Here we take 1851 as our starting point for an analysis of the post-famine period. We must acknowledge however that the 1851 data includes some famine migrants. We then compare the 1851 data with the 1911 data,

which captures the situation sixty years later. Again, we do not know when people moved. We only know where they came from originally. As suggested above, the post-famine decades were a period of significant rural transformation. Some of these changes were already underway in parts of Ireland before the famine, and as would be expected change took place unevenly over the time period under review here. It is possible to examine changes at shorter intervals, however, the numbers are low at shorter intervals making the analysis challenging, hence our focus on the broader period. Moreover, to explore the differences between 1851 and 1911, we map the difference between the expected 1911 pattern modelled on the 1851 movements and the actual 1911 pattern. In doing so we can establish how the trend changed, rather than the difference in numbers. This allows us to identify the changing directions of people during this period by highlighting the areas that received less than expected migration and those counties that received higher than expected numbers of migrants.[2] Finally, recognising that the changes that occurred in rural Ireland in the second half of the nineteenth century affected men and women in different ways, we examine differences between male and female migration in and between 1851 and 1911.

Analysis of the Data

Internal migration in Ireland 1851

Figure 2a and b. Internal migration 1851 origin-destination (a left) and destination-origin (b right). The darker the nestled square, the more migration to that particular county.[3]

Mapping the data for 1851 shows that migration was relatively localised at this time as migrants tended to favour neighbouring counties. This can be seen by the darker green squares which surround home squares in OD map in figure 2a. In the top left square, which

represents migration from Donegal for example, we see that migrants predominantly went to places that surrounded the blank home square which represents Donegal itself. As illustrated with the darker squares, some went to nearby counties, (Tyrone and Fermanagh), but most went to Londonderry (the darkest square). This pattern of localised movements holds true all over the island, even in the east where overall migration was higher. Much of this movement may have been over very short distances, for example, to nearby farms which might have been only just across county boundaries. We have not been able to capture distance here, only movement from one county to another. Evident from Figure 2b, where each larger square represents the destination, and the smaller squares the origin, we see that there was much symmetry in rural Ireland, in terms of where people were coming from and going to. Using Donegal again as an example, the larger square on the right represents Donegal as a destination. Here we see that people moving into Donegal, came from nearby counties. However, as one would expect Dublin (containing Dublin city) and Antrim (containing the greater part of Belfast), had higher inward migration than outward migration. However, while Antrim drew most of its migrants from other Ulster counties, Dublin drew its migrants from all over the country. By contrast, other provincial cities (Cork, Limerick, Galway, Waterford and Kilkenny) did not attract distant migrants indicating that they had perhaps less to offer, or that the two principal cities dominated migrant imaginations and therefore choices within their respective regions.

Changing horizons 1851-1911

As outlined above, post-famine Ireland was a period characterised by mass rural depopulation. As a result, between 1851 and 1911 four and a half million people left the island (Hatton and Williamson, 1993). With the movement of people towards Britain and America, internal mobility also increased. At the national level the increase appears negligible. In 1851 8.1% of the population were identified as living in a county in which they were not born in 1851. By 1811, this figure had increased to 12.4%. However, as indicated above, beneath the general statistics lie more nuanced changes. To illustrate these, we map the differences between the expected 1911 migration (based on destination choices of migrants in 1851) and the observed 1911 migration. In doing so we highlight changes that would otherwise be hidden in the general trend.

Here orange squares (Figure 3) show areas where there was less than expected migration while blue squares show areas where there was more than expected migration. The predominance of blue shows that Irish became more migratory between 1851 and 1911 and that this increase was widespread and multi-directional. However, while the increased internal movement from and to counties can be seen all over the country, also evident is a strengthening of the 1851 trends towards Dublin and Belfast and of the distinct catchments of both these cities. Migrants from all over Ireland were gravitating towards Dublin even though it was by no means a thriving city (Daly 1984). However, as outlined above, the city did provide opportunities for country people. While employment in industry in the city fell, employment in unskilled and casual labouring,

Figure 3a and b: Change 1851-1911 origin-destination (a left) and destination-origin (b right)

sectors that suited rural people, increased (Christopher 1997; Daly 1982). Moreover, while trades union policies stipulated that apprenticeships be given only to the sons of existing tradesmen, thereby excluding outsiders, there were some respectable positions in which country people were overrepresented. The police force, transport companies and the Guinness Brewery, one of the largest industrial employers in the city, all favoured country people. Thus, while migrant workers did not feature strongly in skilled trades, they did occupy some of the more secure and better-paid working-class positions (Daly 1982). Given that Dublin featured as a destination of choice for rural migrants in 1851, it can be assumed that chain migration through which people followed in paths of earlier movers strengthened the Dublin connection to rural counties. Moreover, while Dublin lacked industry, it did have a vibrant social and cultural life which would have provided opportunities for servant labour whilst the expansion of the railway network made it more accessible for country people (Daly 1984, Dickson 2014).

Belfast, by contrast, thrived in the second half of the nineteenth century (Royle, 2011, Hepburn 1996) Industrialisation in textile production, expansion in shipbuilding and the emergence of engineering and machine maintenance industries made the city and its satellite towns magnets for migrants. However, while the northeast drew more than expected migrants from all over Ireland its primary catchment area was still the northern region. Reasons for this may be due to tradition (the 1851 Belfast catchment showed a similar reach), the physical distance that separated the northeast from southern Irish counties or to perceived fear of sectarian discrimination that southern Catholics might face in Protestant owned industries. Indeed, as the city's population grew, its Catholic population went into decline, particularly after 1861 when sectarian tensions began to escalate, and Catholics became increasingly underrepresented in the city's industrial

sector (Munck 1985; Hepburn 1996). Finally, a corollary of the further 'afieldness' of the 1911 migrations was a decline in the more localised movements that had characterised the 1851 pattern. This can be seen through the prevalence of purple squares in figure 3 (which indicates less than expected migration). Localised movement was still prevalent in 1911 but not to the extent to which it had been in 1851. Even those counties that contained provincial cities became less attractive to their neighbouring populations. Clare people, for example, who had made up the bulk of migrants into Limerick in 1851 seem to have become more inclined to make the journey across the country towards the capital. Similarly, Kerry people now favoured Dublin over Cork, as did Cork people over Waterford, and Tipperary people over Kilkenny.

Mapping the differences between the 1851 and 1911 trends therefore demonstrates an overall increase in mobility all over the island, both in terms of directions and distances (indicated by the greater range and wider spread of counties now receiving migrants). It also demonstrates a strengthening of the Dublin and Belfast catchment areas, and a decline in the prevalence of localised migrations evident in the 1851 map. Internal migration, during this period, while limited when viewed in relation to emigration, did increase. People were now moving longer distances than was evident sixty years earlier while the more localised provincial movements that had previously been prevalent were now less important.

Male-female ratios

Finally, we examine the different orientations of men and women in 1851 and between 1851 and 1911. Existing scholarship indicates that the social changes that took place during this period were geographically uneven (Johnson 1994; Gribbon 1996) and that they affected men and women in varied ways (Daly 1981b; Guinnane 1992). The move towards single inheritance began earlier in eastern counties, thereby incentivising the move off the farm for those not inheriting earlier than in the west. Moreover, opportunities for women in domestic service and for men in transport and distribution services were also more numerous in the more urbanised and commercialised eastern counties, thereby further stimulating migration within and towards this part of the country for those released from the land (Fitzpatrick 1996). The geography of textile production in the north had been shifting since the early part of the century. Domestic production was originally widespread across the northern half of the country. However, as the sector industrialised it moved from being home based to being factory based and in doing so production (and employment) became concentrated in the urban centres of the north-east. This stimulated migration among Ulster men (and increasingly women) who found work in factories and amongst women (and to some extent men) who found employment in the spinning and weaving sectors as well as in finishing off occupations such as embroidery and lace making that developed alongside and complimented mechanised textile production. Elsewhere in the country, the introduction of agricultural labour-saving technologies in the second half of the nineteenth century, and in particular the development of creameries, meant that what had once provided income-generating

opportunities for rural women were transferred to men (Guinane, 1998, Daly 1981b). For rural women who were expected to work on the farm and in the home, were often regarded as subservient to males, and for whom income generating opportunities were being eroded (Kennedy 1973; Johnson 1990), and for ambitious males not in line for inheritance, the possibilities of elsewhere cannot but have been attractive.

Here we map the gender balance between males and females to explore how their movements changed over the period. Mapping males and females as raw data shows that in general, men and women followed similar patterns and conform to the movements observed in the previous section. However, to look more closely at the variations between men and women within those trends, we map the gender balance of migrants in 1851 and 1911 compared to that of the population in the origin county coming from and going to different counties (Figures 4 and 5). Here red indicates where females are overrepresented (that is where the gender-balance of migrants is more female than that of the origin county's population) whilst blue indicates were males were over-represented.

Figure 4a and b: Gender differences origin-destination in 1851 (a left) and gender differences origin-destination in 1911 (b right)

Female migration in 1851 was higher than that of males, with 112 females migrating for every 100 males. However, as can be seen from the prevalence of red cells surrounding the home cells in figure 4a (left), in 1851 women migrated shorter distances than men and did so in much larger concentrations. In most cases, these differences are statistically significant (chi-statistic; p=95%). However, while women tend to dominate local out migration this tendency tapers off as one moves westwards. In very few instances did women migrating from west of Ireland counties out-number males even in their

movements to neighbouring counties. Moreover, while male migration was lower than that of females, males outnumbered females in more long-distance moves. Possible explanations for the spatial variation in these gender differences can be gleaned from the migrant occupation data that accompanies the 1851 census. Only 22% of male migrants in 1851 were classified as agricultural servants and labourers and only 6% were farmers and graziers in spite of the fact that these were the key employment sectors for rural males at this time. A further 6% of male migrants were miscellaneous labourers and messengers. The remainder worked in a broad range of professions from bakers and bootmakers to policemen and spirit dealers. This suggests that overall opportunities for migrating males were varied and primarily non-agricultural. Options for women were more limited. The majority of female migrants in 1851 (66%) had 'unspecified' employments indicating that they were possibly not working outside the home/farm. As a result, it is difficult to ascertain if they had moved for employment or for/as a result of marriage.[4] Where female migrants did state their employment, domestic servant was the predominant occupation. These occupations were more prevalent in eastern counties where upper class residences who depended on domestic labour were more abundant.

By 1911 female migrants again out-numbed male migrants. Now there were 119 female migrants for every 100 males. The prevalence of red in figure 4b (places dominated by female out-movement in 1911) provides perspective on the extent and geography of this over-representation. In the south women now dominated overall out-migration, including the longer distance movements, once the domain of men. Women also outnumbered their male counterparts to Dublin and Belfast, although women from northern counties were more likely to go to Antrim and surrounding counties, than to Dublin.

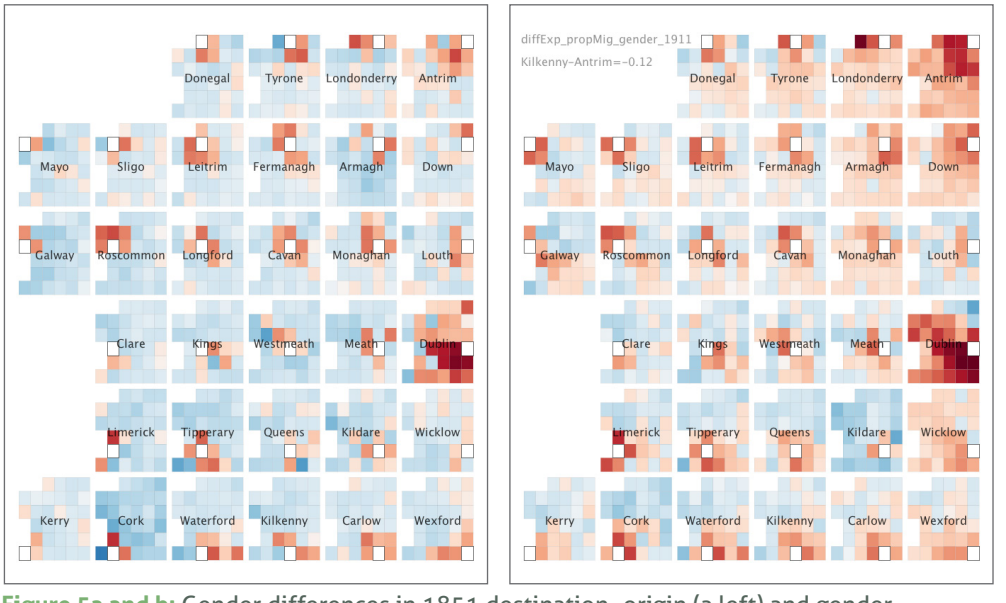

Figure 5a and b: Gender differences in 1851 destination- origin (a left) and gender differences in 1911 destination-origin (b right)

The impact of these changes on the places where migrants settled is visible in figure 5. As would be expected the localised nature of female outmigration in 1851 (Figure 5a) can be seen in the prevalence of red squares surrounding home squares. Also evident is the particular attractiveness of Dublin for women where female migrants from almost every county now outnumbered their male counterparts. As 44% of women with occupations in Dublin in 1851 were employed as domestic servants and given Daly's work on domestic service in parts of Dublin (Daly 1981a), it can be assumed that this is what the bulk of those, who did not become housewives did. The impacts of the increased mobility of women in 1911 are evident in figure 5b. By 1911 the in increased dominance of women in all places is evident, as well as their dominance in Dublin. Women from almost all counties, except those around Antrim, outnumber their male counterparts in Dublin and Antrim/Down, containing Dublin city and Belfast. Over-representation of females in city migration can be seen in figure 6 for 1851(figure 6a) and 1911(figure 6b). In 1851 women female migrants outnumber male migrants to all most all city destinations and by 1911 this over representation in city destinations had increased. However, while women outnumbered their male counterparts in Belfast, in Dublin, the attractiveness of the city over the county amongst females is less obvious. This is possibly a result of the fact that many big houses and country estates in county Dublin provided domestic employment for migrant women as did city residences, and as the upper middle classes moved out of the city, so do did their need for domestic help (Aalen 1992, McManus 2018). Between 1851 and 1911, therefore the geographies of female migration changed. In 1851 women's movements were very local. By 1911 they were moving longer distances, travelling in larger numbers and were more attracted to large urban centres (or to their adjacent hinterlands).

Figure 6 a and b: Gender differences in 1851 destination- origin with city county data separated for Belfast, Dublin, Kilkenny, Waterford, Cork, Limerick and Galway (a left) and gender differences in 1911 destination- origin with city and county data separated (b right)

Conclusion and Recommendations for Further Research

In this paper, we have used innovative OD maps to explore changes in internal migration in Ireland between 1851 and 1911. Our findings show that whilst internal migration was limited when compared to the numbers of people emigrating from Ireland, or indeed to the levels of internal migration that was happening in other European countries at this time, changes did take place. The 1851 maps show that over most of the island internal migration up to that point largely involved the movement of people to neighbouring counties, even in the east where internal migration was higher. In addition to these local movements, the data also show that Dublin and Antrim were both destination counties, Dublin attracting people from all over Ireland, but more prominently from its immediate hinterland, and Antrim attracting migrants primarily from counties that would eventually become the six counties of Northern Ireland. As outlined above, the concentration of employment opportunities in these centres, coupled with a changing rural economy help to explain this pattern. Also evident from the data is the fact that in 1851 women tended to make more localised movements whilst men moved further afield. By 1911, there was a moderate 4% increase in mobility all over the island in terms of the numbers of people now classified as migrant. However, migrants were now moving farther distances, being less likely to move to neighbouring counties and more likely to move towards the two principal cities. Dublin attracted more than expected migrants from all over Ireland, as did Antrim, although Antrim drew larger numbers from its northern catchment area than it did from the south. This resulted from an intensification of those processes outlined above, the increased concentration of opportunities in these key areas, and a parallel decline in opportunities across the rest of the island. Also, evident here is the increasing mobility of women everywhere and in particular in their movements towards Dublin and Belfast. As outlined by Bourke (1993), employment opportunities for women in rural Ireland declined in the period under review. Here we see how women responded to that process. We do see however, some nuances with regard to the geography and gender of movement towards these cities. Men from northern counties, were more numerous than their female counterparts in Dublin, and there were opportunities for women in both Dublin city and county, whereas in Antrim women were more prevalent in the city.

While this paper does not refute the modest levels of Irish internal migration in the period under review here and recognises the limitations of the data on which the research draws, it does shed light on some of the more nuanced changes that were taking place in the sixty years immediately after the famine. More detailed perspectives on the migratory patterns of these internal movers can be gleaned from other sources. The 1901 and 1911census for example, documents place of birth along with age, gender, marital status, number of children, birthplaces of children, position in the household, literacy, language and occupation of people at the level of the individual house, data which can be used to trace more complex migratory patterns. Roscommon-born Mary Cremer for example, was living in Dublin with her Monaghan-born prison warden husband in 1911. They had 11 children, the oldest group of whom was born in Belfast, followed

by a middle group born in Offaly and a younger cohort born in Dublin. The Ryans lived two doors down. They came from Tipperary where they had one son, followed by three more children who were born in England, and a final son born in Dublin. More work is needed on these sources, to excavate the very detailed internal migration patterns therein. Church, health, prison, and school records would also provide perspectives on the movements of individuals, although this data may be more piecemeal. Institutions such boarding schools, convents and monasteries, or constabulary and military barracks are all sites that attracted migrants. The role of institutions as facilitators of mobility has been suggested in the literature (Hatfield 2019, Crossman 2018, Cox 2018) as has the expansion of the railway and/or other forms of public infrastructure (Gribbon 1996). How these institutions connect with the patterns identified here needs more research. Evidence from one rural town indicates that many of those who had come from other places worked in public service or infrastructural development. More qualitative work is also needed if we are to understand the motivations behind people's movements. We can only speculate on the extent to which the experiences of the Donegal woman who moved to Londonderry before eventually settling in New York were universal. As she explained it:

> *Well, we didn't have anything to do in Ireland there was no work. And you didn't want to be poor all your life. You could have married an old farmer if you wanted to and stay there and work on that old farm.*[5]

The bleakness of rural life has also been depicted in imaginative literature. Characters in George Moore's *The Untilled Field* regularly note the emptiness of the countryside while the rural town, with 'broken pavements and dirty cottages' and nothing of significance other than the church, appears no more attractive (Moore 1990, 14). The only options for Moore's characters not in line for the farm were the church, the constabulary or the post office, career choices that did involve movement. Literature also sheds light on the experiences of migrants as they settled in new locales and on their reception as in-coming 'Others'. The negative view of the 'thundering big country fellows' who were recruited into the Dublin constabulary is clearly depicted in Joyce's *Dubliners* (Joyce 2006, 125). However, while migrants have been represented by the more well-known authors, there is scope for research on the written experiences of the multitude of lesser-known writers (Loeber and Loeber 2006), teachers and other public servants for example, who as highlighted in the literature above, moved with and for work. The 'performance' of internal migration, recognised as the embodied experience of moving from one place to another has been usefully explored in other contexts (Halfacree and Merriman 2015). Creative writing, as well as letters, diaries, and memoirs are sources through which such 'performances' might be explored to give life to and provide better explanations for the broad but subtle changes in internal migration identified in this research. This would facilitate a fuller understanding of the connections between the patterns identified here, and the social changes outlined above, as they played out nationally, as well as at more local scales, and of how what has happened in Ireland, resonates with what has happened elsewhere. Our identification of the patterns of change, using novel visual techniques, aims to stimulate such research.

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Notes

[1] You can also find further explanation here https://observablehq.com/@aidans/historical-county-to-county-in-ireland and a video explanation here at https://vimeo.com/71454100

[2] While most country boundaries remained the same over the period, there were some slight changes in the county boundaries of Roscommon, Mayo and Sligo which resulted from the The Local Government (Ireland) Act 1898.

[3] Logarithmic colour scales show variation across the different magnitudes of migration, but it is important to note that it does this by exaggerating low numbers of migrants more than high numbers. We do this because the actual numbers of migrants moving from some places to other places were low. In 1851 8% of people in Ireland were living in counties in which they were not born. To redistribute these migrations into the 32 counties that they migrated to and from using a normal colour scale would render them as invisible here as they are in the existing literature.

[4] However, as outlined by Daly, women's contribution to family incomes often went unrecorded because traditionally their labour was not seen as 'work' and because many women did not disclose that they were earning (Daly 1981b).

[5] Extract taken from Bertha Devlin 'Journeys: The Peopling of America® Center, 1550 – 1890' exhibit, Ellis Island Museum, NYC (April 2012)