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**THE POLITICAL AND SOCIAL
CONSTRUCTION OF WORK IN
NORTH EASTERN ENGINEERING
AND SHIPBUILDING, 1880-1918**

MARK BALDWIN STODDART

A thesis submitted in partial fulfilment of the
requirements of the University of
Northumbria at Newcastle for the degree of
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Design & Social Sciences and the School of
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Abstract

For fifty years or so at the end of the 19th century the North East of England was an engineering and shipbuilding powerhouse, and a huge mining area. A fast growing population with concomitant infrastructure developments reflected the resulting demand for labour. Yet by 1932 one of the exemplars of this success, Jarrow, was in such dire economic straights that it was described as a “workhouse without walls”.¹ The causes of this precipitous decline have been debated, at least in general terms, by historians for years. Was it the failure of owners to adopt more modern management practices, the alleged refusal of the City of London to invest in the UK when they could generate better returns abroad, or a gradual institutional sclerosis paralysing the ability of business to adapt to changed circumstances? This PhD looks at the rise and decline of NE engineering and shipbuilding, focusing on communities rather than class, and looking at what bound them together as well as what kept them apart. This though is not a family history. Through an examination of the political and social construction of work, including case studies of specific workplaces, as well as the ways in which the communities lived, it attempts to provide a more detailed look at ways in which the many thousands of individual choices and decisions made by those community members, which whilst in their own context were rational, in the broader sweep of history created the conditions for long term decline.

¹ Betty D Vernon, *Ellen Wilkinson 1891–1947*, (London, 1982), p138.

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Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others.

I declare that the Word Count of this Thesis is 73,073 words

Name: Mark Stoddart

Date: 12th August 2022 / 28th November 2022

The Prologue

In the heart of Elswick, the John Buddle Work Village can be found on Buddle Road, a mile and a half to the west of the centre of Newcastle. John Buddle is just another name to the occupants of the Work Village, yet John Buddle himself was no ordinary man. He was a prominent self-made mining engineer and entrepreneur who had a major influence on the development of the Northern Coalfield in the first half of the 19th century; supporting and encouraging the introduction of the Davy Lamp in mines, the keeping of ventilation records, and the prevention of flooding. He was also a shipping owner who built Seaham Harbour in County Durham and also chairman of the company that built the Tyne Dock at South Shields. His working life encompassed some of the most significant developments in mining, shipping and engineering, each of which were to have an enormous impact on the surrounding area.²

Taking the Work Village as the centre point, a circle of about a mile in diameter in any direction covers an extraordinary amount of industrial and social history. From the windows at the front of the building the view to the south and across to the far bank of the River Tyne is of Whickham, where some 616 thousand tons of coal were mined in 1684/5 and wagonways covered the hills bringing coal down the banks of the Tyne for shipment around the UK and abroad.³ Some remains of the

² See "The King of the Coal Trade", pamphlet published by the St James' Heritage & Environment Group, Local History Series No 1. A longer account of his life can be found at www.mininginstitute.org.uk

³ David Levine, & Keith Wrightson, *The Making of an industrial society: Whickham 1560 – 1765* (Oxford: Oxford University Press, 1991) P4.

Whickham Wagonways can be found near the world's oldest railway bridge at Causey Arch (some 6 miles to the south), which linked the mines owned by the Bowes family to the River Tyne.

Looking to the south east across the river from the Work Village a huge structure can be seen which is believed to be the largest timber construction in Europe. Opened in 1893 by the North Eastern Railway Company, the Dunston Staithes enabled the loading of coal delivered from County Durham directly onto waiting colliers (coal ships) ready for the onward journey to markets in the UK and abroad. At the industry's peak around 5.5 million tons of coal were moved this way each year. The Staithes have been subjected to several arson attacks over the past decade and are currently being restored and occasionally opened to the public.

To the west is the Metro Centre, built on the site of the Dunston Power Station, where two coal fired stations produced an output of nearly 350 megawatts, and powered an area covering Northumberland, County Durham, Cumberland, Yorkshire and as far north as Galashiels in Scotland. In the middle of the river as seen from the windows there was once a large island, with a racecourse and a pub, but which disappeared as the river was dredged in the latter part of the 19th Century, an action that enabled the building of warships and other vessels in the Elswick shipyards. On the north bank of the river, a five minute walk down the hill from the Work Village but invisible from the site are some remains of the

Armstrong Works, including some of the brickwork from the blast furnaces.

A few street names serve as reminders of what was on these sites and the role they played in making the North East one of the most important engineering and shipbuilding locations in the world between 1850 and 1950. But apart from a few faded signposts on the riverbank there is little other evidence. The main road on the north side of the river, Scotswood Road, is a thoroughfare into the City of Newcastle. Alongside this road ran the northern branch of the Newcastle to Carlisle Railway, bringing thousands of workers to the Armstrong works to add to the thousands who lived in the terraced housing, most of which has now been demolished, which spread up the hill to the West Road. Scotswood Road was also well known for the number of public houses along its length, a significant number of which took their names (The Hydraulic Crane, The Blast Furnace, The Gun, The Shipwrights' Arms) from their proximity to that part of the works. None of those pubs, and very few of the terraced houses, stand today.

Initial Research and Sources

It is with this set of visual clues and hints in mind that the initial research questions began to form. Why is there no longer a thriving engineering and shipbuilding industry along the River Tyne (and for that matter anywhere in the North East)? What was working life like, not just for the workers who built the ships and the engines, but for the clerks, drawing office staff, foremen, managers, and owners who ran them. What were the processes through which the area developed, and what were

the driving forces that brought people to work there? What were the effects on the area's politics and social structures? What was the relationship between the physical geography of the region and the economic geography?

As the descriptions above indicate, there has been a less than ideal approach to the remembrance of times past, and the same can be argued about the sources available to begin to explore those questions.⁴ Archives from some of the shipbuilding and engineering firms do exist, but they are often sporadic, limited and only partially catalogued. Local history groups have filled in some of the gaps, especially with photographic evidence, but the reality is that very few comprehensive business records remain. As well, potential sources on communities such as Churches and Chapels are sporadic and infrequent. The Tyne and Wear Archives, the Northumberland Archives, and to a lesser extent the Durham County Records Office contain documents and other material from ship builders and engineering firms, and there is some significant material to be found in the Marine Special Collection at Newcastle University.⁵ Newspapers of the period often provide commentary on business matters and the occasional series on developments in topics

⁴ An honourable exception to this is the work done by Dr Frank Atkinson and the creation of Beamish Museum. Whatever the merits or otherwise of 'Living Museums' (see for example Sandra M. Shafernich '*On-site museums, open-air museums, museum villages and living history museums: Reconstructions and period rooms in the United States and the United Kingdom*', *Museum Management and Curatorship*, (1993) 12:1, 43-61) the collection of machinery, materials, ephemera and other material amassed at Beamish is a vital link with the past.

⁵ https://www.ncl.ac.uk/library/special-collections/browse/collection_details/?id=148#:~:text=Material%20can%20be%20requested%20for,unlikely%20to%20get%20an%20answer.

such as engineering.⁶ Periodicals such as the 'The Engineer' provided detailed coverage of engineering and shipbuilding firms and their products and people.⁷ Ordnance Survey and other maps, together with local Directories provide evidence of clustering, industrial and housing development, and consequent changes over time.

The voices of those who lived and worked during the period under study are rarely recorded. But owners, managers, skilled craftsmen, Union leaders, and even labourers were called before Parliamentary Committees and their verbatim evidence to the frequent and voluminous enquiries provides invaluable insight into their thinking on a lot of the most contentious issues of the period.⁸

Research Questions

As the research progressed and evidence emerged, the initial set of questions was refined into five main topics.

- 1) How far did the socio-economic structures and institutions of the North East as an industrial district act as a stimulant to its growth and decline?

⁶ See for example: FROM OUR SPECIAL CORRESPONDENT. "American Engineering Competition." Times, 4 June 1900, p. 8. The Times Digital Archive, <https://link.gale.com/apps/doc/CS134407876/GDCS?u=unn&sid=GDCS&xid=6a82fdfa>. Accessed 8 Apr. 2020.

⁷ The Engineer was founded in 1856 by Edward Charles Healey, an entrepreneur and engineering enthusiast with financial interests in the railways. Published weekly, topics covered include inventions and patents as well as stock prices of raw materials in the 19th century. There were also detailed images and drawings that provide a detailed visual record.

⁸ See in particular the Minutes of Evidence, Group A (Mining, Iron, Engineering, Hardware, Shipbuilding, and Cognate Trades) of the Royal Commission on Labour, February 1893, C6894-vii; the Report of an Enquiry by the Board of Trade into the Earnings and Hours of Labour, VI Metal, Engineering and Shipbuilding Trades in 1906, Cd5814, published in 1911; and Minutes of Evidence, Royal Commission on Trade Disputes and Trade, 1906, Cd 2826.

- 2) How far were social relationships an underpinning factor of economic success as well as long term decline?
- 3) What were the processes through which individual and collective interests were expressed, and interests maintained?
- 4) How did employer / employee relations work in reality?
- 5) How did the changing nature of work as the Region developed affect the ways in which society organised, and the ways in which politics happened?

The next issues to be decided were the period to be examined and the geographic area(s) to be covered. Periodisation is a fraught issue for any historian, and in this thesis there will be some inevitable 'leakage' outside the dates chosen of 1880 to 1918. The end point of 1918 was chosen because of the profound changes to daily, and more especially working life in shipyards and engineering that the War imposed. 1880 was chosen because it was the start of Gladstone's second administration, one that saw significant changes in the franchise and the distribution of Parliamentary seats, as well as the start of a long period of growth in GDP per UK worker, and a similar rise in life expectancy.⁹ While overall economic performance still suffered from depressions and booms, those two factors played an important part in the overall North East picture.

Geography plays a vital part in this thesis, and the concepts of Region, District and Cluster are examined in detail on pages 28 to 32. For the purposes of the thesis, the North East is considered as covering the

⁹ Roderick Floud and Donald McCloskey, *The Economic history of Britain since 1700 – Volume 2:1860 to 1939*, (Cambridge: Cambridge University, 1994) p 3-7.

areas of Northumberland, Durham, and what is now North Yorkshire down to the River Tees, although as with dates some 'leakage' over borders does occur.

Finally, a word should be said about the quotations and Music Hall lyrics at the start of each chapter. In trying to understand the social construction of work, popular culture appeared to be a good starting point, and indeed occasional generic descriptions about working conditions do appear in a few novels. But women's work outside the home is generally implied rather than explicit, and it has been argued by D.J. Taylor that Victorian novelists were 'habitually uninterested' in how their characters made their livings and how work provided them with means to eat, drink, and clothe themselves.¹⁰ Two slight exceptions to that can be found in chapter 1 and chapter 6 with the quotations from Jerome and Gissing.¹¹ The music hall, though, was much closer to life as it was lived than the novel, so work was more frequently noted in the songs and acts that toured the country. The extracts chosen represent some of the ways in which performers and audiences recognised the impact that work and politics had on their daily lives; sometimes humorous, sometimes sad, but recognisable to all.

There is therefore some fertile ground to plough, or to be a little more colloquial, a potentially rich seam to be mined. Even if the motherlode is struck, there will be plenty more material to uncover in future work.

¹⁰ D. J. Taylor, "Worker bees," *Times Literary Supplement* (18 & 25 December 2015): 3

¹¹ Jerome K Jerome's 'Three Men in Boat' is probably the ultimate antidote to a working life.

Chapter 1 - Introduction – Work and Community in North Eastern Engineering Industries – Networks, Clusters, and Institutional Sclerosis

I like work, it fascinates me. I can sit and look at it for hours. I love to keep it by me: the idea of getting rid of it nearly breaks my heart.

Jerome K Jerome, *Three Men in a Boat*, 1889

Introduction

Andrew Popp has recently argued for a dialogue between business history and the history of the everyday on the grounds that the failure to have that interchange denies to business ‘a whole realm of significance’.¹² This thesis attempts to move in the direction of that dialogue and does so through an extension of ‘business’ beyond just the ‘enterprise’ to include the people and institutions that made up the communities in which business and the everyday ‘happened’.

Business matters, and of course will have played an important part in the way people experience their everyday lives. Business history has tended to focus on the organization or on specific groups of individual participants such as directors, owners or managers. This though ignores that vast majority of participants who did not hold such elevated roles, those for whom the everyday was the everyday of work rather than business. It is in this milieu that relationships are formed and maintained, where value and meaning can be found, and where a lot of the ‘everyday’ happened.

¹² Andrew Popp, *Histories of Business and the Everyday*, (Enterprise and Society, Vol 21 Number 3), p622-637.

The everyday can / should therefore be an important contributor to understanding of the business lifecycle, of innovation and change, and of the relationship between people and business. Of course, this is not just about individuals, this is also about the collective ways in which groups and businesses interacted. Central to this are three concepts – clusters, community, and social capital. Starting with the latter, social capital can be thought of as something that is ultimately a resource, something that can be for public good or private benefit. ¹³ It has also been defined by Francis Fukuyama as: ‘the ability of people to work together for common purposes in groups and organizations’ ¹⁴ and ‘...the existence of a certain set of informal values or norms shared among members of a group that permit cooperation among them’ ¹⁵ The thesis will also touch on the ideas of Granovetter. He argues there is a contrast between the utilitarian idea that behaviour is rational, self-interested and only tangentially affected by social relations, and what he calls ‘embeddedness’, where social relations so constrain behaviour and institutions that thinking of them as independent is false. ¹⁶

This leads on naturally to the idea of community because the concept of social capital implies the existence of community. On the other hand, that community is constituted, at work, at home, in a social or

¹³ W. Baker, 1990. ‘Market Networks and Corporate Behaviour.’ *American Journal of Sociology* 96: 589 – 625.

¹⁴ Francis Fukuyama, 1995. ‘Trust : the social virtues and the creation of prosperity’. London: Hamish Hamilton.p10

¹⁵ Francis Fukuyama, *ibid.* 1995.

¹⁶ Mark Granovetter, ‘Economic Action and Social Structure: The Problem of Embeddedness’, *American Journal of Sociology*, Vol. 91, No. 3 (Nov., 1985), p481

sporting context. It is through community therefore that social capital is developed and expended.

There then seems to be a logical extension of these two concepts into business history with the idea of clustering. If clustering is extended beyond the boundaries of business and into the realms of housing and the social infrastructure required to support the clustering of businesses, then there is a natural linkage between clusters, community, and social capital, with all three being dependent on each other. This raises the interesting possibility of linking the concept of community with that of cluster; are they aspects of the same phenomenon or separate ideas altogether? This relates to the idea proposed in Wilson and Popp that actors in networks are not just important because of their positions in those networks but because of the attributes they collect from their membership of wider groupings within that host community.¹⁷ This idea is examined in Chapters 1 & 2.

Building on this notion, as previous studies of clusters have noted, supportive social structures were important in the creation of business structures. Prime examples of this would be the Quakers of Darlington where external investors 'were more than fellow Quakers: they were close relatives of the Darlington promoters, and some were themselves of recent Darlington origin.'¹⁸ This opens up the intriguing question as to what extent were actions such as demarcation disputes (examined in

¹⁷ J F Wilson and A Popp (Eds) in 'Industrial Clusters and Regional Business Networks in England, 1750 – 1970' (Ashgate, 2003) p14

¹⁸ Gillian Cookson, 'Quaker Networks and the industrial development of Darlington 1780-1870', , in 'Industrial Clusters and Regional Business Networks in England, 1750 - 1970 Eds J F Wilson, A Popp (Ashgate, Aldershot, Hants) p155-173

Chapter 4) related to the life cycle of a cluster, and if so in what ways? This echoes back to Marshall's idea of the 'industrial atmosphere or *genus loci*' in which industrial districts are located not just physically but in specific social spaces.¹⁹

What then is the appropriate way to bring these concepts to bear on business history? Two further concepts need to be introduced at this point, concepts that are germane to this thesis – the grand narrative and agency. The grand narrative in this thesis is the arc of success and decline in a specific sector, in a specific place and time. This specificity, it might be argued, precludes it from being a grand narrative, but grand or otherwise it is the narrative that holds the thesis together.

The second concept, that of agency is crucial. Andrew Popp argues that most business history concentrates on institutions and the structures within which they work, and by doing so tends to align agency to elites holding power such as the management of large corporations; to institutions such as business enterprises; or at the highest level to 'capital' and 'markets'.²⁰ By bringing in social capital, communities and clusters, historians can start to see agency as a multifaceted phenomenon belonging as much to the carpenter as to 'capital'.

At what level of detail should these issues be addressed? This is in many ways out of the hands of the historian, depending on the available empirical evidence. Detailed analysis of industrial districts in England has been a rich and fruitful avenue for business historians. Manchester has

¹⁹ A Marshall, *Industry and Trade*, London, MacMillan, 1919, p pp 284-7

²⁰ Andrew Popp, *ibid*

been examined by Wilson and Singleton, nineteenth century industrial Birmingham by Carnevali, the Staffordshire Potteries and Widnes by Popp and by Lane, Sheffield by Lloyd-Jones and Lewis and by Corker.²¹ More recent research has extended into Wales and Scotland (Lloyd Jones on Denbighshire, Mackenzie and Perchard on the Scottish Highlands).²² This thesis takes a slightly different approach, looking at a UK region and two closely related industries over a specific timeframe and examining four specific aspects (politics, working practices, disputes, and community and social construction).

Is this microhistory? It is not exactly in the way that, for example, Sigurdur Gylfi Magnússon, John Brewer, or Istvan M Szijarto define it. Magnússon argues that a microhistory, by reducing the scale of observation, can reveal individual relationships within each social setting. They also focus on outliers rather than the average individual.²³ Brewer argues that there are two type of historical 'landscape', what he calls 'prospect' and 'refuge'. Prospect history for Brewer is a large scale

²¹ J F Wilson, J Singleton, 2003, "The Manchester industrial district, 1750 - 1939: clustering, networking and performance", in *Industrial Clusters and Regional Business Networks in England, 1750 - 1970* Eds J F Wilson, A Popp (Ashgate, 2003) pp 44 – 67; Carnevali F, "Malefactors and honourable men': the making of commercial industry in nineteenth-century industrial Birmingham", in J F Wilson, A Popp *ibid* pp 192 – 207; A Popp, "Trust in an industrial district: the Potteries, c.1850 - 1900" *Journal of Industrial History* 2000, Vol 3 pp 29 – 53; A Popp, "Networks and industrial restructuring: the Widnes district and the formation of the United Alkali Company, 1890", J F Wilson, A Popp *ibid* pp 208 – 228; R Lloyd-Jones, M Lewis, "Personal capitalism and British industrial decline: the personally managed firm and business strategy in Sheffield, 1880 - 1920" *Business History Review* 68 364 – 411, 1994

²² B Lloyd Jones, 2023, 'Forging ahead – the men behind the industrialization of the Denbighshire coal field', in *Industrial Clusters – Knowledge, Innovation Systems and Sustainability in the UK* Eds J F Wilson, C Corker and J Lane; N G Mackenzie, A Perchard, 'Industrial Clustering in a peripheral region: Path dependence and creation in the Scottish Highlands' in J F Wilson, C Corker and J Lane *ibid*

²³ Sigurdur Gylfi Magnússon, *Journal of Social History*, Spring, 2003, Vol. 36, No. 3 (Spring, 2003), pp. 701-735, Oxford University Press Stable URL: <https://www.jstor.org/stable/3790736>

overview, while refuge history is 'close up and small scale' with an emphasis on interdependence, interiority and intimacy.²⁴ Szijarto emphasises agency as well as the desire to answer a 'great historical question'.²⁵ This thesis takes elements of all these ideas and applies them to a specific time and place with the aim of looking towards a possible explanation of the 'great historical question' of decline. This explanation can be found, the thesis will argue, in the myriad decisions made by the various actors, whether the individuals, institutions or communities that made up the environment that was the North East in the time under review. If there is a label to be applied it is probably more of a mini or, as Andrew Popp suggests, a meso history rather than a micro history.²⁶ It might even be said that this work is closer to the German idea of the 'Alltagsgeschichte' which "understands historical continuity and change as a result of the actions of individuals and groups."²⁷

This thesis contends that the ideas of institutional sclerosis and rigidity are incomplete as explanations for the long term decline in the economy of the North East, and that it is necessary to look in more detail at the people, the networks and communities that constituted those institutions to fully understand what was happening. To do so requires an examination of the socio-economic structures and institutions of the North East as an industrial district and the extent to which they acted as a

²⁴ John Brewer (2010) *Microhistory and the Histories of Everyday Life*, Cultural and Social History, 7:1, 87-109

²⁵ Sigurdur Gylfi Magnússon and Istvan M Szijarto, 'What is Microhistory? Theory and Practice' Routledge, Abingdon 2013, p10

²⁶ Andrew Popp, 'Histories of Business and the Everyday', *Enterprise and Society*, Vol 21 Number 3, p622-637

²⁷ Sigurdur Gylfi Magnússon and Istvan M Szijarto, *ibid* p34

stimulant to its growth and a cause of its decline. As part of this, how far were social relationships an underpinning factor of economic success as well as long term decline? This chapter will outline some thinking on these areas and provide the groundwork for subsequent chapters.

Wilson and Popp have explored the nature of Industrial Districts in the UK, and this thesis attempts to build on and extend their work by looking at the North East through a range of different lenses.²⁸ It also starts to construct a dialogue between business history and the history of the everyday by looking where possible at the lived experience of workers and managers in shipbuilding and engineering.

A walk today along the banks of any of the three main rivers that flow through the North East of England, the Tyne, the Wear, and the Tees provides for the observant some hints of industrial heritage, but the observer would have little to guide them as to the sheer size and scope of that heritage. This area was not only the cradle of the steam locomotive and one of the biggest coal mining areas in the world, but it was also the place where at one point at least one third of the world's shipping tonnage was built. It also had the first street in the world to be lit by electric lighting, was a major producer of glass and glassware, contained some of the biggest steelworks in Europe, and had been in the eighteenth century one of the biggest producers of salt and other chemicals.²⁹ Given this huge economic strength, it is a concern that in 2017/18 the North East

²⁸ John F Wilson and Andrew Popp (eds), *Industrial Clusters and regional Business Networks in England, 1750-1970* (Aldershot: Ashgate Publishing 2003)

²⁹ The first street lit by an incandescent light bulb was Chesterfield Street in Chesterfield which was lit for one night by Joseph Swan's incandescent lamp on 3 February 1879.
<http://www.rsc.org/Chemsoc/Activities/ChemicalLandmarks/UK/JosephSwan.asp>

region, with around 4% of the UK population, had created fewer new jobs (3% of the total) than any region except Northern Ireland.³⁰ So, this is a story of decline, and decline from a significant peak. To understand that decline it is necessary to look behind the headlines, and look in depth at the people, their networks and their communities who were part of that peak and see whether, in creating that peak they were also sowing the seeds of decline. To do so this thesis will examine how these networks and communities worked together or alongside each other, how these relationships were expressed socially and politically, and at how these factors were reflected in the way these people and communities lived and worked together. Through examining examples from North Eastern engineering and shipbuilding this thesis will argue that the idea of institutional sclerosis is insufficient to explain both the success and the long term decline that followed. Sclerosis is a gradual process which is hard to identify until it is too late. Institutional sclerosis as a concept was developed by Mancur Olson.³¹ Olson argued that in stable liberal democracies, groups develop and become established vested interests. This accretion of vested interests ultimately stifles competitive economic development and undermines a government's ability to reform the system. This sclerosis saps an economy's dynamism and lowers growth rates. Applying this concept to North East industries and the institutions that were intimately and peripherally involved in them, new insights into the roots of decline will be revealed, including the ways in which what

³⁰ BBC News report, 6th December 2018

³¹ Mancur Olson, *The Rise and Decline of Nations*, (New Haven: Yale, 1984).

Elbaum and Lazonick define as institutional rigidity manifested itself.³² This rigidity can be characterised as a failure by institutions to move beyond existing constraints that encouraged a conservative approach to change, thus minimising individual and collective efforts to respond to changing marketplace dynamics. Developing the sclerosis and institutional rigidity arguments along with the ideas of networking and clustering will form the backbone of the thesis.

It will argue that institutional sclerosis and rigidity were driven by the people who were their members, involuntarily or otherwise, rather than the institutions themselves. Whilst decision makers and participants all behaved as rational actors, the short term nature of decision making, whether by owners, managers, trade unionists, craft workers or labourers failed to acknowledge the increasing complexity and technological changes the marketplace required.³³ It does have to be recognised here that because the United Kingdom and the North East were in a pioneering position, they were not equipped with the tools to adapt over time that were available to those countries and regions that followed. First-mover advantage can be quickly overtaken by those in 'fast second' position who can watch, learn, and fit the acquired knowledge to

³² "Britain was impeded from making a successful transition to mass production and corporate organisation in the twentieth century by an inflexible nineteenth century institutional legacy of atomistic economic organisation". Bernard Elbaum and William Lazonick, *An Institutional Perspective on British Decline in The Decline of the British Economy* edited by Bernard Elbaum and William Lazonick, (Oxford: Oxford University Press 1986) p 15

³³ The idea of the 'rational actor' was developed by Adam Smith in response to Thomas Hobbes question as to how a society comprised of selfish citizens exist without excessive authoritarian control. Smith's answer was that the 'free hand' of the market ensured that the common good prevailed. Individuals pursue their goals, which reflect their perceived self-interest. They have preferences which are consistent and stable, and they will pursue the option(s) that provide them with the highest expected utility. This requires them to have knowledge of the alternatives and the consequences of their choices.

changing circumstances. This was reinforced by the constraining effects of networking and clustering, two other concepts that will be examined on pages 28 to 32.

Background to the period

General histories of the region's firms tend to focus on individuals such as Sir William Armstrong but relatively few on the firm of Armstrong's itself.³⁴ There has been an examination of specific periods in the business history of Armstrong's.³⁵ Irving focuses on the various investment decisions made by the firm, particularly their move into motor vehicle manufacture, and examines the nature of the management and whether the speed with which they adapted to change caused relative decline. Histories of other regional firms are limited, although there are biographies of the Stephensons and of Charles Mark Palmer.³⁶ Kenneth Warren's work on managers who worked for Sir William Armstrong reveals some of the managerial issues faced by a complex and growing firm.³⁷ There are extant archives for Palmer's, Hawthorn Leslie,

³⁴ See for example Henrietta Heald, *William Armstrong, Magician of the North*, (Newcastle: Northumbria Press 2010), and on the works themselves see Kenneth Warren, *Armstrong's of Elswick; Growth in Engineering and Armaments to the Merger with Vickers*, (London: Macmillan in association with the Business History Unit of the University of London, 1989)

³⁵ See for example R.J. Irving, *New Industries for Old? Some Investment Decisions of Sir W.G. Armstrong & Co Ltd 1900-1914*, (Business History 17:2, 150-175), 1975

³⁶ See for example for example Victoria Haworth, *Robert Stephenson – Engineer and Scientist - The Making of a Prodigy*, (Newcastle upon Tyne, Rocket Press, 2004), L. T. C. Rolt, *George and Robert Stephenson: the railway revolution*, (Stroud, Amberley Publishing, 2009). For Palmer see for example Kenneth Warren, *Jarrow: Victorian industrialisation and afterwards*, (Newcastle: Leazes Press, 2013). See also Jim Cuthbert and Ken Smith, *Palmer's of Jarrow*, (Newcastle: Tyne Bridge Publishing, 2004).; "Armstrong's River Empire"; Dick Keys and Ken Smith, *Tyne shipyards that supplied the world*" (Newcastle: Tyne Bridge Publishing 2010), Dick Keys and Ken Smith "Down Elswick slipways: Armstrong's ships and people 1884-1918" (Newcastle: Tyne Bridge Publishing 1996).

³⁷ Kenneth Warren, "The builders of Elswick: partners, managers and working men 1847 – 1927", (Newcastle: Leazes Press, 2013).

Armstrong's, and other shipyards, as well as those of locomotive builders such as Stephenson's and R & W Hawthorn, but these are often incomplete and not fully catalogued.³⁸

This thesis begins in 1880, a time of economic downturn, social unrest, and political uncertainty.³⁹ Through an analysis of social and political behaviour, and a case study approach to industrial disputes and individual engineering firms, it will critically examine the concepts of institutional sclerosis and rigidity as the driving forces behind the long term decline of these industries. Crucial to this argument is understanding that institutions are formal manifestations of the communities from which they sprang. Whether trade unions, congregations, Co-operative Societies, sporting, or social clubs, all expressed in some way the preferences of the constituent communities from which they sprang and where they obtained their legitimacy. Institutions are therefore products of their environment, and they are shaped by the people that create, support, participate in, and run them. Therefore, institutions and their characteristics are derived from their communities and retain their legitimacy for as long as that link is maintained. If that legitimacy dissipates, then the institutions might either cease to exist or might seek to find legitimacy elsewhere through a process of transformation. They are also influenced and affected by other

³⁸ For Stephenson's, Tyne and Wear Archive DS.CC1; for Armstrong's TWA D.VA; Hawthorn Leslie TWA DS.HL; Palmer's TWA DS.PAL. Other material can be found in the Newcastle University Marine Technology Special Collection.

³⁹ See for example Solomos Solomou, 'Economic fluctuations, 1870-1912' in Floud and McCloskey (eds) *The Economic History of Britain since 1700, Volume 2 1660-1939*, (Cambridge: Cambridge University Press, 1994).; and Richard Lawton and Colin Pooley, *Britain 1740-1950 – An Historical Geography*, (Great Britain: Edward Arnold, 1992) Chapters 7- 11.

institutions with which they interact, creating a synergistic relationship between people, their institutions, and, by extension, the communities within which those institutions exist. Elbaum and Lazonick's concept of 'institutional rigidities' within Britain, and in particular the North East, will be shown to be not merely 'institutional' but also included wider social relations within the communities where the firms and industries were located.⁴⁰ They were also reflected in the ways in which work was organised (both by management and workers) and the processes through which labour was recruited. Elbaum and Lazonick argue that the British economy, facing increasingly competitive and changing markets at the turn of the century, both at home and abroad, failed to learn lessons from their competition and introduce the necessary innovations and changes.⁴¹ Rigid rules imposed by unions, and the lack of investment in management skills further compounded the problem. Rigidities therefore are part of the explanation, but further exploration into the reasons why the rigidities came about and why they became entrenched is required. This thesis will build on this and develop the idea that institutional sclerosis is a product of the society surrounding those institutions, so it cannot be fully understood without knowing about those institutions and the communities, as well as the networks and clusters that nurture them.

This reflects upon the importance of local institutions, whether Co-op, sporting, church, or chapel in defining the collective, leading on to an understanding of their pre-eminence in, for example, defining voting

⁴⁰ Elbaum and Lazonick, p7 -8

⁴¹ Elbaum and Lazonick, p7 -8

behaviour over bigger 'political' themes. Alan Metcalf, in his work on leisure and recreation in a Northumberland Victorian mining village, examined how sport and recreation brought meaning and pleasure to mining families, and through the physical, social, and economic structures showed how leisure and recreation were fundamental to the variety of social relationships between and also within communities, despite the sometimes horrendous living conditions they endured.⁴²

It is possible to identify at least a tacit understanding between the worker/producers and the entrepreneur/owners that they had some common interests, especially in the continuing health of the local economy, and in many ways that tacit understanding provided an environment in which, in general terms, both sides could continue to prosper. Changing relationships between worker/producers and the entrepreneur/owners can be seen as a 'dialogue de sourds'⁴³ – as businesses increased in size, they often failed to adopt management processes to cope, relying on command and control, usually through family networks. At the same time, the craft unions focussed on job retention and control over their working processes at the expense of other, non-craft workers, and often at the expense of innovations and new technology. Elbaum and Lazonick recognised that relative decline had multiple causes in Britain, and attribute the failure to transition to mass production, as well as corporate organisational structures, in an economy

⁴² Alan Metcalfe, *Leisure and Recreation in a Victorian Mining Community - The social economy of leisure in north-east England, 1820-1914*, (London: Routledge, 2006).

⁴³ Dialogue of the Deaf (<https://www.collinsdictionary.com/dictionary/french-english/dialogue-de-sourds>)

held back by fragmented institutions.⁴⁴ These were compounded by both demand-side and supply-side constraints in the form of limited market openings that would have justified investment in mass production, as well as institutional, managerial, and labour relations issues. Amongst other factors that need to be considered is the speed at which foreign competition emerged, often benefitting from technological and process improvements that were either ignored or were slow to be implemented in the UK. There were often good economic reasons for this happening, not the least being the sunk investments already made by firms which made investment in new ways of working more challenging than for those countries and regions coming anew to the technology. External and internal factors such as a lack of standardisation in products and components will be reviewed as well, given the central importance they held for the continuation of existing processes. Driven partly by customer requirements (most ships were built as one-offs), partly by a lack of investment, and partly by a reluctance by skilled craft workers to lose control over their working practices, these all acted as a drag on the shipbuilding and engineering sectors, resulting in competitor countries overtaking the UK at a rapid pace. As an example, between 1856 and 1900 Greenwood and Batley, a large engineering manufacturer in Leeds with a wide range of products, including armaments, electrical

⁴⁴ Elbaum and Lazonick, *An Institutional Perspective on British Decline*, The Journal of Economic History Vol. 44, No. 2, The Tasks of Economic History (Jun., 1984), p15

engineering, and printing and milling machinery, manufactured 793 differently named machine tools, of which 457 were only ordered once.⁴⁵

Institutions and institutional sclerosis

Integral to the idea of institutional sclerosis is the nature of institutions themselves. As outlined earlier on page 18, institutions are outcomes of communities of interest. Institutions work together and alongside each other with overlapping memberships, for example sports clubs associated with factories or works such as The Elswick Rowing Club based at the Armstrong Works, and The Elswick Leather Works Football Club, to name two from Newcastle's West End.⁴⁶ This leads to the concept of clustering, the idea that industries, groups, institutions, and communities geographically 'cluster' together for mutual advantage and benefit. Both in terms of the development of industry and in the way that workers and businesses grew together, there are strong examples of clustering, whether in the ways that housing developed or in the ways that workers in similar jobs not only lived proximately but also spent non-working time together as well. Clustering can be seen as a defensive measure protecting interests and had the potential to become a destructive measure in reducing the ability to see a bigger picture of social, political and working practice changes.

A network can be thought of as a social structure made up of combinations of individuals and/or organizations. A social or business

⁴⁵ Keith Burgess, *The Origins of British Industrial relations – the nineteenth century experience*, (London: Croom Helm, 1975) p26.

⁴⁶ Local legend has it that the *Stanley Cricket Club* of Byker formed a football team in November 1881 and won their first match 5–0 against Elswick Leather Works 2nd XI. They went on to become Newcastle United.

network contains and is dependent upon relationships and information flows between people, groups, organizations, or other information/knowledge processing groups.⁴⁷ Combining networking and clustering provides a model on which to test some of the regional features of North East engineering. The concept of the industrial cluster is useful here. Wilson and Popp define a cluster as a grouping of industries that might be linked by common products and markets, common technologies, or other arrangements such as common Directors or perhaps formal or informal common membership of institutions.⁴⁸ Additionally, they consider a 'Region' to be defined by having a number of urban areas within a discrete geography that have industrial and commercial interests that are linked and often interdependent.⁴⁹ With labels such as 'The North East' and 'Tyneside', we immediately run into some complexity of geographic definition and nomenclature that potentially cut across the ideas of district and cluster as defined above. For the purposes of this discussion, this thesis will use three geographic labels – the North East, Tyneside, and Wearside. In this work, the North East as a label is going to be used to cover the area bordered in the south by the county

⁴⁷ A fine example of the sorts of networking that occurred can be found here: "An associated conversazione held on Monday, in the rooms of the Durham College of Science, Barras Bridge, Newcastle, was a great success. The following societies were associated for the holding of the conversazione:- Amateur Vocal Society, Durham College of Science, Engineering Students' Club, Foremen Engineers and Draughtsman, Geographical Society, Institute of Mining and Mechanical Engineers, Law Students' Association, Literary Club, Literary and Philosophical Society, Naturalists' Field Club, Orchestral Society, Photographic Association, Sketching Club, Society of Architects, Society of Chemical Industry, Society of Promotion of Fine Art, and Students Association...the attendance was very large." Newcastle Courant [1803], "*Associated Conversazione*", 4 May 1889. British Library Newspapers, <https://link.gale.com/apps/doc/Y3206532885/GDCS?u=unn&sid=GDCS&xid=64d88326>. Accessed 8 Apr. 2020.

⁴⁸ John F Wilson and Andrew Popp (eds) *Industrial Clusters and Regional Business Networks in England, 1750-1970*, (Aldershot: Ashgate Publishing, 2003) p 3.

⁴⁹ Wilson and Popp, p 3

boundary of Durham (as in 1880) and in the North by a line drawn south west from the town of Berwick upon Tweed sixty two miles north of Newcastle to Haltwhistle, some thirty six miles to the west. Tyneside and Wearside will be used to define the areas on both sides of the rivers Wear and Tyne, west as far as Wylam on the Tyne, and Durham on the Wear. The maps on pages 40 and 41 in this chapter will show this in more detail.

Using Wilson and Popp's definitions, neither Tyneside nor Wearside can be classified as a district as they encompass several distinct towns and villages along their routes. In fact, both river networks come closer to being Regional Clusters – because they share the attributes of both definitions. But even more important is the idea that they have in common business networks focussed on the transmission of information and the reduction of transactional costs. The extent to which the networks worked in cooperation with each other across the two areas is a question ripe with possibility – the rivalry between the two main towns of Sunderland and Newcastle still carries on to this day. As will be shown in Chapter 5 (p227) on political behaviour, community was a crucial factor in the way in which both elites and non-elites were able to spread knowledge, influence, and use power.

Chandler and the rise of the Region and firm

Changes in engineering techniques and technology in the mid nineteenth century, not least the change from wood to iron for ship hulls and the move away from sail to steam, meant that skills and knowledge had to be developed or acquired rapidly (although of course there was

overlap between the advent of steam power and iron hulls and the decline of sail and wooden hulls).⁵⁰ Developments in technology, techniques and processes emerged as a consequence of competition and innovation; changes in demand for skills and knowledge resulted.⁵¹ This prompts the question: what were the mechanisms through which these supply and demand factors were met? To create the context, we need to look at the reasons why engineering firms played such a prominent role in the North East economy. Wilson's work offers important insights into the rise of the region. It seeks to explain the reasons behind the development of business organisations and within that they cover areas such as the "recruitment and control of labour"⁵². This suggests a case study approach, as this allows for a comparative analysis of several firms using the same criteria to identify similarities and differences.

Chandler posits a three-phase model of development, the personal, entrepreneurial, and managerial.⁵³ Chandler's 'personal' phase has been described as both emphasising the stunted development of large-scale business and offering an explanation in terms of the negative

⁵⁰ By 1863 over a quarter of coal exported to London from the North East was being ferried by screw colliers. By 1876 the sail powered colliers were down to 37% of the traffic; by 1891 12%, and by 1911 3%. See Graeme J. Milne *North East England, 1850-1914: The Dynamics of a Maritime-industrial Region*, (Woodbridge: The Boydell Press, 2006) p 24

⁵¹ Alfred D. Chandler, "The railroads: pioneers in modern corporate management" *Business History Review* 39#1 (1965): 16-40.

Alfred D. Chandler, Alfred D. Jr., "*The Visible Hand: The Managerial Revolution in American Business*" (Harvard: Harvard University Press, 1977).

Alfred D. Chandler, Jr. and Herman Daems, eds. 1980, *Managerial Hierarchies: Comparative Perspectives on the Rise of the Modern Industrial Enterprise* (Harvard: Harvard University Press, 1980).

Alfred D. Chandler, "The emergence of managerial capitalism" *Business History Review* 58#4 (1984): 473-503.

⁵² John F Wilson, *British Business History, 1720-1994*, (Manchester: Manchester University Press, 1995)

John F Wilson, and Andrew Popp, (eds), p 2

⁵³ Chandler and Daems, p 11

effect that family and founders had on the decision-making processes and goals of their businesses.⁵⁴ In the 'entrepreneurial' phase there is an increasing amount of delegation to professional managers, and finally in the managerial phase there is a complete split between control and ownership. Chapter 2 will show the limitations of these models in the North East and will show that Quail's work on 'proprietary capitalism' provides a much more appropriate description of the situation.⁵⁵ Whilst there is some evidence of the first two of Chandler's phases in North Eastern shipbuilding and engineering, linear models of this sort cannot of course capture the vagaries, subtleties, and differences between economies, whether local, regional, or national. Rather, they reflect a generalisation of phases or sequences of development that economies proceed through, and the business organisation types that dominate at a particular time. The stages, whilst a useful guideline, do focus on organisation, ownership, and management; and whilst these will inevitably have an impact on shop floor workers, this group receives relatively little attention from Chandler. As Wilson argues, this emphasises the importance of the socio-cultural context in which a business develops.⁵⁶

In "The Visible Hand" Chandler develops these ideas in the context of the growth and development of industry across the USA. He asserts

⁵⁴ Barry Supple, "Scale and Scope: Alfred Chandler and the Dynamics of Industrial Capitalism", *The Economic History Review*, Aug. 1991, New Series, Vol. 44, No. 3 (Aug. 1991), pp. 506 Stable URL: <https://www.jstor.org/stable/2597541>

⁵⁵ John Quail, *The proprietary theory of the firm and its consequences*, in *Management and Industry – Cases Studies in UK Industrial history*, John Wilson, Nicholas Wong, and Steven Toms (Eds), (London: Routledge, 2020) p 73-109.

⁵⁶ Wilson, p13

several propositions. Firstly, modern business enterprise emerged when administrative coordination performed better than market mechanisms in enhancing productivity and lowering costs. Secondly, without a managerial hierarchy the advantages of coordinating multiple units within a single enterprise could not be realized. Thirdly, it was the growing number and variety of economic activities that made administrative coordination more efficient than market coordination. Fourthly, once a managerial hierarchy does its job, it becomes its own source of permanence, power, and continued growth, and these hierarchies tend to become increasingly technical and professional. These professional structures become separate from ownership over time because professionals prefer long-term stability and growth to short-term gains. Finally, big businesses grew to dominate branches and sectors of the economy, and in so doing altered their structure and that of the economy as a whole.⁵⁷ As will be shown in chapter 2 when looking at specific North East examples, the Chandler model does oversimplify the process of change, not the least because it ignores what Quail describes as 'long lasting habits of thought', which have an effect long after the social conditions that gave rise to them have gone.⁵⁸ In other words, organisational structures in the UK were frequently based on ideas and concepts, especially that of property ownership, that were seen as the 'right way', rather than necessarily the 'best' way.

⁵⁷ https://eh.net/book_reviews/the-visible-hand-the-managerial-revolution-in-american-business/ Accessed 22/10/2016 08:32

⁵⁸ John Quail, p73

Chandler uses the rise of the railways in the USA as the enabler and exemplar of these changes. Their development from single point-to-point links into a coordinated network required the kind of control and organisation that only a rational managerial system could provide. This system both required and inevitably led to a professionalization of management, bringing with it control processes such as cost accounting. Chandler argues that this rise of the professional class meant the end of the family control model and therefore the rise of managerial or professional capitalism. But later research showed that in fact the family model continued in the USA and globally well into the 20th century, and indeed beyond.⁵⁹ Chandler contends that the UK economy failed to continue to grow because it failed to grasp the importance of this development, with firms preferring to retain family control and management and thus failing to make the most of the potential internal economies of scale available had they pursued the consolidation and merger route favoured in the US. He argues that the three-pillar approach of investment in technology, management and marketing was the key to economic success.⁶⁰ Chandler does however ignore the fact that there were individuals and firms in the United Kingdom that were coming to grips with the challenges posed by the growth of large scale businesses. Notable amongst these was Captain Mark Huish of the London and North Western Railway. He led the way in creating the structures and

⁵⁹ See for example Leslie Hannah, *Strategic Games, Scale, an Efficiency, or Chandler Goes to Hollywood 1*, in *Business in Britain in the Twentieth Century: Decline and Renaissance?*, ed. R Coopey, and P Lyth, (Oxford: Oxford University Press; 2009) p. 21.

⁶⁰ Chandler, p455-456

processes that moved railway management from a haphazard phenomenon in the 1830s to the complex administration required by the big, consolidated railway firms that developed out of the 1840's railway mania.⁶¹

Whilst the Chandler approach offers a persuasive model, it has been questioned in the context of the UK by many writers, particularly by Elbaum and Lazonick and by Wilson and Popp and by Wilson (1995).⁶². Elbaum and Lazonick's collection of essays aim to show that it was not the absence of Chandler's three pillars that caused the decline, but rather that inherited institutional, first-mover constraints impeded UK firms, and combined with a social and political failure to transform technical and management education as well as financing policies, leading to long term relative decline. For example, relations between employers and workers, whether negotiated through Unions or not, which failed to adapt; the failure of providers of finance to become involved directly in industrial restructuring; and the flow of finance into Empire-based opportunities. The argument is a straightforward one, that British industry needed to change and adapt its structures of industrial relations and organization to remain competitive. But short termism and a failure to break the control of vested interests meant that these chances were not taken and (relative) decline set in.⁶³ Elbaum and Lazonick were not the only writers to question Chandler's ideas. Alford argued that his focus on senior

⁶¹ T.R. Gourvish, *Mark Huish and the London and North Western Railway – a study of management*, (Leicester: Leicester University Press, 1972)

⁶² Elbaum and Lazonick, Wilson and Popp (eds)

⁶³ Elbaum and Lazonick, *ibid*

leadership roles meant that he ignored some 'diffused entrepreneurship' further down the organisation.⁶⁴ Several North East firms developed as a result of this phenomenon, for example C.A. Parsons & Co. Charles Parson had begun as an engineering apprentice at Armstrong's, where he first conceived of the steam turbine. Unable to pursue his ideas there, he moved in 1884 to Clarke Chapman and Co, and then in 1889 formed Charles Parsons and Co to build steam turbines to his own design.⁶⁵ Another issue is the lack of weight given by Chandler to external factors. Government spending on armaments (both guns and ordnance), was the early backbone of Armstrong's business, before the firm expanded into building battleships, including warships for both sides in the Russo-Japanese war of 1905. A lot of North East firms benefitted from the Anglo-German arms race from 1907 which saw both sides commission and build significant numbers of battleships, work that would have benefitted shipyards, engineering firms and supporting industries in the NE.

Industrial Districts and Clusters

Wilson and Popp focus on the study of industrial clusters and districts, arguing that intertwined with the idea of clustering (and they suggest three levels of differentiation, District, Cluster and Region) is that

⁶⁴ B W E Alford, '*Entrepreneurship, Business Performance and Industrial Development*', *Business History* 19, no 2 (1977), p117

⁶⁵ <https://collection.sciencemuseumgroup.org.uk/people/cp37610/charles-algernon-parsons>
Accessed 25/10/2021

of the network.⁶⁶ Building on Marshall's earlier work, they contend that Chandler's focus on internal economies of scale came at the expense of ignoring the networking and labour mobility, or 'agglomeration externalities', that came as a result of clustering. Furthermore, they argue that Elbaum and Lazonick's 'institutional rigidity' thesis might benefit from an appreciation of the inertial effect that clustering might have had, and secondly that networks might have had a defensive and exclusionary effect, and thus blocked restructuring, because unless the network is consciously evolving it tends towards self-preservation and thus rigidity.⁶⁷ Wilson and Popp's case studies reveal many different aspects of clustering and networking. They contend that when testing these models against the empirical record considerable variation and diversity is uncovered.⁶⁸ Importantly, it is vital to avoid H.P.R. Finberg's 'national history localised', where a general national history is applied to a local situation without differentiation, assuming that what is true generally is true specifically.⁶⁹ Wilson and Popp's case studies tend to focus on networking as an attribute or aspect of management and ownership, but networking was just as much a factor in the way that entry into skilled jobs was controlled by workers and trade unions. Apprenticeships in engineering and other industries were much sought after and were frequently allocated via local networks of patronage that exercised

⁶⁶ As defined on Page 2 above; "A network can be defined as a social structure made up of combinations of individuals and / or organizations. A social or business network contains and is dependent upon relationships and information flows between people, groups, organizations, or other information/knowledge processing groups."

⁶⁷ Wilson and Popp, (eds) p282

⁶⁸ Wilson and Popp, (eds) p3

⁶⁹ H.P.R. Finberg, *The Historian and His Theme*, (Leicester: Leicester University Press, 1952) p9.

considerable control over who could work where and who could be admitted to a skilled trade. Foremen, often the holders of this patronage, were men of considerable status in the local community. The British Association for the Advancement of Science made a much-publicized visit to Elswick in 1886, and it was the foremen of the various shops who acted as guides in showing the visitors around the factory, rather than management.⁷⁰

Chandler's model of a market economy moving through consolidation, cartels, and mergers into managerial capitalism offers another view. We know that some of the key institutions of the North East provided powerful networking opportunities.⁷¹ Whilst these were 'employer' networks, it will be argued that Trade Unions, Mechanics' Institutes, and other less formal networks were just as important in shaping commercial life. Networks did not always work harmoniously; as McCord points out, the shipbuilding depression of the 1880s was followed by a long series of bitter inter-union demarcation disputes, some of which that will be examined in more detail in chapter 5.⁷²

Chandler argues that mergers and consolidation provided an expansionist strategic opportunity for American firms, but for engineering firms in England it seems to have been a defensive strategy, a way of

⁷⁰ Norman McCord, *North East England – the Region's Development 1760-1960*, (London: Batsford 1979) p 137.

⁷¹ See for example R. A. Buchanan *Institutional Proliferation in the British Engineering Profession, 1847-1914*, *The Economic History Review*, New Series, Vol. 38, No. 1 (Feb., 1985), pp. 42-60; Robert Spence Watson, *The history of the Literary and Philosophical Society of Newcastle-upon-Tyne (1793-1896)*, (London: W Scott, 1897).

⁷² McCord, p 197: "During the years 1900-3, for example, major groups of shipyard workers [on Tyneside] were on strike to enforce claims to work as against other workers for a total of 35 weeks. The feelings which provoked these disputes were often very strong, stronger than any appeals to a sense of solidarity."

responding to the growth of foreign competition and rapid technological change.⁷³ Reflecting concerns with the quality of management, Wilson and Singleton point out that family firms in Manchester had a tendency to recruit from a limited resource pool, often ignoring the new groups of graduates then emerging from further and higher education.⁷⁴ Networks such as church and club and extended family tended to provide the 'talent'; and this combined with a desire to keep control within the family also reduced access to alternative and new sources of capital and finance.⁷⁵ The eventual merger between Armstrong's and Whitworth in 1897 has been seen in several different ways. Wilson and Singleton argue that the poor quality of management at the top of this company meant that by 1930 it had been absorbed by the Sheffield steel and engineering firm, Vickers.⁷⁶ But as Henrietta Heald points out, it can be seen as a strategic move to stop Vickers from taking over Armstrong's world leading position in armaments manufacturing.⁷⁷ Heald quotes letters from Armstrong: "Vickers minus Whitworths is not to be feared. What we gain by absorbing Whitworths is the duration of our supremacy, and that is a thing for which we can hardly pay too much."⁷⁸

⁷³ See for example the description of the merger between Armstrong's and Mitchell's in Henrietta Heald, *William Armstrong, Magician of the North*, Northumbria Press, 2010, p142-3

⁷⁴ John Wilson and John Singleton, *The Manchester Industrial District* in Wilson and Popp, (eds) *Industrial Clusters and regional Business Networks in England, 1750-1970* p63

⁷⁵ Wilson and Popp, p 63

⁷⁶ Wilson and Popp, *ibid* p 63

⁷⁷ Henrietta Heald, *ibid* p 242

⁷⁸ Heald, p 242

Communities

In the early part of the period under review shipbuilding working communities tended to live very close to their place of work and this had an isolating effect, with occupational and societal solidarities reinforcing each other and potentially leading to a greater tendency towards industrial unrest. But as will be shown in chapter 6, as the workforce expanded and housing and transport opportunities improved, clustering became more nuanced. This nuancing opens up the idea that clusters are subject to a form of lifecycle in which they form, grow, stabilise, mature, and eventually exhaust themselves.⁷⁹ Whether this is caused by the nature of the cluster itself, or by external factors such as changing market requirements, seems to depend very much on the cluster. The rise and decline of the textile industry in Lancashire is a good example of clustering that eventually succumbed to external factors, in this case cheap imports, that nothing inherent in the cluster could overcome.⁸⁰ The lifecycle argument has been further developed into the idea that a cluster can be described as a complex, flexible system that can, under certain circumstances, adapt and rejuvenate.⁸¹ North East clusters can be shown to have taken the attributes of an adaptive system as Shipbuilding yards along the Tyne and Wear, because of their proximity to rivers and thus to

⁷⁹ Andrew Popp and John Wilson, *'Life cycles, contingency, and agency: growth, development, and change in English industrial districts and clusters'*, Environment and Planning A 2007, volume 39, pages 2975 to 2992, 2007

⁸⁰ Steve Toms and Igor Filatotchev, *'Networks, corporate governance and the decline of the Lancashire textile industry, 1860-1980'* in Wilson & Popp, *ibid*, p68-89. See also Wilson and Singleton (2003).

⁸¹ See R Martin & P Sunley, *'Conceptualizing cluster evolution: beyond the life cycle model?'* Regional Studies. 45 (2011): 1299–1318.

the North Sea, became ideal locations for the fabrication of offshore engineering and repair, whether oil and gas rigs or offshore wind turbines.

Politics and Community in the North East

These community and work based institutional developments must be viewed alongside contemporary political debate, especially because of the electoral reforms of the mid 1880s and the later emergence of the Labour Party.⁸² Historians have questioned whether there is a consistent theme running through Chartism, Gladstonian liberalism and into Liberal-Labourism at the turn of the century.⁸³ For this to hold true, the notion of Liberalism would have to be both popular and to show a traceable intellectual consistency. Thus, the development of the Labour Party and the notion that class drove this development becomes less about an inevitable historical process and more about an organic development, diverse in its roots and the speed at which each development appeared and took hold in political discourse.⁸⁴ It will be argued that one of the reasons why the Liberals (and to a considerable extent the Conservatives) maintained a strong presence in the North East, an area that a class based approach would assume ought to be ripe for a speedy leap to Labour, was because both were more aligned to the actual day-to-day concerns of voting working men than their Labour rivals.

⁸² The Representation of the People Act 1884 and the Redistribution Act in 1885 extended the suffrage following on from the Derby Government's Reform Act 1867. These two acts extended the same voting qualifications that prevailed in towns to the countryside and established the one member constituency as the usual pattern for Parliamentary representation.

⁸³ See for example G. Stedman Jones, *'Rethinking Chartism'* in *Languages of Class*, Cambridge, 1983; E.F. Biagini and A.J. Read (eds), *'Currents of Radicalism'*, Cambridge, 1991

⁸⁴ Robert Gray, Review of *'Class, Politics and Revisionism'*, *Social History*, Vol. 19, No. 2 (May, 1994), pp. 209-220 Taylor & Francis, Ltd. Stable URL: <https://www.jstor.org/stable/4286197> Accessed: 08-11-2018 15:26 UTC

Furthermore, local institutions, churches, chapels, Co-ops, sporting, and social clubs were more relevant than high national politics, because they were the means through which communities expressed their views. This reinforces the argument that the actions of institutions were driven by the communities that were engaged with them, and that any sclerotic tendencies emerged from those communities, expressed through the institutions.

Another contention is that the United Kingdom always privileged finance over industry, and that finance tended to be invested offshore rather than in domestic industry. However, as will be shown in chapter 2 when looking at the management teams of North Eastern Engineering firms, capital availability was less of a problem in the North East than the lack of skill and knowledge to deploy it effectively. This long-term lack of investment in United Kingdom industry resulted in relative, and indeed in some sectors, absolute decline. Cain and Hopkins in their work on British Imperialism argued that British economic development was severely hampered by a debilitating division between industrial and financial interests.⁸⁵ They posit the concept of 'Gentlemanly Capitalism', which they differentiate from 'Industrial Capitalism', arguing that manufacturers were often culturally isolated, and from whom the gentlemanly capitalists were both geographically and socially separate.⁸⁶ Cain and Hopkins point out that of the money raised for British-based projects between 1865 and 1914 only around £29m or 18% of the total went to manufacturing per

⁸⁵ P J Cain and A G Hopkins, *British Imperialism 1688-2015*, (London: Routledge, 2016)

⁸⁶ Cain and Hopkins, p55

annum, roughly 6% of the finance raised in London over that period.⁸⁷ It has also been argued that capital, or money available for investment in the United Kingdom, became scarcer during periods of expansion in overseas lending because of the positive association between the volume of capital exports and the UK short term interest rate.⁸⁸ The 'Empire' thesis argues that the focus of industry in the latter part of the 19th century turned away from competitive world markets to focus on the safer, protected markets of the Empire. This approach could be characterised as rational as these markets were relatively less sophisticated than those in the USA and Europe and therefore easier to do business in. Cain and Hopkins argued it was the ease with which capital could be invested abroad and the near certainty of safe (but low) returns that created prosperity that reduced or removed any need to invest in United Kingdom industry.⁸⁹

Turning to the nature of work itself, Mclvor shows that work's social influence goes beyond the workshop and the factory gate.⁹⁰ The old Marxist models of capitalism that unilaterally dictated the labour process, using the introduction of machinery to deskill the workplace and exert greater control over it, as well as the notion of conservative-leaning labour aristocracy, have been challenged by recent research.⁹¹ As Joyce argues: "People are husbands, mothers, voters, members of classes or of football teams, or whatever, and these do not necessarily form within

⁸⁷ Cain and Hopkins, p188

⁸⁸ Geoffrey Ingham, *Capitalism Divided? The City and Industry in British Social Development*, (Basingstoke: MacMillan, 1984) p 64.

⁸⁹ Cain and Hopkins, p190

⁹⁰ Arthur Mclvor, *A history of work in Britain 1880-1950* (London: MacMillan, 2001) p 3.

⁹¹ Mclvor, p 3

them coherent wholes.”⁹² His point is that the retrospective application of models or labels misses the multiplicity of meanings that work had to individuals at the time, and the assumption that the labour process necessarily dictated political perceptions and loyalties is simplistic. Frequently, the contrasting interests of employers and employees, of capital and labour, irrespective of appearing to be essentially contradictory, were resolved on the realisation of mutual self-interest. The idea that ‘labour’ expressed a consistent, collective political view has also been challenged. It has been argued that one of the major factors behind the Liberal Party's success in Jarrow was an unofficial alliance between capital and labour that was built on an agreed view of the common benefits to be derived from the success of industrial-capitalist enterprises.⁹³ But Newcastle swung between the Liberal and Conservative parties between 1874 and 1906, each party holding the seat 4 times, with a total of 8 different MPs. During the same period Jarrow had 2 MPs, both of whom were Liberals. So even within the context of the North East industrial region there were significant political differences which arose from the complexities of local community interests and their relationships. This will be examined in more detail in chapter 5 on political behaviour where it will be shown that frequently a close relationship, whether based on ownership, employment, or

⁹² P Joyce (ed), *Visions of the People: Industrial England and the Question of Class 1848-1914*, (Cambridge: Cambridge University Press, 1991) p11-12.

⁹³ A. W. Purdue, “*Jarrow Politics, 1885–1914: The Challenge to Liberal Hegemony*”, *Northern History*, 18:1, 182-198 (1982)

affiliation with a firm or industry, was a more important determinant of electoral success than party labels.

The period under study saw jobs becoming increasingly differentiated between skilled and unskilled, craft or mechanical. In chapter 3, the employment records of the Scotia Engine Works in Sunderland will be analysed to examine employment patterns and their relationship to the order book. This supports Elbaum and Lazonick's contention that "[British] ...firms opted for collective accommodation with unions of skilled...workers" by showing that the accommodation was made by both sides.⁹⁴ The letter book of a second engineering firm, R W Hawthorn in Newcastle, provides further insight into the social construction of the skilled workforce and the way in which they clustered together outside the working environment. It is through these insights into individuals rather than a broader look at the firms / institutions themselves that we can better understand the processes behind success and long term decline. Elbaum and Lazonick argue that the 'invisible hand of the self-regulating market' was an inadequate model for the kind of managerial control that was lacking in British industry during the period under study.⁹⁵ As will become clear, the nature of this managerial control has been a contentious one for historians.⁹⁶

⁹⁴ Elbaum and Lazonick, p 4

⁹⁵ Elbaum and Lazonick, *ibid* p 10

⁹⁶ See for example Alan McKinlay & Jonathan Zeitlin "*The Meanings of Managerial Prerogative: Industrial Relations and the Organization of Work in British Engineering, 1880–1939*", *Business History*, (1989) 31:2, 32-47, and R. O. Clarke '*The Dispute in the British Engineering Industry 1897-98: An Evaluation*', *Economica*, New Series, Vol. 24, No. 94 (May, 1957), pp. 128-137
Stable URL: <https://www.jstor.org/stable/2551586> for two widely differing interpretations of the 1897 strikes.

As the population of the North East expanded during the latter half of the 19th century, and industry developed along the banks of the rivers and inland areas, residential communities developed alongside. For this thesis 'community' is used here to describe a social and cultural grouping of people drawn together in a particular location, whose physical boundaries are flexible. The development of shipbuilding, located by sea or river, and the consequent rise in engineering shops which frequently clustered alongside shipyards, meant that there were fewer opportunities for isolation and an increased likelihood of overlapping communities. This clustering effect meant that workers and employers were both able to benefit from the co-location of businesses and workers.

Political affiliations and ideologies which develop in a community largely arise from the social relationships and prevailing attitudes which exist there. Important community, work and political organisations then help to shape these. Thus, the Trade Union movement, Liberals and Conservatives, as well as the nascent Labour Party, and influential local figures such as Joseph Cowen, all played their part in shaping North Eastern politics. Cowen's Imperialism seems in many ways contradictory to the Liberal platform on which he was elected, but he clearly reflected a strain of thought common amongst his constituents. In addition, his support for Irish Nationalism would have spoken to a substantial number of Newcastle voters, both positively and negatively. Sectarianism was not new to the North East. The first serious sectarian clash in the North East took place in Felling on 12th July 1856, when a party of Orangemen were

attacked as they marched through the town.⁹⁷ Other intercommunal riots took place in East Jarrow (1867) and Hebburn (1873), something that points to political behaviour being influenced by more complex and localised factors than just social class. As Joyce has argued, class has been viewed as the major cultural and political expression of the industrial developments of the nineteenth century.⁹⁸ This thesis contends that more important than class were communities and local loyalties, and that it was through these social constructions that political behaviour was often determined. These communities were shaped by factors beyond class differences, including religion, occupational idiosyncrasies, ethnicity, as well as the diverse activities and influence of community organisations such as churches, co-ops, and clubs. These communities were frequently characterised by their clustering, both socially and economically, and this served to compound the rigidity of the institutions that emerged from them. The ability or willingness of these communities to look beyond their own self-interest was constrained by the limited horizons they worked within – the maintenance of employment and the protection of investment overrode any broader thinking.⁹⁹

Contextualising the Communities

By 1890, Great Britain was by far the leading shipbuilding nation, producing over 80% of global demand.¹⁰⁰ Shipbuilding required

⁹⁷ Frank Neal. *'English-Irish Conflict in the North East of England.'* In *The Irish in British Labour History* (1993): 59-85.

⁹⁸ Patrick Joyce, p1

⁹⁹ Wilson and Popp, p282

¹⁰⁰ Edward Lorenz and Frank Wilkinson, *The Shipbuilding industry 1880-1965* in Elbaum and Lazonick, *The Decline of the British Economy*, (Oxford: Oxford University Press, 1986) p109.

engineering skills, power, labour, and organisation, and in Belfast, Liverpool, Glasgow and the North East of England these factors came together to create centres of activity and innovation that often led the world. But why were engineering, shipbuilding, coal mining, and the associated supporting and ancillary industries so successful in the North East of England during the second half of the nineteenth century? This section examines how the components of that success came together, and how people, through the communities and institutions that grew up around them, influenced the course of events. It proposes that the roots of success also contained the seeds of long term decline, precisely because the communities exercised a restraining effect on development as they sought to maintain what they considered to be their interests. This restraining effect was exercised both individually and collectively through the institutions that represented them. These institutions and networks were the vehicles through which social relationships were formed and developed and became the means through which control and discipline could be exercised, both in terms of the availability of labour and the structure of business.¹⁰¹

The reasons for success were multifaceted, including geography, geology, and the skills and knowledge available to utilise them. The institutions that developed ranged from the economic, such as the Co-operative movement and Trade Unions, the faith based such as churches and chapels, the social such as sports clubs, and the political such as the

¹⁰¹ Mark Granovetter, '*Economic Action and Social Structure: The Problem of Embeddedness*', *American Journal of Sociology*, Vol. 91, No. 3 p503.

local Liberal and Conservative parties. All these bodies provided networking and information sharing opportunities, and other institutions such as CIU clubs and the Newcastle Literary and Philosophical Society provided such opportunities as an inherent part of their being.¹⁰² Only the very poorest strata of society tended to be excluded from or unengaged with these institutions, and whilst the vast majority of them were male dominated, women's institutions, though often less formal, still played an important part in the exchange of information, knowledge and ideas. Institutions sometimes provided the opportunity for the employed and employers and managers to come together under a single banner (sports clubs such as cricket and rowing were often relatively mixed in class terms); some were very local and very limited in their membership criteria.¹⁰³ There were therefore networks of influence and information cutting across the various North East communities and social class barriers, and their role in influencing the nature of work is very relevant in the development of industry. This influence can be seen in the nature of industrial disputes, especially the smaller, localised ones, in the status concerns of craft workers, in the decline of the small scale family business and the rise of the shareholder controlled limited company, and in the way housing and other developments changed the economic geography of the region. While classical economic theory considers that

¹⁰² CIU – Clubs and Institutes Union, founded by The Rev. Henry Solly in 1862. Liberal Working Men's Clubs were frequently affiliated members, as well Conservative, Unionist and other, non-political Clubs. See Ruth Cherrington, *'Not Just Beer and Bingo! a Social History of Working Men's Clubs'*, AuthorHouse, 2012, for a more detailed social history, and George Tremlett, *'Clubmen – The History of the Working Men's Club and Institute Union'*, London 1987, for a detailed organisational history.

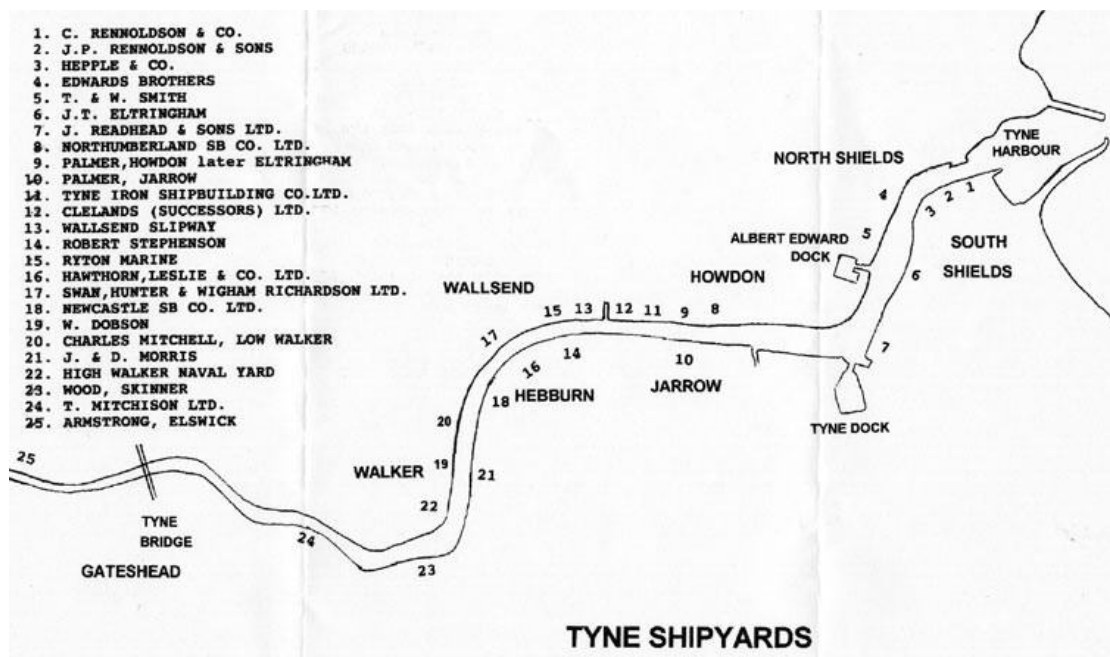
¹⁰³ See the example of the Elswick Rowing Club in Chapter Six

actors having social relationships actually impedes the efficient running of competitive markets,¹⁰⁴ this thesis will argue that those social relationships were actually the underpinning factor of economic success, as well as one of the causes of long term decline.

The Geography of the Region

It is important to describe the geographic context and the definitions and labels used, principally the ideas of Region, District, and Cluster. As can be seen below, the Tyne and the Wear provide classic examples of Regional, District and Cluster concentrations.

Map 1 – Tyne Shipyards

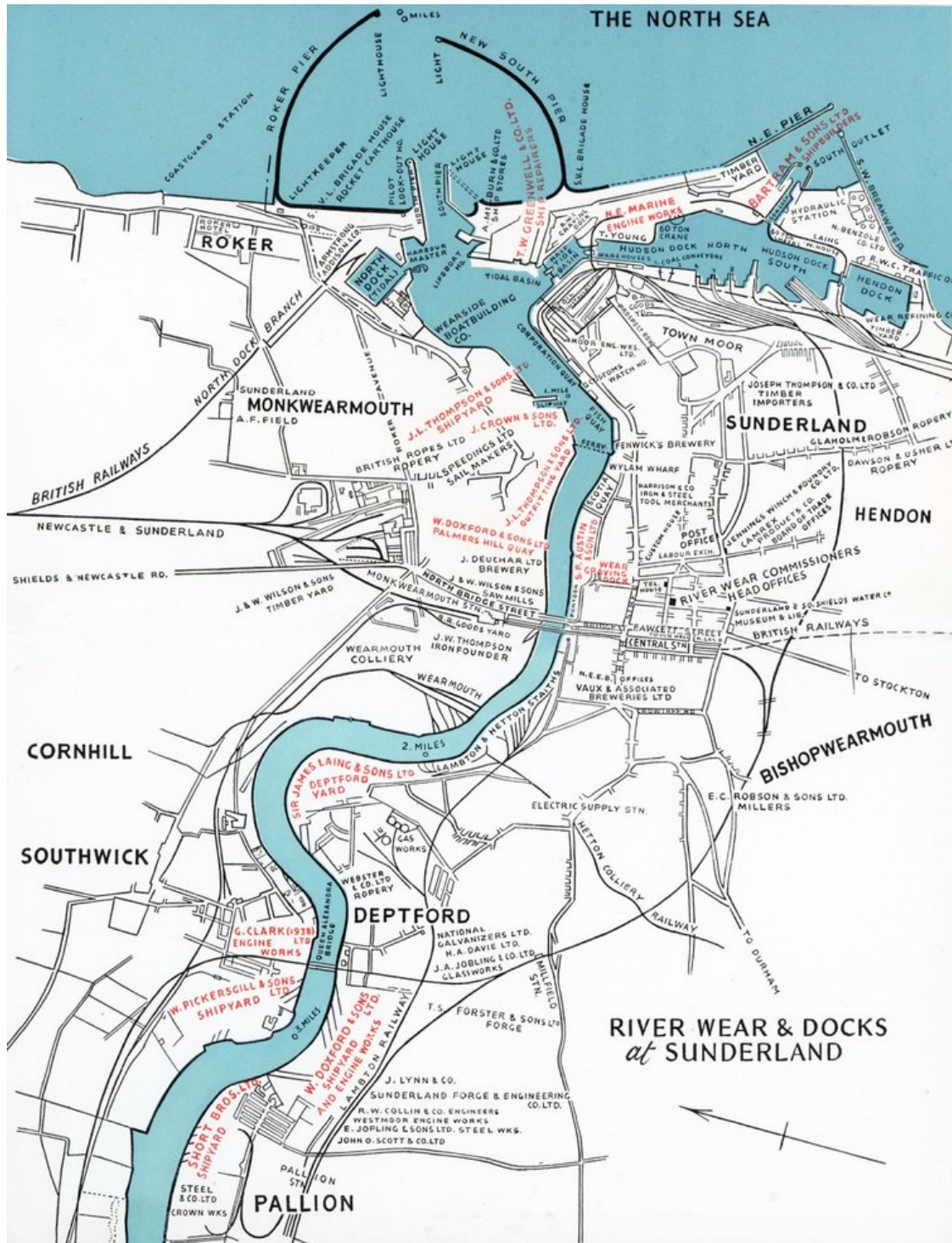


The River Tyne

http://www.jimscott.co.uk/Shipyards/Yards_010_map.html

¹⁰⁴ For example, Adam Smith, who argued that 'social atomization is prerequisite to perfect competition'. Quoted in Mark Granovetter, *Economic Action and Social Structure: The Problem of Embeddedness*, *American Journal of Sociology*, Vol. 91, No. 3 (Nov., 1985), p484

Map 2 – Wear Shipyards



The River Wear

Where Ships are Born, Sunderland 1346-1946, A history of Shipbuilding on the River Wear. By J.W Smith and T.S Holden, Published by Thomas Reed and Company Limited, Sunderland 1953.

Further, Wilson and Popp consider a 'Region' as having several urban areas within a discrete geography that have industrial and commercial interests that are linked and often interdependent.¹⁰⁵ The critical element (as it is with clustering) is their ability to enable the transmission and sharing of explicit and tacit knowledge between co-located firms. This happens through networking and labour mobility, or 'agglomeration externalities' and as we shall see later in chapter 2 these factors played an important part in the rise and decline of the engineering sector in the North East. The regular movement of skilled workers between firms (discussed in more detail in chapter 3), and the setting up of new yards and firms by managers leaving other firms in the sector were frequent in the North East engineering and shipbuilding sector. For example, Charles Parsons left Clarke Chapman in 1889 (taking twelve other employees with him) to set up on his own, and Benjamin C Browne, later Mayor of Newcastle, a mechanical engineer who was another who had served an apprenticeship at the Elswick works, eventually became Chairman of Hawthorn Leslie & Co in 1886 and was a leading light in the establishment of forums such as the North East Coast Institution of Engineers and Shipbuilders in 1884.¹⁰⁶

The tendency towards clustering is clearly the case in the North East as, for example, the River Wear in Sunderland and the River Tyne in Newcastle saw shipbuilders and marine engine works, as well as ship repair yards, coexisting. Not only did one supply the other, they also often

¹⁰⁵ Wilson and Popp, (eds) p 3

¹⁰⁶ The Institution held its inaugural meeting on November 28, 1884

shared the same requirements for skills. As Granovetter has argued, situations where there is a stable network of relationships (and not just at management level) facilitates multifaceted dealings and thus minimises the pressure for firms to integrate vertically.¹⁰⁷ This often resulted in a fluid and pragmatic relationship in times of both economic boom and bust. Shipbuilding and engineering skills would be in demand during a boom, but were also in demand in ship repair work, and when the order books were low informal arrangements would allow these workers the chance to keep working in the immediate area by moving across to ship repair work. Clustering was therefore important in sustaining employment and retaining capacity and capability in an area.

The North East (see map 3 below) in 1880 as defined here covers the area bordered in the south by Middlesbrough and in the North by the border with Scotland at Berwick. 'Tyneside' and 'Wearside' are used to define the areas on both sides of the rivers Wear and Tyne, west as far as Wylam on the Tyne, and Durham on the Wear. 'Teesside' is likewise defined as the area either side of the River Tees, including Hartlepool.

¹⁰⁷ Mark Granovetter, p503

Map 3 – The North East as a Region



Crucially across and within the region there were business and social networks which transmitted information and actively promoted the reduction of transaction costs. For example, the Newcastle Literary and Philosophical Society and the Institute of Mining offered regular opportunities for information interchange. On 28th February 1846, the first

'conversazione' (a social gathering held for the discussion of science or the arts) was held at the 'Lit and Phil', when Mr Hugh Lee Pattinson (who had discovered a way of extracting silver from lead) held a scientific levee.¹⁰⁸ The event proved so popular that it became an annual institution, subsequent events including the first demonstration by local businessman Joseph Swann of the incandescent light bulb.¹⁰⁹ Other, more informal networks existed. For example, in the early 1880s John Wigham Richardson, one of the partners in the Neptune shipyard at Walker, used to hold regular 'Virgil' evenings at his home. After dinner and Virgil, they occasionally strayed into Horace and Lucretius. Members of this circle included Thomas Hodgkin, a banker, Benjamin C Browne, partner at Hawthorn's and future Lord Mayor, Benjamin Noble, brother of Sir Andrew Noble, and Theodore Metz, a scientist.¹¹⁰ The composition of these networks and the extent to which they were a vehicle for co-operation, and the extent to which that cooperation crossed boundaries or stayed within them, is an important question, especially given the rivalry between Tyneside, Wearside and Teesside, and even within those areas, some of which still continues today.

Newcastle began to exhibit aspects of clustering earlier than this study's period. Newcastle was the fourth wealthiest town in England by 1334 after London, Bristol and York, and the 11th largest in 1372, with 2,637 taxpayers. Coalmines supplying coal to Newcastle were

¹⁰⁸ <http://www.litandphil.org.uk/information/history/#22>

¹⁰⁹ August 10, 1881 - The Lit & Phil witnessed the first public exhibition of lighting using multiple lamps. Seventy gas jets were extinguished, and Joseph Swan switched on his own lamp. <http://www.litandphil.org.uk/information/history/#31>

¹¹⁰ Norman McCord, p148

established at Elswick, Winlanton, Heworth and the Town Moor. By 1378 Newcastle shipped 15,000 tons of coal per year and exported to London and to many parts of Europe. In 1452, identified trades included the 'keelmen' who ferried the coal to locally built collier ships anchored in the Tyne.¹¹¹ With the nearest industrial 'clusters', or areas at least two hours' drive away today, the North East was and still is relatively isolated. In 1880 the fastest journey to the nearest similar cluster (West Yorkshire) would have been by train, and Newcastle to Leeds would have taken at least 3 hours by train (assuming an average speed of 42 mph).¹¹² It would have taken even longer to travel to another proximate 'cluster' around Glasgow and the River Clyde. Road journeys would have been even harder. In demographic terms, using the 1881 Census the population of Newcastle was 163,668, having grown by around 35% in the previous 20 years.¹¹³ That of Sunderland was 182,548, a growth of 56%. By 1901, the population of the County of Northumberland had reached 603,000, that of County of Durham 1,187,000. This was a rapidly expanding region.

Popp and Wilson argue that industrial 'Districts', in England at least, tended to accommodate those industries where there was significant potential for the decomposition of production processes, meaning the breaking down of a major process into smaller sub processes. In both heavy and light engineering, as products grew in size

¹¹¹ Statistics from <http://www.englandsnortheast.co.uk/NewcastleCoal.html> accessed 14/11/2016 16:43.

¹¹² O.S. Nock, *Railway Race to the North*, (London: Ian Allen, 1958) p48.

¹¹³ GB Historical GIS / University of Portsmouth, Newcastle upon Tyne District through time | Population Statistics | Total Population, *A Vision of Britain through Time*. http://www.visionofbritain.org.uk/unit/10142714/cube/TOT_POP
Date accessed: 31st January 2018.

and complexity, the small workshop had to become more specialised in their products and the bigger workshops became more recognisably production-line focussed. Where once a single shipwright could have built a ship more or less on his own, by the second half of the nineteenth century the size and complexity of ships required an assortment of skills to build them. Thus, the process of construction was necessarily broken down into smaller parts, decomposed into sections of skill, knowledge, tools, and materials. This decomposition process went hand in hand with increasing divisions of labour and, because of a lack of investment in machinery there was a continued reliance on craft skill.¹¹⁴ Decomposition was constrained in some Industrial districts because the networks that were part of those districts would have, consciously or otherwise, acted as constraining forces, discouraging the development of decomposition into more automation.¹¹⁵ The failure to follow decomposition with a concomitant investment in productivity, thus often allowing control of production to remain with the craft unions, meant the process of decline looks as though it was almost self-fulfilling. This hindsight-driven interpretation oversimplifies the realities facing both industrialists and workers at the time, not the least the requirement to ‘keep the lights on’ both in terms of employment and business continuity. As ships grew in size, the number of specialized roles in building them increased. The introduction of the hydraulic riveting machine should have enabled

¹¹⁴ Wilson and Popp (eds), p49

¹¹⁵ Andrew Popp and John F. Wilson, *The emergence and development of industrial districts in industrialising England, 1750-1914*, in *A Handbook of Industrial Districts*, edited by Giacomo Becattini, Marco Bellandi, Lisa De Propis, (Cheltenham, Edward Elgar Publishing, 2011) p 57.

greater productivity, but a combination of the equipment not working effectively on steel, and the development of a closed shop amongst the riveters, caulkers, and holders-on meant that productivity gains by 1900 were nothing like those expected in the 1880s.¹¹⁶ The reluctance therefore of both owners and workers to carry through the logic of the decomposition process into a continuing investment in productivity was part of the sclerotic process. Both sides had, in effect, reached a stasis, whereby employers accepted not investing in productivity as the price of keeping the workforce working, and the workforce traded future economic benefits across the wider community for the stability of current employment. This close relationship between community, institutions and industrial development begs the question as to the extent to which networks, clusters, and institutions that contributed to success were also part of the reasons for subsequent decline.

The rise of engineering and shipbuilding in the North East

Engineering and shipbuilding developed in the North East initially because of the ample reserves of coal for power, rivers for transport, and iron ore for raw material, combined with a trading and maritime heritage. Engineering firms, shipbuilding, locomotive building, power generation and other sectors in the North East between 1880 and 1918 depended on these production factors, as well as entrepreneurship and the availability of suitable labour resources to thrive. Whether that entrepreneurship was somehow latent and inherent in the population or it was a question of it

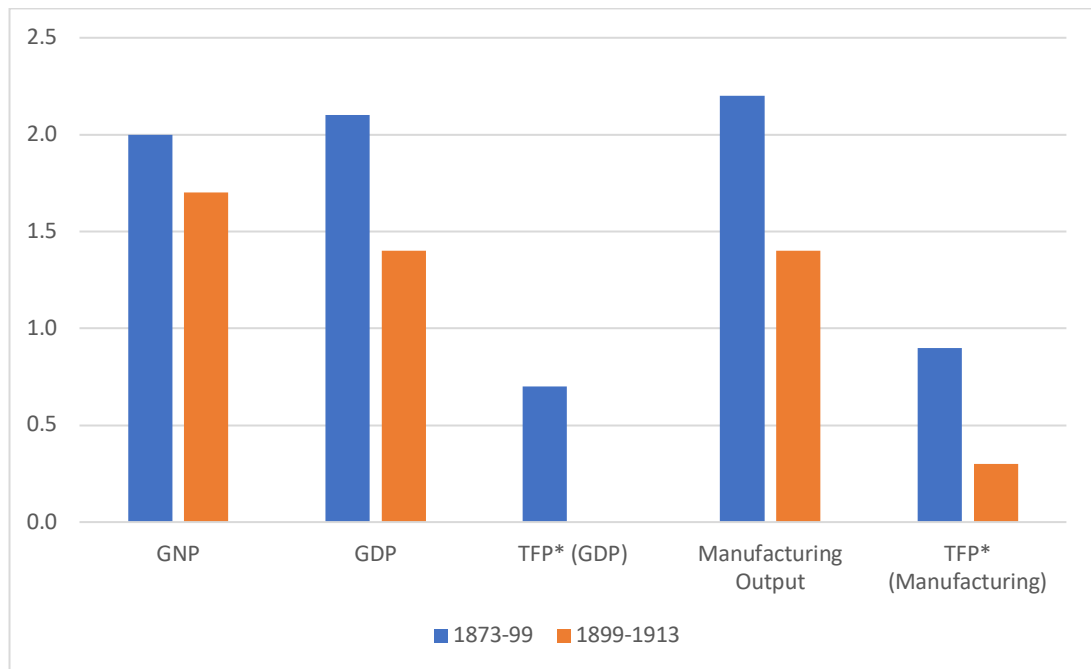
¹¹⁶ Alistair Read, *The Tide of Democracy – Shipyard Workers and Social Relations in Britain, 1870-1950*, (Manchester: Manchester University Press, 2010)

arising in response to the available opportunity is an interesting question. There is probably an element of both possibilities; the Stephensons, Palmers and Lord Armstrong were all from local stock, whilst Charles Parsons was the third son of an Irish Earl, and Charles Mitchell was an Aberdonian by birth. By the 1880s, the North East was also benefitting from the density and scale of its industrial enterprise, the critical mass of which encouraged other new enterprises and initiatives. Yet by the mid-1920s growth was slowing and, with the benefit of hindsight we can see the first suggestions of longer-term relative decline. In 1870, the United Kingdom produced 1/3rd of all global manufacturing, but by 1914 this was down to 1/7th.¹¹⁷ This is partly explained by the rates of growth achieved by competitor countries such as Germany and the USA, but such a steep decline in market share, whilst there would be some inevitability about it as other countries caught up, might have its roots in other, more local, factors. Looking in more detail at the UK's overall economic performance, the UK shipbuilding sector between 1890 and 1914 had a rate of growth in output that exceeded that of the UK economy as a whole.¹¹⁸ Taking the whole UK economy between 1873 and 1913 and using a range of performance measures, the period between 1873 and 1899 was clearly more successful than that between 1899 and 1913, although few economies would be able to show consistent growth over such an extensive period.

¹¹⁷ P.J. Cain and A.G. Hopkins, *British Imperialism 1688-2015*, (London: Routledge, 2016) p120.

¹¹⁸ Edward Lorenz, *Economic Decline in Britain – The Shipbuilding Industry 1890-1970*, (Oxford: Oxford University Press, 1991) p 1.

Figure 1 – UK Economic Performance 1873-1913



*TFP – Total Factor Productivity. TFP is the portion of output not explained by the amount of inputs used in production. As such, its level is determined by how efficiently and intensely the inputs are utilized in production. If all inputs are accounted for, then total factor productivity (TFP) can be taken as a measure of an economy’s long-term technological change or technological dynamism. TFP (GDP) between 1899 and 1913 was 0).

Table adapted from Cain and Hopkins, ‘British Imperialism 1688-2015’, London 2016, p120

As shown above, whichever data set is chosen there is a decline in growth rates between the two periods. However, the question remains as to what the appropriate period is to use when measuring decline, and as in any chosen period there will be multifactorial causes, as differing weights can be ascribed to them as well as different comparative reference points. These could be the choice of comparison countries, or the metrics used. Analysis has generally focussed on the economy as a whole, or on specific sectors, but few have drilled down into the details of

an industry in a specific place and time.¹¹⁹ Decline, relative though it was, is an indicator not a cause, so this thesis will examine the reasons behind the region's decline, not just the decline itself.

It is important to clarify decline. Absolute decline indicates a permanent fall below a previously achieved high point, whether that is measured in value or volume of production, profitability, or other measures. Relative decline is measured by comparing the performance of a sector, industry, firm, country in comparison with a similar sector, industry, firm or country, so relative decline can be simply not growing as fast as previously. It is possible therefore to have relative decline as well as overall improvement. As shown in the chart below, the North East was a very significant contributor to overall UK shipping tonnage launched and therefore global tonnage, but this contribution had slipped to half its 1892 level by 1918, even though the gross tonnage launched in the North East had increased by 29.2%. (note that the numbers in figure 2 exclude warship tonnage). The second graph shows the decline in numbers launched over the same period. The average tonnage of North East launches increased from 2272 tonnes to 4548 tonnes over the same period.

¹¹⁹ Notable exceptions are Edward Lorenz, *Economic Decline in Britain, The Shipbuilding Industry 1890-1970*, (Oxford: Oxford University Press, 1991) and J.F. Clarke, *Building Ships on the North East Coast 1640-1980*, 2 Volumes, (Whitley Bay: Bewick Press, 1997)

Figure 2 – Tonnage Launched 1892-1918

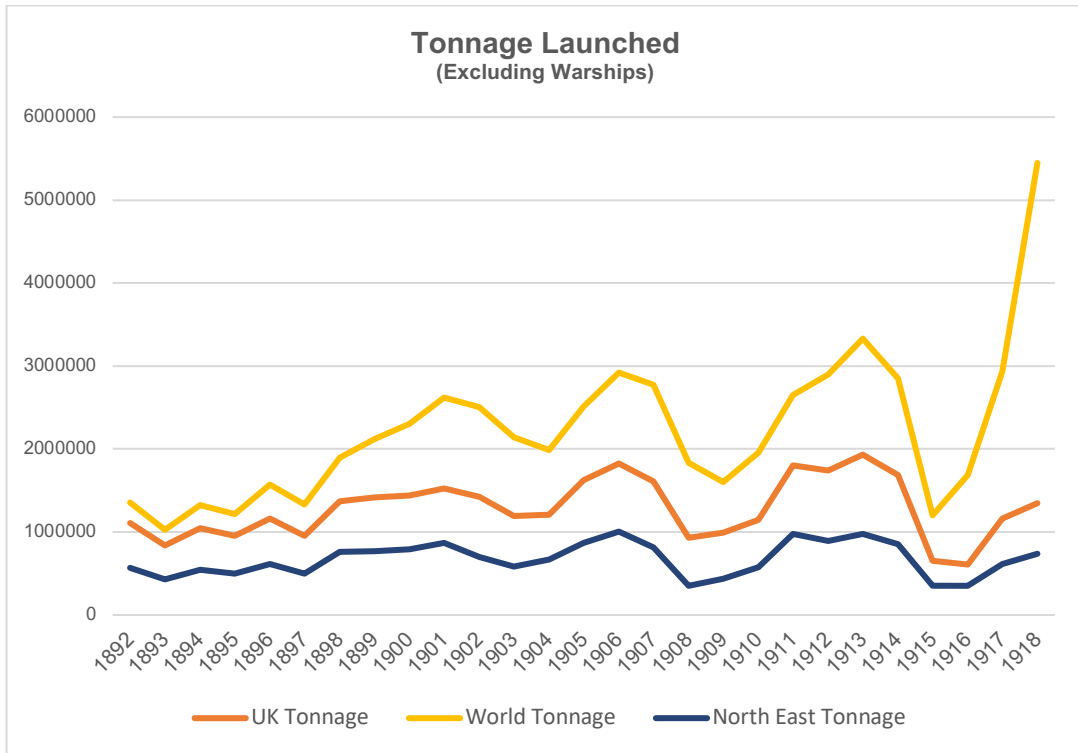
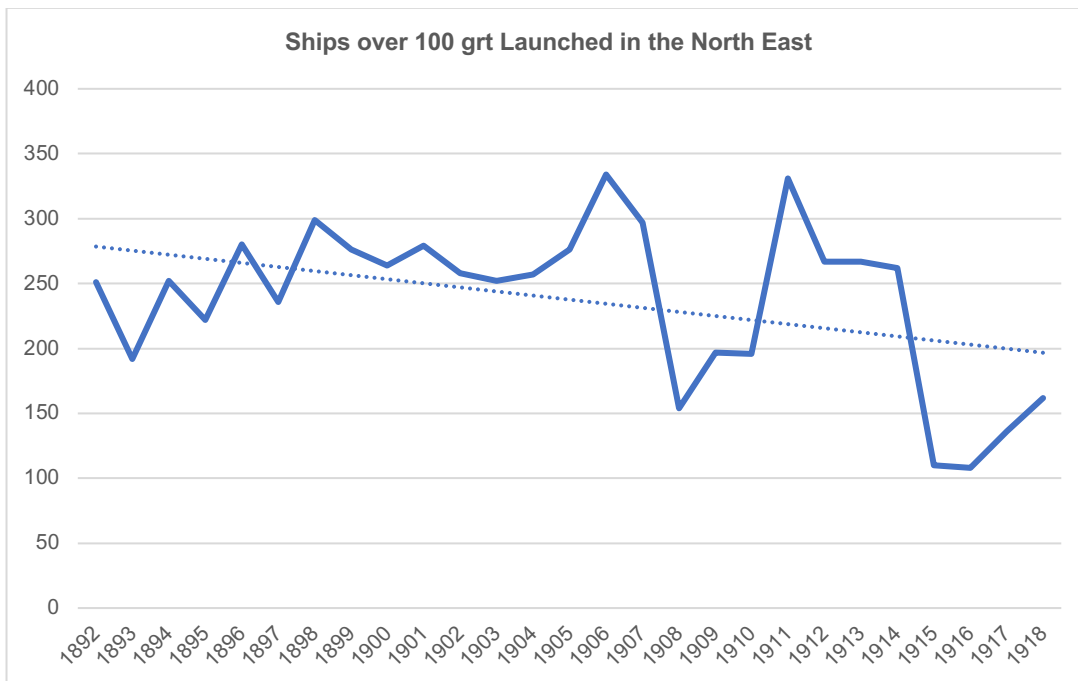


Figure 3 – Ships over 100 GRT launched in the North East



Adapted from David Dougan, 'The History of North East Shipbuilding' p211. Original data from Lloyds Register of Shipping

British economic performance, therefore, and by extension North Eastern economic performance, needs to be viewed relative to that of similar countries or regions. Describing economic performance as being in decline therefore requires careful contextualisation. Chandler laid stress upon corporate size and management as the key ingredient for corporate success. Smaller family firms were not able to match the sophistication of the larger corporations in taking key operations 'in house', and exploit local clusters of complementary industries and businesses, primarily because of 'their continuing commitment to personal management'.¹²⁰ In other words, one of the possible reasons for failure might have been the failure to invest in management, thereby recognising their own core competencies and gaps, and then building a series of competency exchanges with likeminded proximate firms. Later historians such as Mathias noted that clusters also often contained elements which would contribute to their long-term decline.¹²¹ For example, skilled labour within a cluster or district tended to be reluctant to relocate and would often take up the most easily available living accommodation. Clustering of labour made relocation of a firm's operation harder, as well as rendering the import of labour into the district problematic because of the close interrelationship between the business(es) and accommodation. (Armstrong struggled to convince the labour he brought in to break the 1871 strike to stay, not the least

¹²⁰ Alfred Chandler, *Scale and Scope: the Dynamics of Industrial Capitalism*, (Harvard: Harvard University Press, 1990) pp 235-7.

¹²¹ Peter Mathias, *The First Industrial Nation – an economic history 1700-1914*, (London: Routledge 1983).

because of the hostility shown to them by the local population when they were accommodated in local schools and church halls around the Elswick Works). But, as Toms and Wilson argued, the advantages of working within an industrial district and the clustering that came with it did also provide economies of scale and scope that helped competitiveness well into the 20th century.¹²² So, whilst the pooling of skills and knowledge provided externality benefits, it may also have meant that competition for scarce labour resources might have been a factor in performance stagnation and therefore possible economic decline, although the absence of firm data makes this difficult to prove. Congestion, in the sense of too much industry chasing too few resources, in fact was rarely a problem along the Tyne, the Wear or the Tees, and competition for scarce labour was much subtler and involved more complex issues, not least because of the active role that Trade Unions played in managing the supply of craft labour through control of the apprenticeship system. In the case study of shipbuilding, Lorenz and Wilkinson argue that it is only through an understanding of the specific market and technical conditions in which shipbuilding (and by extension, because of the clustering effect of interdependence within the Region, engineering in general) existed, and how those conditions interacted with labour relations that the decline in these industries can be understood.¹²³ Regional specialisation amongst shipbuilding firms had become entrenched as the nineteenth century progressed, with the Wear and Tees specialising in cargo vessels, the

¹²² Steven Toms and John Wilson, *Scale, scope and accountability: towards a new paradigm in British business history*, *Business History*, Oct. 2003, p5

¹²³ Edward Lorenz and Frank Wilkinson, p128

Tyne being more mixed with warships, liners and cargo ships. The Clyde produced the full range from ocean going liners through to coastal fishing vessels, whilst Belfast produced the biggest liners. Birkenhead and Barrow focussed on warships. The logic of co-locating the necessary engineering, engine manufacturing, ship repairing, carpentry and outfitting skills meant that industrial districts were therefore a characteristic of the shipbuilding sector. Furthermore, this became self-reinforcing as within each district yard specialisation led to a clustering of skills and production types. This was driven by simple geography as well as market opportunity; building bigger liners required wider rivers for launch and more land for hull construction. On the other hand, as Lorenz pointed out, specialisation did not mean standardisation or mass production.¹²⁴ This meant that most yards, and indeed most engineering firms in those industrial districts, kept their labour-intensive production processes so that they could retain their ability to deliver a complex product mix, something their customers wanted.¹²⁵ This also resulted in the communities that provided the skills and labour clustering around the industrial districts, often centring around either a specific industry or even a particular craft. The resulting social cohesion inevitably then played a significant role in shaping worker/management relations, in particular with skilled workers increasingly recognising the benefits of joining together in trades unions. It should be added that a similar social cohesion can be

¹²⁴ Lorenz, p27

¹²⁵ See <http://www.tynebuiltships.co.uk/> for a list of the ships built on the Tyne from 1751 onwards. The variety in specification, dimension, and power unit(s) clearly reflects a general policy of building to demand

found amongst owners, managers and even foremen, so this was not a solely working class phenomenon.¹²⁶ Thus, it was possible for the relevant parties to perceive apparent competitive advantage because the skills and know how, both physically and financially, were all within (relatively) easy reach, thus laying the foundations for short-term approaches to forward strategic thinking.

Labour Networks

If the cluster networks of capital and business supported the successful development of industrial districts in the North East, so also did clusters and networks of labour resources. Increasing divisions of labour required skill specialisation which in turn led to specific forms of labour organisation and the growth of craft unions. This division of labour came in shipbuilding, more so than in other engineering industries, from the addition of new crafts into the industry rather than through the subdivision of existing trades. Iron workers developed into platers, angle ironsmiths, riveters, and drillers. As ship interiors became more sophisticated, trades like plumbers, painters, carpenters, and cabinet makers were required. These craft jobs had associated craft unions, which often had a larger membership outside shipbuilding. This reinforced their ability to work as networks in a similar way to their employer equivalents, providing information on available jobs, and rules and regulations to manage working practices. By managing the

¹²⁶ The development of middle class districts around Newcastle (Jesmond, Gosforth, and other small coastal towns on the North Eastern Railway) saw the growth of larger, villa-style houses that became the homes of managers and other professionals. More discussion on this in Chapter Six.

apprentice system and therefore the supply of skilled labour, the craft unions effectively controlled their crafts, acting it could be argued in the role of what we would now identify as 'middle managers' in the enterprise. Critically, they also functioned as social identifiers, giving emotional significance to identification with the craft and providing a means of emphasising identity through that craft membership.¹²⁷ This was crucial in reinforcing the loyalties that members had and therefore the priority they gave to broader developments in working practices and changing market conditions. Furthermore, the way that these social relationships were embedded within and across each of the social groups generated trust and standards of behaviour that were more effective than those developed under authoritarian relationships.¹²⁸ This meant that employers could trust known employees, and therefore it made sense for individuals to keep to the same groups, namely, employers to keep to the same employees, and employees to the same employers. More pragmatically, Trade Unions also provided strike pay during periods of unrest and were able to facilitate temporary periods of employment for their members in other workshops or districts during disputes. As Lorenz has argued, skilled labour was generally relatively mobile within a district, as demand for particular skills in an individual yard would vary according to the order book.¹²⁹ Unions therefore became a form of employment network, membership acting as a guarantee of skill and experience. Even with the

¹²⁷ See for example Jan E. Stets; Peter J. Burke, '*Identity Theory and Social Identity Theory*' *Social Psychology Quarterly*, Vol. 63, No. 3. (Sep., 2000), pp. 224-237. Stable URL: <http://links.jstor.org/sici?sici=0190-2725%28200009%2963%3A3%3C224%3AITASIT%3E2.0.CO%3B2-V>

¹²⁸ See Mark Granovetter, p 498

¹²⁹ Lorenz, p53

developments in processes, mechanisation, engineering, quality control and organisation that characterised the mid to late 19th century, the single common thread running through every North-Eastern engineering business was human labour. Whether it was locomotive building at R.W. Hawthorn, shipbuilding in Jarrow or steel working in Consett, labour was the single most important component in the process. The role of the Trade Unions and the consequence of their approach is examined below in chapters 2 and 5, so at this stage the key point is that although they represented only a proportion of the workforce their influence went across most of it. The Unions did not sit in isolation from the society which produced their members, a society that had concerns over and above work. Informal relationships within communities, work and other social networks were consequently as important in creating rigidities as the formal relationships and networks as expressed through Unions, Employer Associations and Political Parties.

The craft and other unions were not the only institutions through which members' interests were reflected. These institutions channelled their members' interests and concerns into action (and inaction). The directly work focussed Unions sat alongside the economic and social institutions such as co-operatives, and the purely social such as sports clubs. Indeed, the boundaries between social groups were often reflected in the roles that certain groups adopted. Often colliery or factory managers would take on the role of Chairman or board member of social and sporting clubs, where the social groups might mix. The North Seaton Rowing Club had Mr J Nicholson, the colliery manager, as their first

President in 1896, followed in 1913 by Mr Manderson, the colliery manager, and Mr J Willis, the resident engineer as President and Vice President, respectively.¹³⁰ But in other cases where the membership was less likely to be mixed, leadership came under the control of those with organisational experience, whether in Trade Unions or other groups. For example, social clubs often had committees dominated by those men experienced in organisation and process, experience gained through the Trades Union movement and through work. Thomas Beck, a colliery engineer at Seaton Delaval, was a key player in the formation of the Astley Social Club, based at the Astley Arms in Seaton Sluice. The social club acted not only as a club but also as a conduit for other social and sporting groups to come together. Beck himself was chair of Hartley Hastings Cricket Club, as well as the Annual Coal Company supper for mechanics and locomotive engineers.¹³¹ There were also links between institutions with, for example, the Seaton Delaval Cooperative Society opening the Co-op Hall in Seaton Terrace in late 1885. Owned and operated by miners, it was available for groups to hire for a wide variety of leisure activities. A commercial venture, as would be expected under the Co-operative banner, it was swiftly followed by similar halls in nearby Bedlington and Bedlington Station. Similarly, the German House in Choppington was bought by a group of miners in 1901 for use as a social club. They raised the finance by issuing 1500 £1 shares, and the two biggest shareholders were two miners, who held between them 70

¹³⁰ Alan Metcalfe, p102-103

¹³¹ Alan Metcalfe, p63

shares.¹³² Another example is the Bedlington Station Recreation Ground Company Ltd, formed in 1892 by a group of miners all of whom attended the Bridlington YMCA. The miners held 25% of the capital, the rest being owned by the colliery and two spirit merchants.¹³³

Critically, therefore, the informal relationships within the communities in which the workers lived, at work and at leisure, whilst being at the heart of the development of strong cohesion and identity, were at the same time contributing to the creation of institutional rigidity as were the formal structures such as Trade Unions. Work was, in that sense, at the confluence of economics, class and politics, and if it was not the only place they came together, it was critical because of its centrality to each of these areas and the lives of those engaged in it.

The institutional rigidities model in part seeks to explain why the Chandler corporate model was slow to be adopted in the UK, because institutional rigidities precluded the adoption of the management techniques, roles, and processes that Chandler argued were so important. More recent work has shown that Chandler's work, especially on the United Kingdom, was lacking in evidence and an oversimplification of a more complex situation. In particular, Chandler's view that the United Kingdom economy had an excessively close attachment to family ownership has been found to be wanting.¹³⁴ Elbaum and Lazonick argue that British industry in the latter part of the nineteenth century was

¹³² Alan Metcalfe, p26-7

¹³³ Alan Metcalfe, *ibid*, p31

¹³⁴ See for example L Hannah, '*Strategic Games, Scale, an Efficiency, or Chandler Goes to Hollywood 1*', in *Business in Britain in the Twentieth Century: Decline and Renaissance?* ed. R Coopey, and P Lyth, ; Oxford: Oxford University (2009) p21

characterised by numerous firms with small market shares, (the UK also had as many large firms as competitor countries such as Germany and the USA) with high degrees of regional concentration and vertical specialisation, characteristics that will become familiar throughout this chapter.¹³⁵ Most of their financing came from retained earnings and family and friends' wealth, rather than from investment from banks or the government which characterised parts of the German or American economies.¹³⁶ It should be noted though that family dynasties were frequent in both Germany and America. Krupp's, a family firm from Essen, were the largest company in Europe at the beginning of the 20th century, and the major weapons manufacturer for Germany in both world wars.¹³⁷ The Du Ponts in the USA have been one of the richest families in the United States since the mid-19th century, when it started building wealth arising from the manufacture of gunpowder.¹³⁸ Businesses, and especially those in the engineering and shipbuilding sectors, had to create and maintain substantial capital and re-embodiment this in their products over time.¹³⁹ Chapter 3 provides direct evidence of the order, build and deliver cycle for marine engines made by the Scotia Works. The general principle was a payment at the time of order, then a final payment once trials had been successfully completed. This also meant a fundamental change in the relationship between business and labour. As

¹³⁵ Elbaum and Lazonick, p 3

¹³⁶ Elbaum and Lazonick, p 3

¹³⁷ <https://www.thyssenkrupp.com/en/company/history/the-founding-families/>, accessed 13/10/2021; https://en.wikipedia.org/wiki/Krupp#History_of_the_family, accessed 13/10/2021

¹³⁸ John D Gates, (1979). *The du Pont Family.* New York: Doubleday & Company 1979

¹³⁹ Details of the Scotia Engineering Works order book are analysed in Chapter 3 and show the billing cycle for marine engines.

labour controlled more of the production process through control of labour supply, rigid demarcation rules and increasing divisions of labour, the relationship necessarily became more pragmatic on both sides as business sought to manage the cost base whilst labour sought to maximise employment and wages. In addition, these businesses needed more information than their predecessors; as competition increased, it was no longer sufficient to keep doing the same thing; innovation was required. Thus, informal and formal networks grew up, sometimes shareholders and investors who provided the capital, sometimes through institutions such as the Newcastle Literary and Philosophical Society, or sometimes through more formal arrangements such as the Iron and Steel Institution. Shipbuilding and engineering did not or were not able to adopt many of the tools of managerial capitalism such as the separation between ownership and control (see Chapter 2 for a description of how this affected Armstrong's and Clarke Chapman). This might not necessarily have been an inherently bad thing as the ability to retain profits without the need to disburse them to shareholders outside the business did provide a cushion of cash in an industry prone to sharp swings in demand and which relied heavily on working capital. This was compounded by the continuing reliance on the craft nature of the construction process and the lack of product standardisation, with dependence on the individual and collective skills of the crafts involved and the effective handing over of workflow control to those craft teams. Added to this was the enduring cyclical nature of the ship owning business, which was well known for bursts of optimism and pessimism

rapidly following each other. John Williamson, a former President of the Chamber of Shipping said that: “As you know, shipowners are very gregarious; when they see other people building, they build too.”¹⁴⁰

The argument for institutional sclerosis is that decline was caused by the inability or unwillingness of institutions (whether of employers, employees, firms, or even government) either to spot the changes coming at them or adapt to those changing circumstances.¹⁴¹ In the context of North Eastern engineering industries, there were clearly institutions and networks whose main concern was redistribution, whether of wages, dividends, or positions of influence, rather than Olson’s non-excludable benefits, items which are of general benefit such as public roads, or pertinently to this work, the dredging of the River Tyne by the Tyne Commissioners.¹⁴² The concern of craft unions to preserve jobs above almost everything else, the attempts by family businesses to keep control within a small, interrelated network of family, and the membership of influential trade, political and social organisations intent on preserving the status quo can all be seen in the context of Olson’s theory. The premise of this thesis is that this is a product of the communities from which those unions, businesses and organisations emerged.

Elbaum and Lazonick argued that Britain failed to take advantage of newly developed models of mass production, economies of scale and corporate management techniques because of the legacy of institutions

¹⁴⁰ Evidence of John Williamson, Q 11,219, ‘The Royal Commission on the Depression’, Third Report 1886, C4797, p157

¹⁴¹ Mancur Olson. *The Rise and Decline of Nation*, (New Haven: Yale University Press, 1984)

¹⁴² Public transport is potentially non excludable if there were no barriers to access such as fares. Generally, a nonexcludable benefit is considered to be something of public good.

and organizations that developed in the nineteenth century. In other words, they failed to make the most of their first-mover advantage.¹⁴³ It was not cultural conservatism that constrained British industry; rather, it was the institutions involved, whether in education, finance, or commerce which had become rooted in traditional ways of working. In his study of shipbuilding, Edward Lorenz builds on the 'Institutional Rigidities' model and argues that it was imperfect knowledge about the marketplace that led to poor strategic decision making and distrust between owners and workers, ultimately leading to competitive decline.¹⁴⁴ This though seems unlikely in the North East, with the close clustering of industries and associated networks providing ample opportunity for information, knowledge and skills transfer.

Institutions, though, do not exist without two critical components. Firstly, a socio-cultural construction (family groups and control within firms, group identity manifested in Trade Unions), and secondly a networking and clustering component that enables the institutions to function not just internally but externally within the broader marketplace as well. Institutions therefore are not isolated or insulated from their environment, and whilst they can and will develop their own cultures they will have to, at the very least, acknowledge that environment within that culture. Without either a partial or wholly symbiotic relationship between the institution and its environment, the institution will soon lose legitimacy and cease to be viewed as an authentic 'voice' of its constituency.

¹⁴³ Bernard Elbaum and William Lazonick (eds), *The Decline of the British Economy* Oxford 1986

¹⁴⁴ Edward Lorenz, p20

Therefore, the relationships between community and institution, and between institutions, lies at the heart of the way in which we understand change over time.

The structure and organisational combination of smaller companies and craft specializations that were the hallmarks of success in the 19th century were not fit for the more competitive markets of the 20th century, principally because other players were able to benefit from new techniques, technology and move towards standardised production processes, reducing their costs and increasing their competitiveness, a classic 'second-mover' market advantage. The concentration of shipyards in specific regions in the UK meant workers were able to move from yard to yard as demand for their specialised skills rose and fell, whilst in other competitive countries such as Germany the localisation of industrial regions meant that shipyards could offer greater security of employment because there was less opportunity for workers and their skills to move between yards. This meant that employers were able to use these workers more flexibly, which in turn reduced the constraints imposed by the fine division of labour and enabled a better return on investment in productivity-enhancing tools and processes.¹⁴⁵ The scale of production and associated productivity benefits could not be obtained without consolidation and the elimination of local competitors, and this was compounded by the trade specialisation imposed by the craft unions. Their focus on job retention led to an increasing emphasis on demarcation and resistance to change in working practices. So,

¹⁴⁵ Lorenz and Wilkinson, p114

unwittingly, both labour and company organisations reinforced their own decline as their organisations gradually sank into a semi-comfortable mode of preservation, rather than consolidating the gains already made and learning from their competition.

Chapter 2 compares Palmer's, Armstrong's and Clarke Chapman's approaches to capital, profitability, and expansion, and in none of these cases can it be said, *at least during the period under review*, that they failed to develop their businesses, nor that they missed out by failing to float publicly. One barrier was the perceived loss of control that would come with a flotation, although this could be overcome by creating a two-tier share capital, with voting rights restricted to 'A' shares retained by the family, or by restricting the shareholder register to known and trusted associates.¹⁴⁶ Secondly, the peaks and troughs of the shipbuilding sector meant there was often a preference for the payment of dividends over the accumulation of capital for investment within family firms, potentially limiting their willingness to invest for the long term, although as will be shown in the case of Palmer's in chapter 2 it was the quality of the investment decisions that was the issue, rather than the willingness to invest. Contrast this with the legal framework in the USA, notably the Sherman Act, which aided the growth of bigger businesses by forbidding cartels of family firms.¹⁴⁷ The consolidation of firms in the US into giant oligopolies such as AT&T, GEC, and International Harvester was

¹⁴⁶ This construction was still in place in some SME breweries such as Youngs and Fuller, Smith, & Turner until recently.

¹⁴⁷ The Sherman Antitrust Act (Sherman Act, [1] 26 Stat. 209, 15 U.S.C. §§ 1–7) was passed by Congress in 1890 during Benjamin Harrison's presidency.

supported and facilitated by a strong investment bank involvement, albeit with family dynasties still in control. The market control that was enabled by this process it was believed produced better strategic planning by the managerial cadres within them (although these cadres were still controlled by the owning families), which made them a more attractive opportunity for the investing public. This created in turn a marketplace in US securities, enabling more money to be raised when required.¹⁴⁸

Compared to the US, at the beginning of the period under study most funds were raised by floating limited companies locally, with securities placed with a limited range of known individuals, whether former partners, directors, friends, or local contacts, as will be shown in chapter 2 with a review of the shareholdings in Clarke, Chapman.¹⁴⁹ An active London-based stock market, with all the ancillary support services did not develop until the second half of the 1890s. Chandler believed that the replacement of family control by integrated and centrally controlled companies was, in the UK at least, more apparent than real. What actually replaced the traditional family firm were loose federations of family concerns, with under-developed management structures, resulting in managers without a stake in the business having little effective responsibility. However, as Dintenfass points out, if having active family engagement in firms had a direct limiting effect on productivity and

¹⁴⁸ Michael Best and Jane Humphries, *'The City and Industrial Decline'* in Elbaum and Lazonick, *"An Institutional Perspective on British Decline"*, p 225

¹⁴⁹ Best and Humphries, p226

efficiency, then the German economy should not have proved to be more competitive than the British after the last decades of the 19th century.¹⁵⁰

One contention of this thesis is that institutional 'rigidity' is not sufficient to describe the process in the North East. This was much more a case of the institutions becoming sclerotic, of slowly and unconsciously becoming rigid and unresponsive, and thus losing the ability to adapt. The increasing subdivision of labour due to the rise in complexity of goods being produced provided means for labour to retain control over the production process. When found in the context of closely knit industrial districts and clusters of firms using similar skills, the effect was compounded when the control of the supply of trained labour was controlled via the apprenticeship process, as it became much harder to automate or semi-automate tasks without the active approval and acquiescence of the labour force. Whilst this might have had the positive benefit of placing the costs of training and labour management outside the firm's cost base, the negative effect of constraining the numbers coming through the process placed a restraining hand on business development and expansion. Fear of losing the status that came with skilled work and the lowering of wages that would follow provided a powerful countervailing force to the second industrial revolution. Thus, the institutions in the form of the trade unions and the employers were moving towards an impasse that neither could afford to break, with unions looking to preserve their control over work processes at the expense of

¹⁵⁰ Michael Dintenfass, *The decline of industrial Britain 1870 – 1980*, (Routledge: London, 1986) p66

flexibility, and the employers wanting the flexibility but not at the expense of preserving work. The system of internal subcontracting (see chapter 2 and chapter 4 for an example of this in the relationship between the Platers and the Platers' Helpers) was seen as anathema to the 'right to manage', and the role of the foreman (again see chapter 2 for more discussion) came to the fore. The ASE refused to accept a diminished role in workshop working practices, and the 1897 dispute between the ASE and the Engineering employers led eventually to an acceptance by the union of managerial prerogative.¹⁵¹ This was not to last, and by 1910 most craft unions had returned to the status quo ante. A similar situation obtained in shipbuilding, where despite attempts to impose management disciplines the unions retained effective control. The deskilling and decomposition of working practices that were fundamental to the scientific approach to management failed to happen in engineering and shipbuilding. There is a discussion on this topic at the end of chapter 4 below. Little wonder then that sclerosis settled in.

There are then a range of ideas and concepts that can be applied to the development and growth of the shipbuilding and engineering sectors in the North East in the period under discussion. Chandler offers some tempting insights, but subsequent work has shown that much of his understanding of the UK business sector was limited, and a range of ideas have merged to challenge him. The industrial district and clustering model offer a promising framework for analysis, especially because of the

¹⁵¹ Wilson, p 163

role institutions of all sorts played in the formation and development of the sector, and because of the agglomeration benefits to be obtained by proximity. These factors will be examined in more detail in chapters 2 and 3.

Chapter 2: Workers, Managers, and the slow spread of sclerosis

There's just now a botheration, agitation and vexation,
And rebellion in some minds appear to lurk;
For some men of mighty jaw want to make and pass a law,
Saying when and where a working man must work,
That scarcely troubles me for I but too plainly see,
Whilst my living on this earth I have to seek;
I must get up with the lark, I must peg away 'til dark,
And my 'grafting time' must be six days a week.
Chorus: *All the week I keep on slaving, for the sabbath, how I'm craving,
For from my domicile I scarcely roam;
My children and my wife are the comfort of my life,
How I pray for my Sunday at home.*

Written and composed by Frank Egerton - 1892
Performed by Tom Costello (1863-1943)

The previous chapter discussed ways in which engineering and shipbuilding in the North East displayed the characteristics of clustering, reinforced by networking, and how this was reflected in the close relationship between community, institutions and industrial development. Having outlined that relationship, this chapter will go on to argue a major theme of this thesis, that the major reason for the long term decline of engineering and shipbuilding in the North East was institutional sclerosis, and that this can only be fully understood by examining the extra-organisational influences of surrounding communities on those institutions, and to do so through an examination of two of the most important communities, workers and managers, as well as the interface between the groups, the foreman. It will shed light on three of the research questions, namely how far were social relationships an underpinning factor of economic success as well as long term decline. What were the processes through which individual and collective interests

were expressed, and interests maintained, and how did employer / employee relations work in reality? The chapter makes use of network and clustering theory as one of the methods to analyse the ways in which the communities exercised their influence.¹⁵²

Using three of the biggest firms, Palmers, Clarke Chapman, and Armstrong's as examples, this chapter will examine the way in which extended families maintained control in these companies, something which proved increasingly contentious and problematic as the companies got bigger and the scope of operations for those running the businesses became unmanageable. The firms relied on control through subcontracting and the use of foremen, only later in the period under study bringing in professional managers. Quail's concept of proprietorial capitalism will be informative in understanding the development (or lack of) management skills. This meant that whilst the businesses were successful, they were slow to take advantage of new markets, technological developments and process improvements which might have provided a more secure and longer term future. Instead, the short term benefits of retained control and of dividend payments were preferred. The cumulative effect of the evidence will be to point towards institutional sclerosis as a compelling explanation of the ways in which individual decisions, manifested through community and organisational structures, contributed to the long term decline of shipbuilding and engineering. The chapter argues that all parties, owners, managers, workers, Trades Unions contributed to this sclerosis which was the result of the cumulative

¹⁵² John F Wilson and Andrew Popp, p 57.

effect of multiple choices and decisions each of which in its own context was a rational move by a rational actor.

Control of labour and of capital

The growth of engineering and shipbuilding at the start of the period meant that craft skills such as boiler making, carpentry, lathe operating, smiths and iron moulders were in high demand. As demand for labour increased, the craft unions sought to retain as much control over where and how their skills were utilised. A rigid apprenticeship system restricting the numbers of apprenticed or time served workers allowed to perform the work combined with strict adherence to demarcation lines and the prioritisation of job retention were the means of doing so. This restricted the labour pool employers could access, making it difficult to respond to shifts in product demand. Restrictions on apprenticeship numbers caused frustration amongst employers and employees, and rigid demarcation lines meant that managerial priorities were skewed to respecting them rather than developing more efficient organisations. The Boilermaker's Society's handbook shows their desire to control the apprenticeship process. Rule 22, Admission of Apprentices, stated:

“Section 2: No one shall be acknowledged by this society as having any claim on the trade who does not commence working at the same at the age of 16 years and continue at it for the space of five years, so as to enable him to become an efficient workman, and unless he is such he shall not be admitted a member of this society.

Section 5: The number of apprentices must not exceed one to every five journeymen working in any shop or yard. This *to apply in slack*

times as well as busy times. The average number of journeymen working at the trade for any employer during five years shall be a guide for regulating the number of apprentices employed.”¹⁵³

Until the late nineteenth century, shipbuilding, engineering and ancillary firms were generally small, often family owned or partnerships, generating working capital either from retained profits or through the sale of bonds or other financial instruments to interested local parties. For example, the Horden Coal Company, formed in 1900, failed to raise any more than £45,000 from a public offering of shares, instead raising the bulk of the capital required (some £250,000 in total) from the Company’s promoters themselves.¹⁵⁴ This approach had the benefit that the owners retained control and raised finance when required without ceding control to shareholders. By 1914, a number of North Eastern engineering firms had become shareholder owned, albeit generally with the families retaining control through majority shareholdings (see the example of Clarke Chapman later in this chapter). This ‘proprietary capitalism’ was enabled by the ways in which the Joint Stock Company structure developed in the UK.¹⁵⁵ There was an increasing tendency for the number of shareholders in companies to rise and consequently their

¹⁵³ The Times, “*The Crisis in British Industry.*” 21 Nov. 1901, p. 12. The Times Digital Archive, <https://link.gale.com/apps/doc/CS201517429/GDCS?u=unn&sid=GDCS&xid=ce8e4ca1>. Accessed 8 Apr. 2020. The original text is from the 1896 rulebook, with the italicised text added to the 1901 edition.

¹⁵⁴ Norman McCord, pp116-177

¹⁵⁵ Proprietary capitalism in UK Joint Stock companies is characterised by centralised power in a Board of Directors who were stakeholders but not necessarily experts, and who unwilling to delegate to managers any power beyond the minimum. This resulted in Boards who were very capable of blocking initiatives and spending, which resulted in very limited development of managers and a consequential overall lack of improvement in the skills and knowledge of that group. See John Quail, p80

individual stockholding diminished.¹⁵⁶ These shareholdings were often part of an investment portfolio, meaning that returns were of more interest to these shareholders than the exercise of control over the business. Control sat with the directors, whose role in exercising the powers to control and conduct the business meant that they increasingly became what Quail has described as 'self-perpetuating oligarchies'.¹⁵⁷ Thus, whilst the ultimate ownership structure may have changed, the management of the business often did not. This obdurate family control contributed to unpredictable profitability that deterred many potential investors. For example, the charts below (Figures 4,5 and 6) show that for Palmers between 1866 and 1914 there was little correlation between capital (investment and working) employed in the business and the firm's profitability; especially as the ROCE (return on capital employed) closely aligns to the profit chart and not the capital chart.¹⁵⁸

¹⁵⁶ John Quail, p 75

¹⁵⁷ Quail, *ibid*, p 75

¹⁵⁸ A J Arnold, "*Dependency, Debt and Shipbuilding in 'Palmer's Town'*", *Northern History*, 49:1, 99-118, DOI: 10.1179/174587012X13230354351708. In general, investors tend to favour companies with stable and rising ROCE numbers over companies where ROCE is volatile and varies from one year to the next.

Figure 4 – Palmer's Profits 1865 - 1916

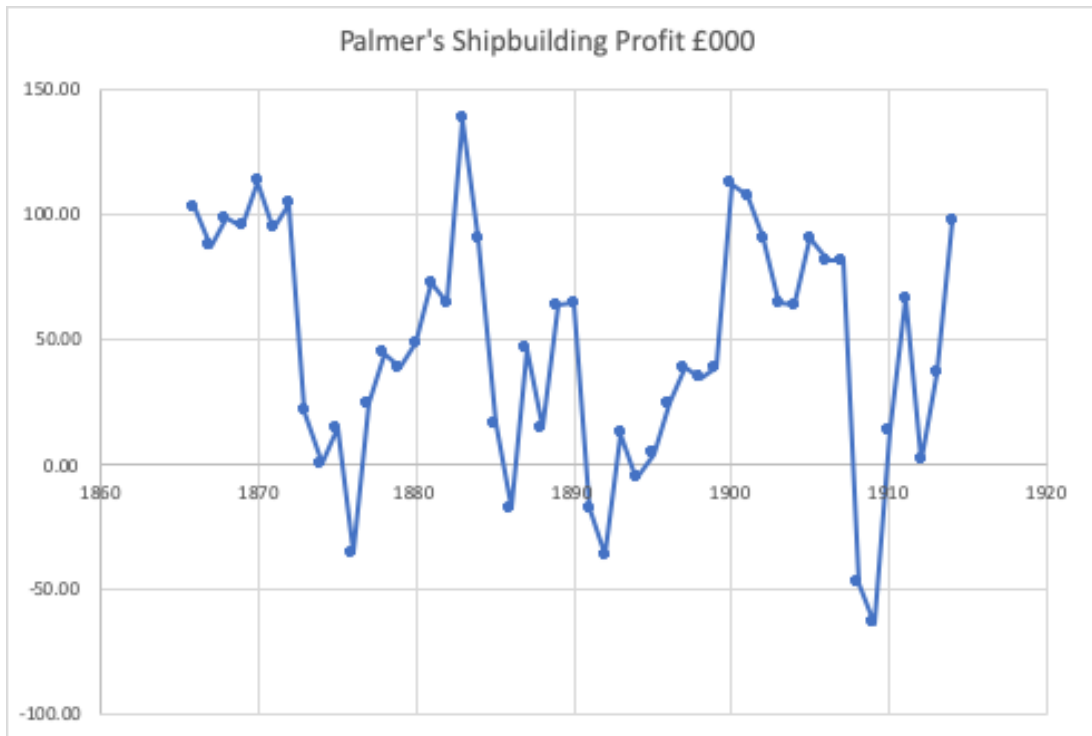
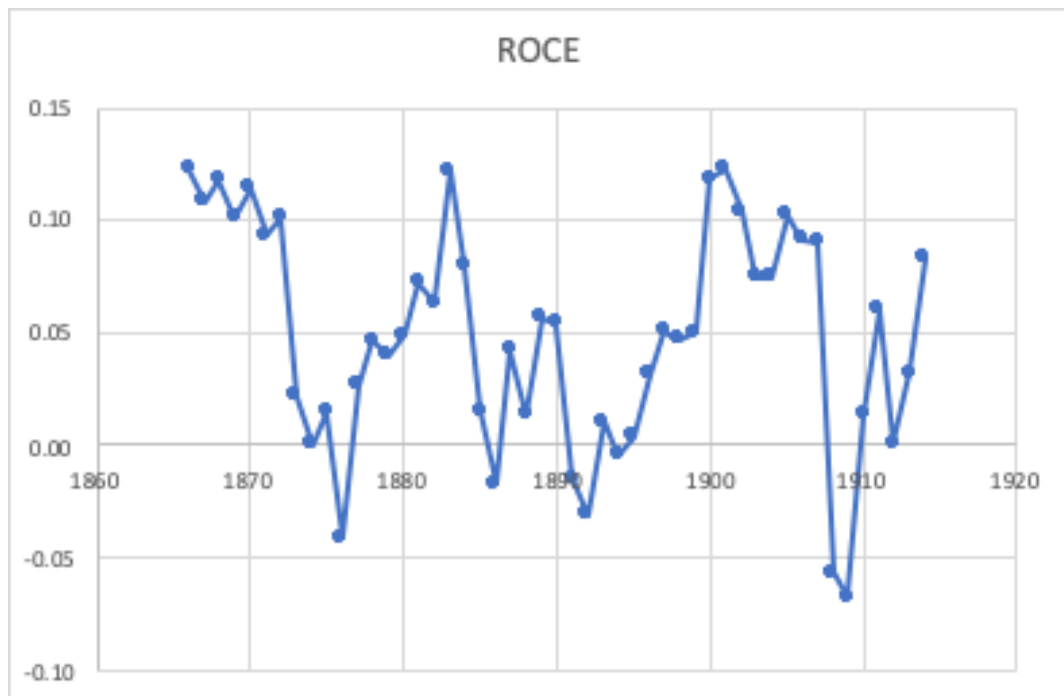


Figure 5 – Capital employed at Palmer's 1865 - 1916



Figure 6 – Return on Capital Employed at Palmer's 1865 - 1916



The role of the foreman

Furthermore, the growing technological complexity of ships and the accelerating speed of innovation made production an increasingly costly and difficult business. As a result, ship building became too expensive and diverse for individual owners to manage without support. Initially, this management function was fulfilled by the foreman, who hired, fired, allocated work and managed costs. Alfred Williams in his work on the Great Western Railway in Swindon was scathing: “Most foremen are excessively autocratic and severe with their men, denying them the slightest privilege or relaxation of the iron laws of the factory.”¹⁵⁹ A few were kind and humane, but Williams believed they were a minority. Nonetheless, foremen were critical in the management of most engineering operations, with their role becoming increasingly important as

¹⁵⁹ Alfred Williams, *Life in a Railway Factory*, (London: Duckworth & Co, 1915) p62.

firms grew and complexity moved beyond the control of the 'master-employer'. Most foremen knew their workshops well. The Royal Commission on Technical Instruction in 1884 noted that:

“ For foremen the only true education was that of the shop. The good foremen with whom he had been acquainted, not only in Germany but also in England, had almost invariably risen from the ranks. Of necessity they were men of more than ordinary intelligence and force of character. Some had received very little education, but by attending night schools, or by private study, they had usually improved themselves in the theory bearing on their daily work. ”¹⁶⁰

As shipyards grew, supervisory functions fell to the practical experience of the foreman, who allocated work, set rates of pay, quality checked work and coordinated the flow of work across the yard.¹⁶¹ Similar practices prevailed in engineering organisations for the same practical reasons.¹⁶² The foreman possessed the experience and knowledge of the work, and occupied the social position needed to mediate disputes and exercise authority. As their role increased in importance, they began to network, and through their Association they were able to share

¹⁶⁰ Second report of the Royal Commissioners on Technical Instruction. Vol.1 C.3981 pXXIX. <https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1884-060422?accountid=12860>

¹⁶¹ See Alistair J. Reid, *ibid* p38-39

¹⁶² In the locomotive business the constraints imposed by standard track gauges, platform lengths, carriage design, braking requirements and sundry other issues meant that locomotives increasingly came as part of 'classes of standard design. This was enabled by the role of the Consulting Engineer (Henry Ivatt, Sir Nigel Gresley, Patrick Stirling for example) who designed and oversaw the construction and development of the locomotives on behalf of individual railway companies. The role of the foreman remained, but with less influence over the detail of the end product.

knowledge and experience.¹⁶³ Foremen were frequently union members, experienced craftsmen and had to deal with difficult and complex problems.¹⁶⁴ They often sided with their own teams in demarcation disputes, and encouraged the use of the closed shop, especially those who remained in their union. J F Clarke gives examples of foremen who remained in the Boilermaker's Society:¹⁶⁵

Name	Trade	Employer / Location
J Young	Platers & Caulkers	Swan & Hunters
R S Webster	Plater	Scotswood Yard
S Brooks	Plater	Leslie's
B Black	Under Manager	Newcastle
J Cameron	Head Foreman	Richardson's
J Bell	Riveter	Thompson's
W Smith		Oswald's
D Patrick	Plater	Armstrong Mitchell's
J Robertson	Riveter	Doxford
P Muir	Plater	Schlesinger, Davis & Co
John Hall		Sunderland

As industrial conflict intensified in the 1890s, employers pressured foremen to abandon union membership and choose loyalty to management. In 1897, employers established Foremen's Mutual Benefit Societies (Armstrong's, and the Wallsend Slipway Company both did so) with employers' contributions, but members were barred from union membership.¹⁶⁶ This was the start of a growing reliance on professionally trained managers which initially resulted in tension between the

¹⁶³ "We have had a new departure in the shape of Saturday afternoon visits to works of interest in the district. In May last over 100 members were shown through the principle engineering works on the Wear by the Sunderland portion of our members...A return visit to Elswick was arranged in September, when a large number of our members were shown over the principle shops at Elswick by the respective foremen, and afterwards dined at the Crown Hotel." "FOREMEN ENGINEERS AND DRAUGHTSMEN." Newcastle Courant [1803], 30 Nov. 1889. British Library Newspapers, <https://link.gale.com/apps/doc/Y3206534793/GDCS?u=unn&sid=GDCS&xid=2c71736c>. Accessed 8 Apr. 2020.

¹⁶⁴ J.F. Clarke, p 306

¹⁶⁵ J.F. Clarke, p 306

¹⁶⁶ Alastair Reid, p 39

structures and habits of family enterprise and the efforts of new managers to run firms as efficient businesses, rather than simply to meet narrow family concerns.¹⁶⁷

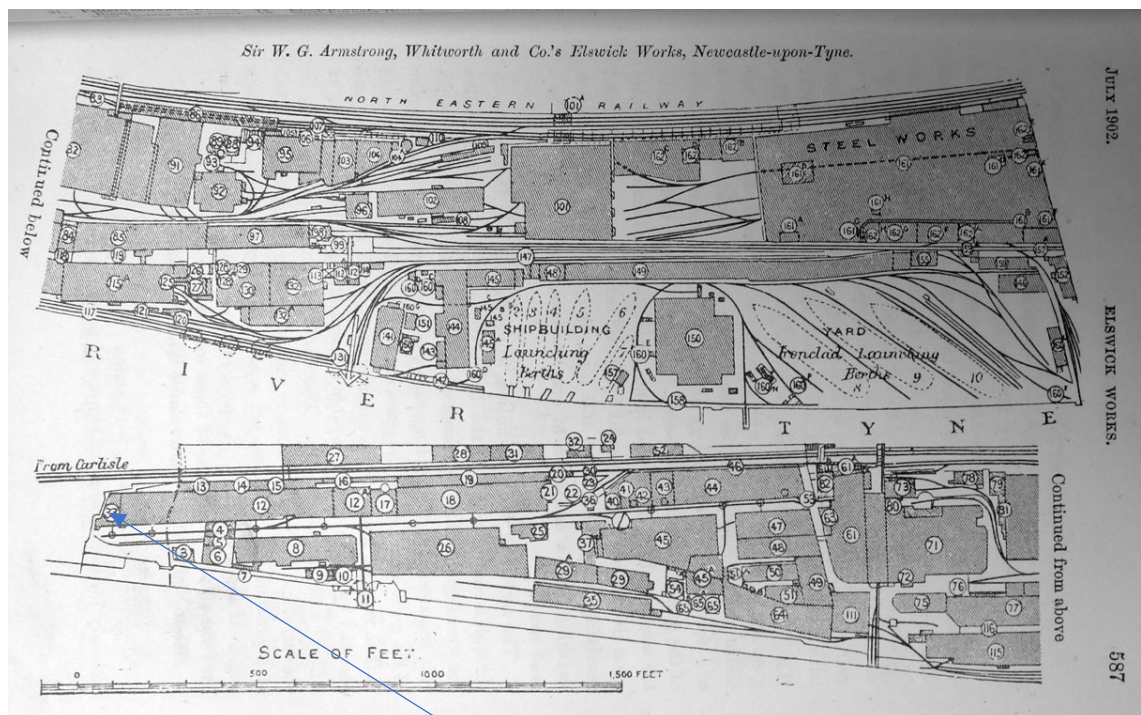
Sometimes such union-loyal foremen were unpopular with other union members, and employers' attempts to wean foremen away from union influence were relatively unsuccessful as the benefits that the unions could provide were a compelling reason for foremen to keep their membership.¹⁶⁸ The foreman therefore was in an anomalous position, because while they were sought by employers to be a manager, they retained their skill and knowledge of both the work and the worker. Their social position (generally they would have had a higher wage and therefore had access to better housing) within their communities strengthened their knowledge of the workers they supervised, though exercising authority over them whilst often living amongst them caused

¹⁶⁷ When Armstrong's bought the Low Walker Shipyard from Charles Mitchell and Henry Swan in 1882, Stuart Rendel, a board member and old family friend of Sir William Armstrong, wrote of a 'mischievous separation between capital and management' that was inherent in a Limited Liability Company. See Henrietta Heald, p 142

¹⁶⁸ "The position of affairs in regard to the engineering foreman is regarded as one calling for special attention. This person is generally a man in the prime of life, if not well advanced in years, who has paid into the funds of the A.S.E. for a lengthened period, is looking forward to superannuation, and, in the meantime, is practically under the thumb of his union. When, for instance, a particular branch of the union has an undue number of men in receipt of out-of-work pay, it sends to a foreman, and intimates more or less bluntly that he must find work for certain individuals. If there should be no openings for these individuals, then the question arises whether he should not, in some way or other, make openings, and the attempt to do this is too often the reason for the constantly occurring disputes about " lines of demarcation " in the allotment of work among different branches of workers. It is an open secret, too, that if these unionist foremen do not succeed in giving satisfaction to their union they are liable to be called upon to render an account and also to pay a fine, while there is reason to believe that in some instances foremen have been deprived of all their benefits in the A.S.E. because they have not sufficiently considered the interests of the unionist workers." "Engineering Foremen's Benefit Society." Times, 6 Nov. 1897, p. 10. The Times Digital Archive, <https://link.gale.com/apps/doc/CS167960934/GDCS?u=unn&sid=GDCS&xid=d8598071>. Accessed 8 Apr. 2020.

difficulties and tensions.¹⁶⁹ At the western end of Armstrong's Elswick works six houses, in what became known as Foremen's Row, were built within the boundaries of the factory, but close to the pubs and shops on Scotswood Road where a lot of the workforce lived. This would most likely have been a move by the firm to reward them and separate or even break the bond between the foremen and the workers. This 1902 plan shows the houses at location 3:¹⁷⁰

Picture 1 – Map of Armstrong's Works in 1902



Foreman's Row

¹⁶⁹ Social position can be seen as a measure of perceived social value, the relative level of respect, honour, assumed competence, and deference accorded to individuals and their roles.

¹⁷⁰ <https://www.gracesguide.co.uk/images/c/ce/lm1902IME-p0587.jpg>,
<https://www.gracesguide.co.uk/images/2/21/lm1902IME-p0586.jpg>

REFERENCE TO PLAN OF ELSWICK WORKS.		DESCRIPTION OF SHOPS.	
3. Foreman's House.	37. Offices (Ordnance).	88. Foundry Pattern Store,	115. Gun Machine Shop
4. Pipe Shop and Test.	40. Boiler House.	89. Acceptor House and	116. Gas Engine House
5. General Store.	41. Engine House.	90. Gun Machine Shop	117. Iron Ore Jetty (end to
6. Fitting Shop.	42. Machine Shop (No. 1).	91. New Store.	end).
7. Millwrights' Tool Store.	43. Brass Finishing Shop	92. Steam Hammer Shop	118. Gas Engine House.
8. Erecting Shop (South).	(No. 2).	(No. 31).	119. do.
9. Joiners' Shop.	44. Forge Shop (No. 4).	93. Furnaces.	120. Store (No. 24 shop).
10. Coal Store.	45. Gun Machine Shop	94. Boiler House.	121. Stoveholder's House.
11. Jetty (West).	(No. 11).	95. Cutting Shop (No. 22).	122. Turret and Machine
12. Erecting Shop (North).	45a. do.	96. Biting and Grinding	Shop (No. 24).
12a. Fitting and Brass Fin-	46. Railway and Coal	97. Smith's Shop (No. 23).	123a. Extension to No. 24
ishers' Shop.	Depots.	98. Coal Shed and Store.	Shop.
13. } Erecting Plant, &c.	47. Gun Machine Shop	99. Store.	124. Blacksmith's Shop.
14. } (No. 2).	(No. 2).	100. Time Office under	141. Blacksmith's Shop.
15. } (No. 12) over	48. Gun Machine Shop	101. Machine Shop (No. 18).	142. Juby.
16. } and Pl in Store.	(No. 14).	102. Bridge.	143. Boiler House and Brass
17. Engine and Boiler House	49. Gun Machine Shop	103. Machine Shop (No. 5).	Store.
and Chain Store and	(No. 13).	104. Leam Casting Shop.	144. Stores and Modelling
18. Crane and Bridge E-rect-	50. Polishing Shop (No. 10	105. Accumulator House.	Room.
ing Shop.	and Store No. 13).	106. Engine House.	145. Offices.
19. New Smith's Shop, Iron	51. Furn Shop.	107. Engine House.	145a. Shed for laying down
and Chain Store and	51a. Packing box Shop.	108. Wagon Repairing Shop.	Ironwork.
19a. Test.	52. New Inspectors' Offices.	109. Locomotive Shed	(Large).
20. Painters' Shop and Store.	53. Time Office.	110. Locomotive Shed	145b. Fire Brigade House.
21. Coach House and Plan	54. New Test House.	(Small).	146. Lavatory and W.C.'s.
Room over.	54a. Gun Carriage Shop (Nos.	111. Turret and Machine	147. Inspectors' Offices.
22. Iron Store.	55. A, B, C and D).	Shop (No. 14).	148. Bulkhead Shop.
23. Fireproof Paint and Oil	61a. Gun Carriage Shop Ex-	112. Engine House.	149. Tool Shop and Machine
Stores.	extension.	113. Accumulator House.	Shop.
24. Office Lodge.	61b. Time Office.	114. Coppersmith's Shop	150. Plate Shop.
25. Offices (Old).	62. Boiler House.	(East of No. 112).	151. Blabogary Drying Shed
26. Bridge Yard.	63. Engine House.	161. Blacksmith's Shop.	and Store.
27. Pattern Shop and Time	64. Gun Carriage Shop	161a. Accumulator House.	
Office.	(No. 17).	161b. Store Heat, &c.	
28. Pattern Sheds.	65. Boiler House.	161c. Gas Engine House.	
29. New Offices.	65a. Engine House.	161d. Engine House.	
29a. New Offices (Extension	65b. Accumulator House.	161e. Accumulator House.	
Westward).	71. Foundry.	161f. Offices of Steel Works.	
30. Hauling Engine House	72. Time Office.	162. Paint Store, &c.	
and Coal Bunkers.	73. Machine Shop E and F	162a. Joiners' Shop and Boiler	
31. Pattern Store and Dining	Shop (No. 29).	House, &c.	
Room.	74. Electric Shop (29).	162b. Extension to Steel	
32. New Scales and Coach	75. Shell Furnace House.	Works (47).	
House.	76. Machine and Cart Case	162c. Engine House.	
33. New Brass Foundry.	Shop (28).	162d. Store and Dining Rooms.	
Gun Carriage Shop	77. Boiler House.	162e. Low Level Engine	
(No. 29).	78. Millwrights' Shop (No.	House.	
34. Gateman's Lodge.	30).	162f. Boiler House.	
		162g. Engine House.	

The National Amalgamated Union of Labour claimed in 1901 that "in Palmer's shipyard every man who is not a member of our union and refuses to do so will be sacked".¹⁷¹ This suggests that union-loyalist foremen were quite conflicted. On the one hand, union and local community pressures might push them towards defending workers' interests, but on the other they needed to be seen as effective company servants. They were recruited from the shop floor precisely because of their skills and knowledge. Material in the R W Hawthorn letter book gives an example of the control exercised by foremen over the detail of work. Mr Wheldon, the foremen, wrote a set of task instructions that indicate extensive experience in the process.¹⁷² These instructions indicate a need to have the job completed quickly, and are interesting because they show that, when required, work could be moved beyond demarcation boundaries, and that apprentices were deployed as additional, reserve labour, and deployed as needed. This document shows the foreman

¹⁷¹ Quoted in J.F. Clarke, *The Foreman* in Northern History, Volume III, 1973, p20-33

¹⁷² Found in Newcastle University's School of Marine Science and Technology Special Collection, R.W. Hawthorn Letter Book, item no 03003/1

managing the flow of work, the allocation of resources, and the overall control of the process. A paper given in 1899 to the North East Coast Institution of Engineers and Shipbuilders by R.R. Link on "Cooperation and Mechanical Aids to Workshop Cost-Keeping" attracted a comment from H. Weatherall of Richardson Westgarth that managers were constantly trying to reduce the foreman's clerical workload, indicating that the role was increasingly managerial.¹⁷³ The sometimes ambiguous relationship between foreman, workers and management, with the foreman frequently maintaining social links to workers through trade union membership, meant that employers tended to use bonus and other performance related payments to improve productivity through payment by results. But they were often unsuccessful because craft unions objected that piece rates would undermine the quality of work, and employers were often reluctant to pay large bonuses.¹⁷⁴

The rise of the manager

The Hawthorn archive also reveals, by 1907, the use of Workshop Managers, a more recognisably managerial role than the foreman in that their span of control was much larger, covering a whole workshop rather than a section within it, and expected to manage the flow of work in the interests of the whole workshop, not just their allocated section.¹⁷⁵ The

¹⁷³ J.F. Clarke, *A Century of Service to Engineering and Shipbuilding – A Centenary History of the North East Coast Institution of Engineers and Shipbuilders 1884-1984*, (Newcastle-upon-Tyne: North East Coast Institution of Engineers and Shipbuilders, 1984) p 77

¹⁷⁴ Alistair Reid, p 39

¹⁷⁵ The Baldwin Locomotive Works in America was reported as having a single 'foreman' having ..."the supervision of 1,800 men". "American Engineering Competition." Times, 1 June 1900,

nature of work and the way it was being managed, by both employers and employees, was changing. The almost complete control over craft tasks by the craft workers characterising the mid-nineteenth century was slowly fading, though demarcation disputes continued to bedevil engineering firms, as will be shown in chapter 4. Standardisation of tasks, attempts to impose piece work on craft workers, and the introduction of more sophisticated machine tools and processes meant the foreman's role diminished and the manager's role in the allocation of resources and quality control increased.

Ownership and control thus gradually separated as the family owners began to vest control in a new class of managers, and networking amongst this new breed of engineering managers at the North East Coast Institution of Engineers and Shipbuilders will be discussed below. However, these institutional changes within firms were undermined by the ability of family owners and their investor allies to subvert the efforts of managers to prioritise investment and firm profitability over family vested interests. The 'elite' community of wealthy owners and their social and commercial allies overcame the institutional changes within firms. The extra-organisational demands of family owners and their allies constrained the development of consistent management processes, allowing tactical decisions favouring profit and dividends over best

p.13. The Times Digital Archive,
<https://link.gale.com/apps/doc/CS218556097/GDCS?u=unn&sid=GDCS&xid=a4c596e2>. Accessed 8 Apr. 2020. This indicates either some inconsistency in the use of the terms 'foreman' and 'manager', or simply the use of a term recognisable to a 'Times' audience.

practice.¹⁷⁶ Dividend payments meant that cash left the business and went straight to the family and other shareholders, rather than staying in the business and providing either investment or working capital. Chandler argued that the development of management processes, systems and structures enabled the American railroad companies to deal with the coordination, control and planning of the huge range of tasks involved in building and running a railway.¹⁷⁷ He pointed out that the type of person who took on these challenges was different from the entrepreneurs who first began the companies, being salaried employees, mainly from a civil engineering background with practical railway experience before they took on management responsibilities. It is not clear how the management techniques and skills they employed were developed, whether it was through formal training or on the job experience, but it would be reasonable to assume that the practical experience of what we would now recognise as 'project management' was acquired and required when building railways and was the foundation of a lot of their management skills. Some of the tools which managers today would recognise, such as the organisation chart, data collection and analysis, and financial reporting tools were all to be found on US railroads, although there is

¹⁷⁶ In 1908 and 1909 Armstrong's made no provision in their accounts for depreciation, having had a favourable revaluation in 1907. This revaluation was taken as profit, and not put into the reserves, something which had been normal practice up to then. At the same time there were heavy sales of shares by some of its most senior directors. See R.J. Irving, 'New Industries for Old? Some investment decisions of Sir W.G. Armstrong, Whitworth & Co. Ltd 1900-1914', *Business History* 17:2, 150-175; <http://dx.doi.org/10.1080/0007679750000019>

¹⁷⁷ Chandler, p94

considerable evidence that, for example, cost accounting was to be found in British firms a hundred years earlier¹⁷⁸

Frequently, managers recruited to run the business challenged family control, prompting many of them to move to other firms willing to give them more control or to induct them into ownership.¹⁷⁹ Expanding businesses, especially in capital intensive sectors like engineering, required the investment of large amounts of working capital, as raw material costs for engine, hull, and superstructure construction long preceded sales revenue. As will be shown later in the Scotia Works discussion in chapter 3, customers often had to pay as much as half of the agreed price before work started. The tried and tested methods of raising money via local networks became less effective as firms distributed shares more widely (see the example of Clarke Chapman on page 125) so firms started to use loans as well as public sales of shares, often diluting family interests, but not necessarily family control.¹⁸⁰

Trades Unions

Institutions such as firms are the result of complex interactions between individuals, groups, and other institutions. They provide an

¹⁷⁸ Sophisticated cost accounting was certainly practiced by a number of British firms as early as the 1790s. See John Wilson, *British Business History 1720-1994*, p29

¹⁷⁹ John Price (General Manager) and William Denton (Shipyard Manager) under whose leadership Palmer's had launched some 650,000 tons of shipping both left the firm in 1894 to become Directors of C.S. Swan and Hunter Ltd of Wallsend. See Kenneth Warren, *Jarrow: Victorian industrialisation and afterwards*, Newcastle, Leazes Press, 2013, p87

¹⁸⁰ Clarke Chapman became a shareholder owned company in 1893, and between 1894 and 1914 they recorded an average of £31,000 of loans per year on their balance sheet, with a high of £62,000 in 1899 and a low of £1,000 in 1902. Details taken from the Clarke Chapman Balance Sheet extracts in Tom McGovern and Tom McClean, "The growth and development of Clarke Chapman from 1864 to 1914", *Business History*, 55:3, p448-478, 2013.
<http://dx.doi.org/10.1080/00076791.2012.745066>

organisational forum through which their needs, hopes and expectations can be negotiated. The shipbuilding and engineering firms themselves, employers' associations, trades unions, political parties, church and chapel congregations, all provided organisational forums for the expression of different interests and aspirations. Before going on to consider these wider forums, the two primary groups, workers and managers (and in this context managers will be used as a descriptor for owners and managers), need to be considered. Relations between the two groups were mainly practical and pragmatic, but occasionally required mediation. The causes of industrial disputes varied, with wages and working arrangements by far the most common. Beatrice and Sidney Webb observed that between 1890 and 1893 there were 35 weeks in which one or more of the skilled sections of workers on Tyneside were idle because work they claimed for themselves was being done by others.¹⁸¹ There was much discussion of how to manage relationships between workers and employers, and by 1894, 64 trade boards (where representatives of workers and employers were supposed to work together to avoid industrial unrest) were believed to be in existence across Britain.¹⁸² Most of the work of the more established boards was about preventing strikes or lock-outs. They generally covered a specific trade, with representatives elected by the Local Employer's Association and the Trade Unions in the district and trade. They tried, through

¹⁸¹ Quoted in David Dougan, *The History of North East Shipbuilding*, (London: Allen & Unwin 1968) p 124

¹⁸² Report by the Chief Labour Correspondent on the Strikes and Lockouts of 1894, *The Board of Trade*, C7901, 1895, p11

mediation, to settle disputes before they escalated, proving on the whole to be reasonably successful. Figure 7 below, covering the period 1891 to 1900, shows across the UK that between 7% and 10% of disputes were settled by arbitration or conciliation and mediation, compared to around 80% that were settled by negotiation between the parties.¹⁸³ Importantly, though, when the number of workers affected is noted, a different picture emerges, with in 1892, 1893, and 1895 between 30 and 55% of workers in dispute having their issues addressed this way.

Figure 7 – Strikes and Lockouts 1891 to 1900 – forms of resolution

Year	By Arbitration	By Conciliation and Mediation	By Direct arrangement or negotiation between the parties or their representatives	By submission of workpeople	By replacement of work people	By closing of works	Indefinite or unsettled	Total	Arbitration / Conciliation / Mediation as % of Total
Number of Disputes									
1891	14	9	662					685	3.4%
1892	15	4	555					574	3.3%
1893	9	4	442					455	2.9%
1894	32	18	613	170	159	13	56	1061	4.7%
1895	25	35	498	125	160	16	17	876	6.8%
1896	19	30	633	114	107	19	4	926	5.3%
1897	14	27	624	76	105	7	11	864	4.7%
1898	13	30	495	71	96		6	711	6.0%
1899	16	22	562	22	88	3	6	719	5.3%
1900	19	13	487	45	71	4	9	648	4.9%
Number of Workpeople affected									
1891	21,951		245,509					267,460	8.2%
1892	123,781		233,018					356,799	34.7%
1893	304,701		265,359					570,060	53.5%
1894	10,785	8,399	145,448	147,044	6,451	985	5,133	324,245	5.9%
1895	13,251	65,700	119,582	56,719	4,352	2,397	1,757	263,758	29.9%
1896	10,276	10,472	136,307	30,587	7,250	3,159	139	198,190	10.5%
1897	9,756	9,544	187,048	15,207	4,307	1,673	2,732	230,267	8.4%
1898	3,350	16,167	206,926	17,590	9,616		258	253,907	7.7%
1899	3,319	8,386	156,743	7,054	3,980	95	640	180,217	6.5%
1900	7,118	8,593	155,025	8,895	4,918	300	3,689	188,538	8.3%

The Trades Union movement experienced internal challenges and changes during this period. Union membership was growing, certainly in

¹⁸³ Table evolved from data in - Report by the Chief Labour Correspondent on the Strikes and Lockouts of 1900, The Board of Trade, C689, 1901, pxxi; 1891 to 1893 Numbers come from Report of the Labour Department of the Board of Trade (1893-1894) CMD C7565, 1894, p62; 1894 and 1895 Numbers come from Report of the Chief Labour Correspondent on Strikes and Lockouts of 1896 CMD 8643, 1897, pxiv

the first part of the period, even among the skilled unions. For example, national membership of the Amalgamated Society of Engineers increased from 52,019 in 1886 to 60,728 by 1889, and to 67,928 by 1890.¹⁸⁴ The number of unions was also growing. In 1891 The Board of Trade identified 208 different Unions in England alone, ranging in size from the 60,000 plus of the ASE down to the nine members of the Organ Builders' Amalgamated Trade Society.¹⁸⁵ Much of this rapid growth was among unskilled workers. However, from the high point of 1892, when total union membership was 1,237,367 in 594 unions across the UK, membership declined by 2% per year in the next three years. Most of this decline was in unskilled labour unions, hit hard by increased unemployment in some sectors due to a trade cycle downturn. At the same time, there was a growing divide between the 'older' unions which favoured a more collaborative relationship with employers and those newer unions who took a more militant or confrontational approach to their role.

Legal decisions in the 1890s undermined some of the rights won by the Unions in the 1870s, particularly around picketing.¹⁸⁶ At the same time, new organisations emerged to provide employers with non-unionised labour. Together with trade unionists who were hostile to the 'new' unionism of the unskilled, William Collinson founded the National

¹⁸⁴ Labour statistics. Statistical tables and report on trade unions. 1889 and 1890 C.6475 Table I p 10

¹⁸⁵ Statistical tables and report on trade unions. 1889 and 1890 C.6475, Table 1 p 6

¹⁸⁶ At the same time as the 1871 Trade Union Act, the Criminal Law Amendment Act 1871 was passed, making picketing illegal. The Conspiracy and Protection of Property Act 1875 restored the right to picket.

Free Labour Association in May 1893.¹⁸⁷ Opposed to the idea that union membership was a prerequisite for any job, it was effectively an employment agency, with so-called 'free labourers' registering to obtain employment through the organisation. The NFLA, whilst not a major player, did reveal the priorities of some working people. Their free time was limited, and they were frequently more concerned with securing work and wages than abstract concepts of class or labour solidarity. Narrow and immediate rational self-interest thus took precedence.

The differences between 'old' and 'new' unionism were real. Pelling quotes John Burns writing about 'old' unionists as looking like respectable city gentlemen with frock coats and watch chains; whilst the 'new' unionists looked like, and were, workmen.¹⁸⁸ The 'new' unions saw in the desire for an eight-hour working day an opportunity for the state to intervene to improve the lives of the many. The craft unions were focussed on the provision of welfare benefits for their members and continuity of employment. This meant continuing financial solvency was an important element in the calculations about which workers would welcome intervention, and also with which bodies to absorb or amalgamate. Increasing their collective bargaining power by recruiting further down the hierarchy of skill might have been tempting, but such a move had to be financially sustainable. Mergers, expansions and

¹⁸⁷ See Geoffrey Alderman, "*The National Free Labour Association*", *International Review of Social History*, 1976, Vol.21(3), pp.314. In his autobiography Collinson identified John Chandler, Senior Trustee of the Amalgamated Riverside Labourers' Union, and Joe Penrose, President of the Dock Foremen and Permanent Coopers Trade Union as his two additional founder members.

¹⁸⁸ See Henry Pelling, *The origins of the Labour Party, 1880-1900* (Oxford: Oxford University Press, 1965) p8.7

takeovers were therefore considered on entirely pragmatic, rather than political, grounds.

Craft workers versus non-skilled workers

Craft union resistance to non-skilled membership was underlined in the evidence of Robert Knight of the Boilermakers and Iron and Steel Shipbuilding Society to the 1894 Royal Commission on Labour.¹⁸⁹ Asked whether the Union would allow a Tyneside labourer to become a Union member if he had served an apprenticeship, Knight replied that they had never had such an application. Pressed on whether they would allow it to happen, Knight replied that they believed in the old adage of the shoemaker sticking to his last. It was pointed out that this would separate the working class into cast-iron divisions. Knight replied that it would not be desirable for a man of one class to go to another class. Knight's Boilermakers' Union (by then headquartered in Newcastle) represented some 37,300 workers across the United Kingdom. Close co-operation between Knight's craft union workers and their employers was stressed by Knight.¹⁹⁰ Questioned about what would happen if members of the Union went on strike contrary to Union directions, Knight cited an example of his members in Hartlepool, who had demanded an increase in their rates when asked to work on a ship that urgently needed finishing.¹⁹¹

¹⁸⁹ Royal Commission on Labour 1894 C6894-VII, questions 20801-10. The report was published in 1894, but Knight's evidence was taken in 1892.

¹⁹⁰ Eric Hobsbawm refers to the Boilermakers as the extreme type of union built on harmony of labour and capital. See Hobsbawm, *Labour's Turning Point 1880-1900*, (Brighton: Branch Line, 1974) p10.

¹⁹¹ Dale was also chairman of the Consett Iron Company and was a pioneer of the use of arbitration in industrial disputes. The first board of arbitration was formed in connection with the North of England iron trade March 1869, and Dale was its president.

The yard foreman refused their demand and contacted the Boilermakers' Headquarters in Newcastle. Knight consulted his council, and on their direction, he responded that the workers' demands should be met. This being done, Knight then requested details of the men concerned as well as the rates paid to be sent to him. On completion of the work, the Union simply took the additional moneys away from the men and sent a cheque for the disputed amount back to the firm.¹⁹² This closeness reinforced the complex inter-relationships involved in managing work processes. Just who was in charge, accountable or responsible was not always clear. When pneumatic riveting tools were introduced, employers were able to gain some benefits, at the cost of the unions insisting on three men per unit, when it could have been worked with two. The preservation of status and employment came at the expense of productivity.¹⁹³

The existence of the NFLA on Tyneside, the explicit rejection of labourers from the Boilermaker's Union, and the failure of the National Federation of Labour to take off are indicative of weak working class solidarity, clear divisions between skilled and unskilled workers, and differences between those who saw organisation and solidarity as their best way forward and those who did not. This suggests a prevailing attitude to work that was concerned with the preservation of relative position, identity (both occupational and individual), and the retention of

¹⁹² Royal Commission on Labour, 1894. Minutes of Evidence, Group A, p 39, C6894

¹⁹³ Reid argues that overall labour productivity in US shipyards around 1900 was only between 55% and 70% of British shipyards, whilst German yards were only 25% to 40%. (Reid, p30). One of the prime reasons for this though was the shortage of labour and the lack of clustering in these countries. A better indicator might be the increase in labour productivity in joinery between 1850 and 1910 of 60%, despite advances such as a 200 fold increase in the speed of machine planing of wood. (Reid p93)

status than it was about any broader notions of improving society or the general position of the working class. Between 1900 and 1903, there were strikes across the North East shipyards for 35 weeks solely concerned with demarcation disputes, many of which belied notions of class solidarity.¹⁹⁴ This was trades unions as institutions responding to and giving voice to the extra-organisational concerns of members. They acted as they did because it was what their members wanted, not because of a desire for fundamental change. If necessary, members would accept evolution, but revolution was not an option. Figure 8 below shows a list of the industrial disputes on the North East Coast in shipbuilding and engineering in 1900.¹⁹⁵ These are clearly not disputes seeking fundamental social change, not even changes in power relationships.

Figure 8 - Examples of Disputes in Shipbuilding & Engineering, North East England, 1900

Locality	No. of Works	Occupations (Those indirectly affected are in italics)	Number of workpeople affected		Date of Dispute		Cause or Object	Result
			Directly	Indirectly	Beginning	End		
Blyth	1	Platers' Helpers and <i>Platers and Marker Lads</i>	81	32	15-Dec	17-Dec	Refusal of employers to continue system of paying "subs" before regular payday	Work resumed unconditionally
Howdon on Tyne	1	<i>Platers, Platers' Helpers, Marker and Machine Boys</i>	37	100	26-Sep	27-Sep	demarcation of work dispute between platers and blacksmiths	Work resumed pending negotiations which resulted in a compromise being affected
Newcastle upon Tyne	1	Engineers' Labourers	20	30	11-May	17-May	Dispute as to payment of outworking allowance on new work	Outworking allowance to be continued
Shields and Blyth	12	Chippers and Painters	237	300	24-May	05-Jul	For advance in wages from 27s to 33s per week	Advance of 1s per week granted
Sunderland	1	Plater's Helpers (dispute between Platers and Helpers)	97		19-Jun	05-Jul	For payment for time lost owing to absence of platers	Work resumed on promise that grievance would be looked into
Sunderland	1	Drillers	30		29-Sep	05-Oct	Against alleged objectionable foreman	assistant foreman (a driller) appointed
Wallsend	1	Ship-repairers	443	84	25-Apr	03-May	For dismissal of a yard official alleged to have unnecessarily interfered with the men	Official in question instructed not to interfere
West Hartlepool	1	Platers, Rivetters, Caulkers, Cutters, Holders-up, and Helpers	470		10-Dec	07-Jan	To compel certain members of trade union to pay fines for breach of apprentice rules	Men paid the fines

¹⁹⁴ McCord, p 197

¹⁹⁵ Report by the Chief Labour Correspondent on the Strikes and Lockouts of 1900, The Board of Trade, C689, 1901, *ibid*, p33-35

The gradual implementation of more sophisticated machine tools and technology such as pneumatic riveting was grudgingly accepted by the craft unions, as long as they manned the machines, controlled the workflow and decided how many hands were required. The Boilermakers' Society rulebook clearly shows this. Under Rule 43 (Members Acting Contrary to Trade Interests), section 2 stated (*italics indicate changes made between 1896 and 1901*)

*"All riveting machines used in shipbuilding where piecework is done must be worked by a full set of riveters who must be members of our society. Any member working shorthanded, or any member working on such with a non-member shall be fined 5s for each offence. All riveting machines used in boiler shops or bridge yards must be worked by our members at riveter's rates. Caulking, cutting and other machines, whether hydraulic, electrical, or pneumatic, etc., to be worked by our members at recognized rates."*¹⁹⁶

Trade union leaders, especially those in the craft unions such as Robert Knight (Boilermakers), John Burnett (Engineers) and Thomas Burt MP (Northumberland Miners), saw it as their responsibility to provide their organisations with a respectable public face that would evoke sympathy in an otherwise indifferent public.¹⁹⁷ Whilst this approach enabled the craft unions to take their place at the negotiating table alongside the employers, their focus on stability ran the risk of a sclerotic approach

¹⁹⁶ The Times, "The Crisis in British Industry." 21 Nov. 1901, p. 12.

¹⁹⁷ McCord, *ibid*, p 196; and Thomas Cox Meech, 'From mine to ministry: the life and times of Thomas Burt'. [North of England Newspaper], [1908]. Nineteenth Century Collections Online, <https://link.gale.com/apps/doc/OKPQEU380542656/GDCS?u=unn&sid=GDCS&xid=4fbb9bd2>. Accessed 13 May 2020.

setting in. Whilst it was the function of owners and managers to address external factors such as changes in working practices, market dynamics and developing competition, and to bring along the workforce as the necessary adaptations are made, this was made more difficult by the craft unions' focus on stability. It should be noted as well though that a narrow focus on craft unionism can be seen as a valid tactical approach to adopt in a marketplace characterised by regular and severe demand fluctuations. Employers believed that their best approach under these market conditions was to follow a labour intensive model, not least because as other manufacturing enterprises opened a readily accessible pool of craft labour developed who could and would be able to transfer their skills according to demand.¹⁹⁸ This labour intensive model was both a recognition of the power of the craft unions and a pragmatic response, at least in the short term, to the reality of that influence. It will be shown in chapter 3 just how this worked in practice in an example from the Scotia Engine Works in Sunderland. The relationship between Union leaders and their members did change over time, as workers became more willing to act against the advice of their leaders, indicative of unions being forced to respond to the community interests of their members, rather than simply pursuing their own goals. The 1910 Railway Workers' strike in Newcastle is a good example – the *causus belli* being the refusal of a shunter, one Mr Goodhead, to work at the east end of the shunting yard rather than the west. Other shunters walked out, followed by the signalmen, and then the passenger train drivers. Within three days food

¹⁹⁸ Reid, Chapter 7

was rotting in the wholesale markets, and several pits had come to a standstill. The strike spread to Carlisle and York, all the while ignoring their Union, the Amalgamated Society of Railway Servants. Eventually a compromise was reached and Goodhead was reinstated, but not after significant economic damage had been done.¹⁹⁹

Finally in this section it is important to note some data on death rates in the industries under discussion, which point towards some of the reasons why workers, both unionised and non-unionised would have been keen to maximise their work opportunities. The Seventh Annual Report on Trade Unions (1893) provides some sobering statistics:

Picture 2 – Average Age at Death (UK) in Shipbuilding and Metal Trades - 1892

TRADE AND NAME OF UNION.	Total Membership at End of		Number of Members who died during		Average Age at Death.	
	1893.	1892.	1893.	1892.	1893.	1892.
SHIPBUILDING :						
Boilermakers and Iron Ship Builders	38,238	39,000	366	330	46	45½
Associated Shipwrights	13,325	11,937	117	90	50½	48
Total Shipbuilding	51,563	50,937	483	420	46½	45½
Rate of Deaths per 1,000 (Shipbuilding)	—	—	9·37	8·24	—	—
METAL TRADES :						
Amalgamated Engineers	73,526	70,909	226	829	50	49
Steam Engine Makers	6,328	6,100	67	80	47½	48½
Pattern Makers	2,727	2,537	16	15	33½	41½
Associated Blacksmiths	2,317	2,343	24	33	50½	56
Iron Founders	15,050	15,190	193	211	54½	52½
Scottish Iron Moulders	6,345	6,268	73	63	54½	55½
Amalgamated Brassworkers	5,805	—	32	—	48½	—
Total Metal Trades	112,098	103,347	1,331	1,231	50½	50
Rate of Deaths per 1,000 (Metal Trades)	—	—	11·87	11·91	—	—

¹⁹⁹ The Times, "North-Eastern Railway Strike." 20 July 1910, p. 8. The Times Digital Archive, <https://link.gale.com/apps/doc/CS134937332/GDCS?u=unn&sid=GDCS&xid=a61dedc2>. Accessed 7 May 2020; "The North-Eastern Railway Strike." Times, 21 July 1910, p. 9. The Times Digital Archive, <https://link.gale.com/apps/doc/CS151190261/GDCS?u=unn&sid=GDCS&xid=8f93138f>. Accessed 7 May 2020.

Whilst these are UK statistics, they would have been little different in the North East. An average age at death of between 45 and 46 would provide considerable motivation for shipbuilding and engineering workers to maximise their opportunities, and at around 50 the same would be true for metal trades as well.²⁰⁰

Institutional Sclerosis

Olson's idea of institutional sclerosis argues that interest groups seek more to preserve what they have than to seek any greater societal good, and there can be little doubt that the NFLA, the Boilermakers' rejection of labourers and the National Federation of Labour's failure can all be seen in this light. Furthermore, one can claim that those attitudes were driven by the views of the members of those institutions and their perceptions of their best interests.²⁰¹ Further evidence of this thinking can be found in the attitude of the Northumberland Miners Union to the University extension scheme. The scheme, started by Cambridge University in 1873, reached the Northumberland coalfield in early 1880. The scheme was an opportunity to attend a series of lectures on various topics given by academics from Cambridge, London and Durham Universities and held between January and April each year.²⁰² Supported by local ministers, the local MP and by a representative of the Newcastle College of Physical Science, the scheme was promoted around the coalfields by two miners. The colliery owners offered a prize of £50 for the

²⁰⁰ Seventh Annual Report by The Chief Labour Correspondent On Trade Unions (1893) With Statistical Tables C7808, p 244

<https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1895-073281?accountid=12860>

²⁰¹ Mancur Olson. *"The Rise and Decline of Nations"*, New Haven, Yale University Press, 1984.

²⁰² Alan Metcalfe, p 39-40

miner finishing with the highest marks following the lecture series. In addition, the winner would have a month of stay and study at Cambridge University, a prize donated by William Gladstone. However, because this scheme was initiated by management, the Miners Union continually refused to provide any support for it. Whilst a few miners did benefit from the scheme, the indifference of the Union and its members meant that opportunity was forsaken for others.²⁰³ Metcalfe argues this was because there was an instinctive distrust of management initiatives, but just as important could have been a perception that the kind of education being provided was effectively indoctrination.²⁰⁴

Management – Palmer's

For Chandler's argument that lack of management skills held the UK back to be true for North Eastern shipbuilding and engineering industries, one would expect to find little evidence of the sort of management developments and practices outlined by Chandler as being the drivers behind what he considered to be American business superiority, for example building a career within the same firm and pursuing policies of integration, mergers and acquisition.²⁰⁵ But this is not so. Charles Mark Palmer, the owner of an unincorporated business, had sold his interest in the firm in 1865 for just over £700,000 to a group of local investors (although he stayed on as Chairman). Palmer guaranteed the purchasers that annual net profits would be at least £100,000 over the

²⁰³ Alan Metcalfe, p 39-40

²⁰⁴ Sheila Rowbotham, *Travellers in a Strange Country: Responses of Working Class Students to the University Extension Movement - 1873-1910*, History Workshop, Autumn, 1981, No. 12 (Autumn, 1981), p88

²⁰⁵ Chandler, p 132

next five years, a return on investment of 12.5%.²⁰⁶ Between 1865 and 1888, Palmers was funded almost entirely by its ordinary shareholders; with interest payments only being made in the early years of business, whilst the company was paying off Palmer. (See the charts on pages 73/75 for details of the financial performance of the firm during this period).

As early as 1857, Palmers Brothers were employing an ex-General Manager of the Midland Railway, James Allport, as managing director of the Jarrow operations.²⁰⁷ Although Allport moved back to the Midland Railway in 1860, people were employed in Jarrow who later went on to run their own successful businesses. John Thorneycroft was a builder of high-speed warships in Southampton, and John Price and William Denton, both general managers at Jarrow, went on to be Directors of Swan, Hunter. John Price was a key figure in the development of the Jarrow organisation. Recruited as general manager in 1876 at the age of 43, Price had worked in the Navy, in shipbuilding in Hartlepool, and as a surveyor for Lloyds in Liverpool. Price's time with the company (some eighteen years in total, during which time the company launched some 650,000 tons of shipping) coincided with a reduction in the time spent in managing the business by Sir Charles Mark Palmer.²⁰⁸ In 1895, J P Wilson, who had spent the previous seven years managing an associated shipyard in Bilbao, was appointed as Price's successor. Additionally, a

²⁰⁶ Kenneth Warren, *Jarrow – Victorian Industrialisation and afterward*, (Newcastle: Leazes Press, 2013) p 43

²⁰⁷ Kenneth Warren, *ibid* p 77

²⁰⁸ Kenneth Warren, p 80 & A J Arnold "Dependency, Debt and Shipbuilding In 'Palmer's Town'", *Northern History*, 49:1, 99-118, p 102, 2012

'works committee' of three locally based directors met in Jarrow and were in regular touch with the local management. Despite this, in terms of consolidation and mergers, Palmers were left behind by their rivals.

As will be seen below, its UK rivals merged and built integrated operations covering armour, guns, shipping and engines. Palmers by the start of the 20th century were alone in relying on purchasing externally built armour, guns and engines, concerning itself solely with the construction and finishing of ships. It had spent around £150,000 on building its own ordnance factory in the early 1890s, but it did not help them to win any new orders. By the mid 1890s, the ordnance buildings had been absorbed into other engineering functions. Unlike Armstrong's, they were unsuccessful in securing significant overseas orders despite joint bids with the likes of John Brown and Cammell Laird. So, despite being willing and able to undergo a process of Chandlerian management transformation, bringing in outside expertise and ideas, Palmers still had difficulties. The idea that, of itself, being able to adopt new management ideas was a means to success is not shown by the Palmers' example.

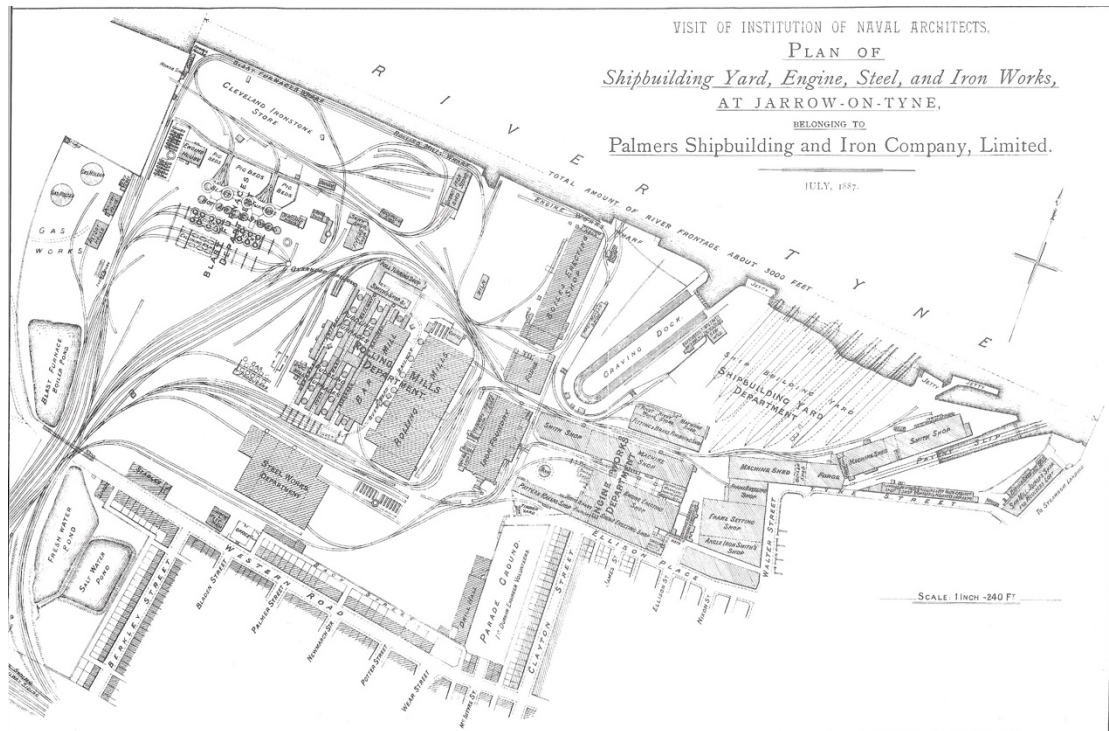
In 1897, Charles McLaren became Chairman, but the firm continued to struggle, although it did recruit some external knowledge, including a highly experienced works manager, A B Gowan, formerly of Glasgow Shipbuilders in Govan. McLaren was replaced in 1910 by Lord Furness, under whose leadership the firm acquired a second shipyard, purchasing a controlling interest in the Hebburn yard from Stephenson's. But Palmers were unable to raise all the cash for the purchase, so only one quarter of the share capital in the new yard was owned by Palmer's.

By June 1913, reported pre-tax profits on a share capital of £698,564 were only £36,262. As *The Times* commented when the results were published, ‘...this profit barely pays the interest on debentures, loans and overdrafts...A company with such resources and facilities, with such a history and reputation, ought to be able to make some sort of return to its shareholders.’²⁰⁹

They had failed to keep up with competitors through their inability to create an integrated production plant that met the needs of their biggest clients. Figure 9 below shows that Palmer’s, at least in physical layout, was attempting to be a vertically integrated business, with the raw materials for shipbuilding in the form of iron and steel being formed and rolled on site before moving through the various shops until it reached the shipbuilding yard. However, they were unable to turn this to long-term advantage because they failed to scale up to meet the increasing demand for the larger metal plates required for bigger ships, rendering the iron and steel facility a burden rather than a benefit.

²⁰⁹ The Times (London, England), ‘*Palmer’s Shipbuilding Recovery.*’ Friday, Sep 19, 1913; pg. 14; Issue 40321.

Picture 3 – Palmer's – Works' Plan 1887 ²¹⁰



Palmers invested in education for their workforce and were pioneers in supporting their workers buying their own houses, but they were slow in other areas of employee care.²¹¹ It took Palmers until 1904 to provide any kind of canteen or eating accommodation on site, Stephenson's having provided a hall for their workers to eat in back in 1861.²¹² They also, like many firms, failed to come to terms with their cost base, especially in the light of German competition. As an example of poor decision making, in 1889 Palmer's deliberately sent in low tenders to win the construction of HMS Resolution and HMS Revenge. In the event

²¹⁰ Image taken from J.F. Clarke, "A Century of Service to Engineering and Shipbuilding – A Centenary History of the North East Coast Institution of Engineers and Shipbuilders 1884-1984", p 42

²¹¹ John Price was able to boast that they trained every one of their own engineers in their Mechanics Institute - Third Report of the Royal Commission on Depression of Trade and Industry, 1886 [C4797] Mr. J Price, Q10,153. p 154

²¹² Kenneth Warren, *Jarrow – Victorian industrialisation and afterwards*, (Newcastle upon Tyne, Leazes Press, 2013) p110.

they won the business, but the tenders were far too low, and as fixed price contracts they lost money on both constructions and made a trading loss in 1890 on the two ships of £11,000.²¹³ In January 1903 the Mayor of Jarrow, Malcolm Dillon wrote to *The Times* quoting from a letter he had received from a local manufacturer in which it was claimed that he (the manufacturer) had offered work to a blacksmith and five strikers employed at Palmer's at rates that were in line with those being paid in Germany.²¹⁴ The offer was 'indignantly' turned down, the implication (not expressed explicitly in the letter) being that they could earn much more at Palmer's. It is clear from this short summary of Palmer's affairs that their transformation from a family concern into a shareholder-led organisation, with a growing divergence between ownership and control and the growing importance of (at least some) functional management, did not of itself bring success. This development did not coincide with increased revenue or higher profits, indicating that it was not just the organisational form that mattered, the ability and approach of the people in that firm mattered at least as much. Palmer's had, counter to the Chandlerian view of British business, experienced changes in their management model and personnel, and had continued to develop their business model. The problem therefore was not the failure to transform, it was the failure to do so at a pace the market required. The shareholder funding model,

²¹³ David Dougan, *The History of North East Shipbuilding*, (London: Routledge, 1968) p119.

²¹⁴ The Times (London, England), 'Letters to the Editor' Saturday, Jan 30, 1904; pg. 8; Issue 37304 <http://find.galegroup.com/ttda/infomark.do?&source=gale&prodId=TTDA&userGroupName=newcit&tabID=T003&docPage=article&searchType=BasicSearchForm&docId=CS134934078&type=multipage&contentSet=LTO&version=1.0>

meaning no external debt, retained value for the shareholders but meant little strategic planning and investment happened, and minimised any external influence that outside investors may have brought. Thus, the short term interests of the institutional owners triumphed over the longer terms needs of the business and its wider stakeholders.

Management – Armstrong’s

At the other major employer on Tyneside, Armstrong’s, a different pattern emerged in senior management. Armstrong’s key managers in the Elswick works were recruited because of their knowledge rather than their experience. Andrew Noble, eventually the General Manager at Elswick, had been Secretary to the Government Ordnance Committee. Armstrong’s recruited him for his knowledge of chemistry, and especially of explosives. Stuart and George Rendel joined from the Admiralty and Harrow School, respectively, and became key in selling and promoting the business overseas.²¹⁵ The management approach was tough. Noble was described as ‘imperious, autocratic, emphatic in his expressions, and sudden, almost volcanic, in his decisions.’²¹⁶ His army background meant that he expected his orders to be carried out without question or hesitation. Noble gradually took over from Lord Armstrong in the day to day running of the business as the century progressed. In 1882, contrary to Chandler’s criticism that British firms failed to consolidate or merge, Armstrong’s merged with Charles Mitchell and Company, providing the

²¹⁵ W.D. Rubinstein, *Elites and the Wealthy in Modern British History*, (London, Palgrave MacMillan, 1987), points out on p82-3 that during the late 19th century between one quarter and one third of Harrow pupils took up careers in business.

²¹⁶ Quoted in Heald, p163. The source of the quote is an unpublished work by A.R. Fairbairn, a former works architect at the Elswick Works.

new firm with manufacturing capability both to the east and west of Newcastle city centre. The combined firm then built a new shipyard in Elswick, notwithstanding tensions between the merging firms about management methods.²¹⁷ The former sites of the two firms continued to operate as distinct businesses, with the new Elswick shipyard being managed as part of the larger Elswick complex under Noble, and Charles Mitchell running the Low Walker site in the east of the city. By the autumn of 1887, Mitchell and his partner Swan together owned just over 13% of the £1,904,000 share capital of the combined firm, a much bigger proportion than that owned by Noble or indeed Lord Armstrong himself.²¹⁸ Armstrong died in 1901, leaving Noble in charge. By this point, mergers between some of the key UK players had created a series of multi-plant rivals (for example, Cammell Laird in Glasgow, Vickers in Barrow and Glasgow).²¹⁹ In Germany, Krupp and Schneider were embarking on similar integrations, as was American Steel and Wire, and the Bethlehem Steel Corporation in the USA.²²⁰ Armstrong's, once unique in being able to produce ordnance, guns and fighting ships, now faced tough competition. At the same time, the ageing Noble was finding the task of co-ordinating the disparate parts of Armstrong Mitchell challenging, particularly as pricing of contracts was the responsibility of a small number of people reporting directly to Noble. Cash flow was a challenge, and as a result the firm amalgamated in 1897 with Whitworth's of

²¹⁷ Kenneth Warren, *The Builders of Elswick*, (Newcastle, Leazes Press, 2013) p 80-81

²¹⁸ Kenneth Warren, p 84

²¹⁹ Henrietta Heald, p 242

²²⁰ Alfred Chandler, p360-361

Manchester, another remote site to control from Elswick, compounding the management challenge. Further difficulties came with the deaths of Armstrong, Mitchell, and George Rendel, leaving a critical shortage of skills on the board and concentrating power within the Noble family. Andrew was chairman, his son Saxon a director since 1895, a second son, John, was involved, and the company secretary, Alfred Cochrane, was married to Andrew Noble's daughter. Completing the group was a close family friend, John Meade Faulkner, who had been tutor to the Noble children, leaving Lord Stuart Rendel as the only board member left from the early days of Armstrong's. In 1910, Lord Rendel set up a committee to look at remuneration for all officers earning over £1000pa, which quickly uncovered that for years Andrew Noble had been taking one salary for running the Elswick works and other salaries for the shipyards, as well as the Manchester and Italian operations. Rendel calculated that in 1908 alone the five executive directors had taken the equivalent of one-fifth of net earnings before depreciation; after depreciation this percentage would have doubled.²²¹ In July 1911, Noble resigned as head of the Elswick operation, and in November he was voted a pension of £6000pa, continuing as Chairman until his death in 1915. New directors, both executive and non-executive, were appointed to the board that took the company forward.²²² This is indicative of a business being managed in the interests of a small group of senior

²²¹ R.J. Irving, *New Industries for Old? Some investment decisions of Sir W.G. Armstrong, Whitworth & Co. Ltd 1900-1914*, p162-163.

²²² This material comes from R.J. Irving, p160-165, and from Kenneth Warren, *The builders of Elswick: partners, managers and working men 1847 – 1927*, (Newcastle: Leazes Press, 2013)

managers, an institution that was focussed on short term and tactical actions, rather than taking a strategic view. It took several years to resolve the issue, and the issue was running at a period of significant business opportunity with the Anglo-German Dreadnought naval race.²²³ The revenues generated by the Royal Naval contracts can be seen as masking other challenges, including diversification (see below for Armstrong's move into car manufacture), indicating that the long term sclerotic effect was being driven from within, determined by the choices management were making, rather than being inflicted externally.

The 1890s through to the start of WW1 had seen Armstrong's turn into a (near) family monopoly under the control of the Nobles, very similar in structure to many of the large scale corporations in the United States. This period coincided with increasing competition at home and abroad, as well as increasing difficulty in reaching decisions. In 1904, the company started to build cars at Elswick, and although they were a success the board did not have the long term vision to fully back the developments required and preferred to allocate factory space to existing manufacturing processes rather than cars, thus losing out on one of the main growth industries of the early 20th century. This can be described as a failure of entrepreneurship, or as a practical choice to focus on the short term profitability to be gained from armaments and naval shipbuilding. As Irving has shown, the return on capital employed in the Ordnance Works, Elswick Shipyard, Openshaw Works and the Elswick Steelworks between

²²³ Between 1900 and 1915 Armstrong's built and launched 27 ships for the Royal Navy, of which 5 were Dreadnought Class, the biggest capital ships of the time.

June 1902 and December 1912 varied from a low of 10.98% (1908) to a high of 32.86 (1905), and at an average of 22.16%.²²⁴ This contrasted with a maximum ROCE of 10.08% (1910), and four years of losses in the Motor Car Department.²²⁵ Either way, it was a short term choice to focus on immediate returns, albeit a choice that was taken in the context of government pressure to prepare for conflict. It was the failure to invest and develop other lines of business which was by any stretch a management failure, especially when compared to Vickers and their subsidiary, Wolseley.²²⁶ The board also spent several years vacillating over whether or not they should manufacture their own marine engines. They discussed proposals for marine engine making with Hawthorn Leslie for over five years, ultimately pulling out because they could not choose between three options put to them by Hawthorn's.²²⁷

This inability or unwillingness to make decisions was not the result of restrictions on capital availability, or investors preferring to invest abroad rather than in the United Kingdom. Both Palmer's and Armstrong's had access to capital, either through the issue of share capital or from the banks. An examination of Palmer's Reports and Accounts between 1865 and 1893 uncovers the fact that during this period their capital and liabilities only contained issued shares, liabilities (bills payable and sundry creditors) and reserve funds. There are no loans, so the company was able to raise their working capital through

²²⁴ R.J. Irving, p 160

²²⁵ R.J. Irving, p 164

²²⁶ Wolseley also made losses and the occasional profit in the period up to 1912 (R.J. Irving p 165). The brand eventually lapsed during the debacle of British Leyland in 1975

²²⁷ Kenneth Warren, p140

shares and income only.²²⁸ The number of joint stock companies other than railways and utilities multiplied tenfold between 1860 and 1910, with the long-term shares of domestic non railway concerns rising to 19% of all outstanding securities in Britain by 1913.²²⁹ For engineering and shipbuilding, the capital tied up in machinery and equipment, as well as the land necessary to build large ships and locomotives, meant that cash flow was critical, especially for less well integrated businesses such as Palmer's which depended on external suppliers for engines, fittings and much else. In this situation it is easier to empathise with Rubinstein's thesis of a transfer of resources away from industry into finance, as tying capital up in machinery, land and equipment was never going to be as profitable as investing it in, for example, bonds and shares in Empire trading firms.²³⁰ Palmers paid no dividend at all on their ordinary shares between 1890/91 and 1896/97, whilst Armstrong Mitchell paid an average of 11.12% over the same period.²³¹ As can be seen in figure 10 below there was a distinct difference in profitability between the two biggest engineering and shipbuilding firms, so it is unlikely that there is a single explanation.²³² Clearly, Armstrong's profit performance over this period

²²⁸ Palmer's Reports and Accounts 1865-1893, Manuscripts/MS Vickers Doc 1124, Cambridge University Library. In the EGM report of 6th July 1871, William Newmarch, standing in as Chairman, said "This company, therefore, as a manufacturing company, today stands in a somewhat peculiar and enviable position, namely, that we have no borrowed money at all." (Report, p15)

²²⁹ Michael Dintenfass, p 42

²³⁰ W.D. Rubinstein, *Culture, Capitalism and Decline* (London: Routledge, 1993), & *Elites and the Wealthy in Modern British History*, (London: Palgrave MacMillan, 1987)

²³¹ In 1900 both firms reported a profit and paid a dividend, news that was welcomed in the local press: Newcastle Courant [1803], "The General Election And The Issue." 22 Sept. 1900. British Library Newspapers, <https://link.gale.com/apps/doc/Y3206563384/BNCN?u=unn&sid=BNCN&xid=1e827fd2>. Accessed 8 Oct. 2020.

²³² Data gathered from various sources

was more consistent and showed steady growth in line with an expanding business and was achieved during a period (see figure 11) where GDP per capita was either declining or flatlining. As both firms were competing in the same marketplace, any attempt to explain the differences has to look at a broader range of causes, including structure, process, capability and resources. Structurally, both firms have the characteristics of proprietorial capitalism, with extended family control at the top, an extended book of shareholders, and increasing strain between the need of the day-to-day business to be managed contrasting with the large span of control exercised by the directors. This is exemplified by hold that Andrew Noble and his family network retained over the top levels of Armstrong's. In the case of Palmer's, the position was more nuanced, with the challenge being the gap between the strategy pursued by the directors and that by the competition, with Palmer's legacy capability and processes from the original attempt to create an end-to-end, fully integrated business hampering attempts to compete in a fast changing marketplace.

Figure 9 – Palmer's & Armstrong's comparative Profits 1884 to 1891

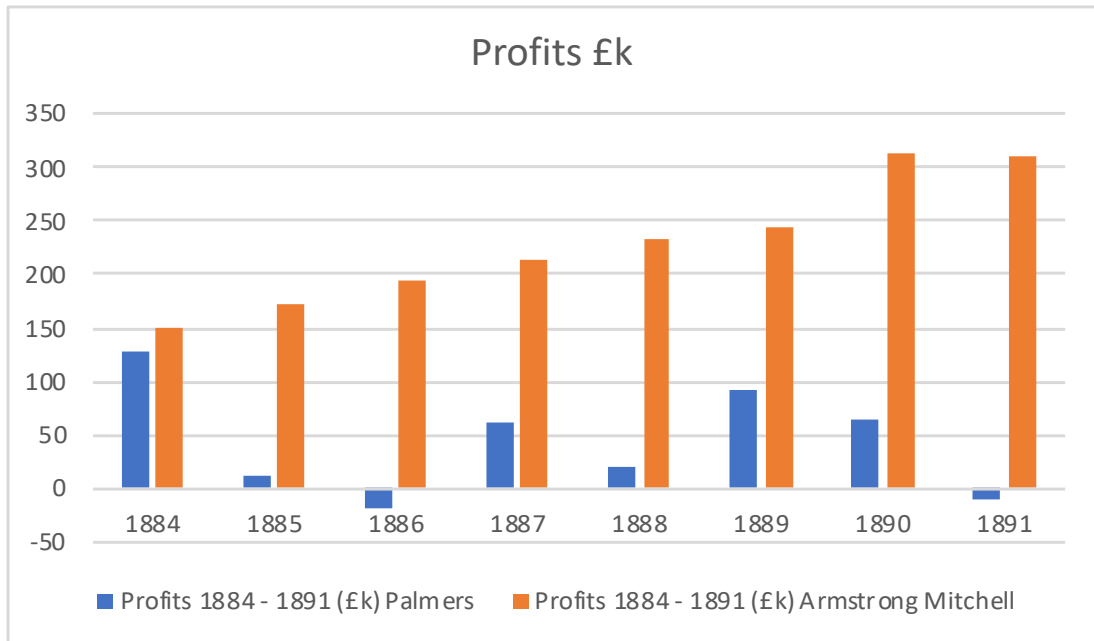
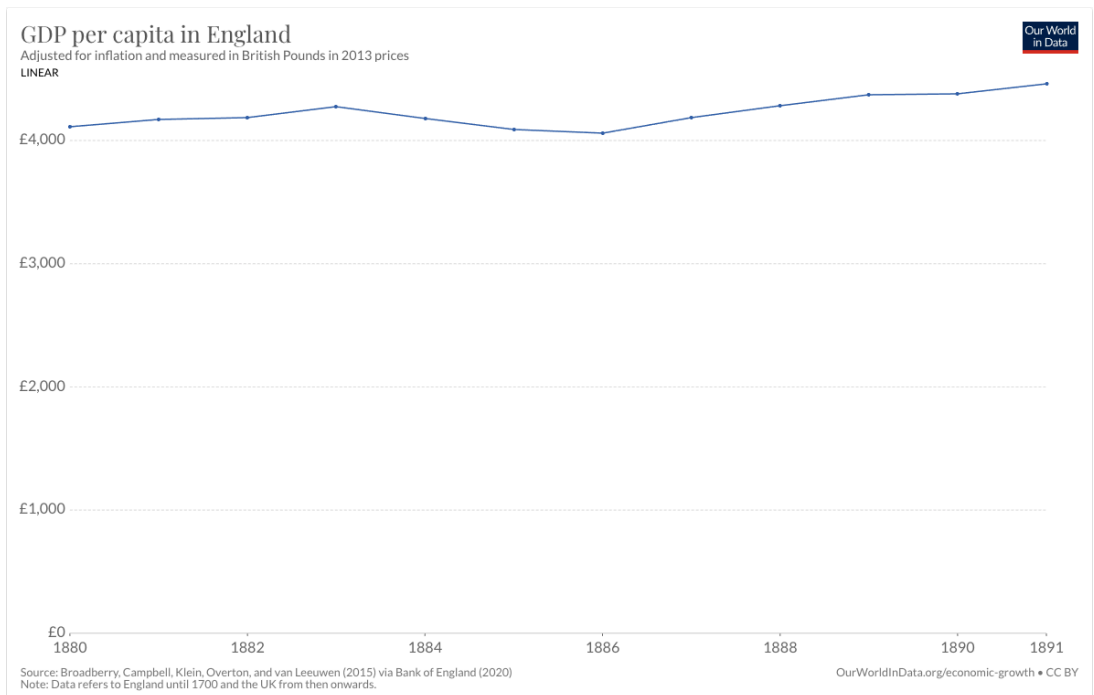


Figure 10 GDP per capita 1880 - 1891²³³



²³³ <https://ourworldindata.org/grapher/gdp-per-capita-in-the-uk-since-1270?time=1880..1891>
 Accessed 05/05/2020

Armstrong's and Palmer's therefore both provide interesting examples of why 'decline' is a much more complex process than suggested by Chandler or some other business historians. Both businesses were started by individuals of remarkable intellect and capacity, they initially recruited the best people, regardless of background, and expanded rapidly. On the other hand, having developed through the leadership of a small cadre of capable individuals they proved incapable of building management structures that could support diversified and dispersed organisations. Armstrong's especially developed the worst habits of a family firm, with nepotism and questionable financial practices rife at the top.²³⁴ On the other hand, Palmer's were slow to spot additional opportunities and were still purchasing marine engines externally long after Armstrong had acquired their own capability. Neither firm succumbed to the 'empire' preference, with Armstrong's major naval exports going to South America and Japan, although both companies depended heavily on orders from the British Navy. Armstrong's did not hesitate to merge or amalgamate with other firms where necessary and were able to access sources of capital within the British banking sector and used that to invest both here and in Italy. Unlike Palmer's, Armstrong's moved from one form of personal organisation to another, with Lord Armstrong being replaced by his deputy, Sir Andrew Noble. Of the two companies, however, Armstrong's was by far the more profitable. It is therefore not clear that the organisational model was inherently wrong in either case; it was more

²³⁴ R.J. Irving, p160-165 for an exposition on some of these practices

likely that long term decline was brought about by a failure of both firms to invest in the newer opportunities such as cars whilst at the same time pursuing the short term attractions of the existing core business. The critical organisational difference was the slow speed at which Palmer's realised that their vertically integrated business model of both manufacturing the raw material for their ships, as well as building them, acted as a brake on their ability to innovate. Armstrong's strategy of buying the capability rather than building it from scratch proved the more effective and the more consistently profitable.

The ability to raise money locally (not just geographically but from within a work milieu), rather than having to work with external funders who may have required different governance structures, meant that opportunities for best practice sharing that may have been provided by experienced external investors were missed. Clarke Chapman's initial share structure in 1893 had been that three owners, Captain Chapman, John Furneaux, and Henry Chapman, were granted 6250, 1750, and 1000 ordinary shares, respectively, with Captain Chapman also receiving 2000 preference shares. The company allowed for a further 2400 preference shares at £10 each paying 6% interest and it took long term loans through the issue of debentures of £30,000, taken up by Friends Provident, and £47,000 taken up by Mrs Margaret Clarke, widow of the founder William Clarke, and Thomas Bowden, the Auditor.²³⁵ In March 1901, the board approved the issue of more share capital, with Captain Chapman taking another 1230 shares, John Furneaux 127, and Henry

²³⁵ Tyne and Wear Archives, DS/CC1/1/1 June 17th 1893

Chapman 212.²³⁶ An analysis of the Clarke Chapman share register gives a clear indication of the rest of the shareholders in this Tyneside engineering firm. The May 1901 register shows the following:²³⁷

Figure 11 – Shareholders in Clarke, Chapman May 1901

Profession	Location	Number of Shares
Engineer	Gateshead	9368
Engineer	Gateshead	1927
Engineer	Gateshead	3263
Company Director	Gateshead	919
Foundry Manager	Gateshead	187
Engineer	Whitley Bay	121
Engineer	Enfield	355
Engineer	Gateshead	1067
Merchant	Gosforth	668
Steamship Over Looker	Hendon	38
Engineer	Glasgow	336
Engineer	Tynemouth	100
Engineer	Liverpool	30
Merchant	Tynemouth	59
Consulting Engineer	Oxfordshire	385
Consulting Engineer	Belfast	24
Agent	Sunderland	331
Iron Manufacturer	Newcastle	154
Engineer	Stockport	93
Engineer	Tynemouth	30
Marine Superintendent	Newcastle	129
Engineer	Gateshead	855

²³⁶ Tyne and Wear Archives, DS/CC1/1/1 April 17th 1901

²³⁷ Tyne and Wear Archives, DS CC1/38 Clarke Chapman Share Register

The concentration of shares in the hands of directors therefore seems to have been a deliberate policy to maintain control over the company, whilst the selling of shares to a network of individuals with similar interests and backgrounds not only raised funds but reinforced control.

Wiener's contention that industrialists were culturally isolated fails to stand up in respect of the largest engineering firms in the North East, and most of all Sir William Armstrong.²³⁸ Not only did he host the Prince of Wales at his Cragside country house, but he was also closely associated with the Earl of Ravensworth and the Duke of Northumberland and worked with both on the 1887 Royal Jubilee Exhibition. Indeed, the Vice Presidents of this event extended across every engineering and manufacturing firm in Newcastle as well as aristocratic partners. Sir Charles Mark Palmer was an active Liberal Member of Parliament, and in 1886, in recognition of his services in connection with the settlement of a costly dispute between British ship-owners and the Suez Canal Company (of which he was then a director) he was rewarded with a baronetcy, as Sir Charles Palmer, 1st Baronet of Grinkle Park, Yorkshire. Sir Charles Mitchell had lived for several years in St Petersburg and was awarded the Order of St. Stanislaus by the Tsar for services to the Russian Navy.²³⁹ These were not the lifestyles of the culturally isolated.

The evidence more closely fits the institutional sclerosis thesis. As shown, work-based institutions, whether trades unions or firms,

²³⁸ Martin J Wiener, *English culture and the decline of the industrial spirit, 1850-1980*, (Cambridge: Cambridge University Press, 2004)

²³⁹ Sir Charles Mitchell, Obituary, in the 1895 Proceedings of the Institution of Mechanical Engineers

increasingly showed symptoms of sclerosis as they focussed on the short term demands of retaining control, status, and differentials at the expense of adopting more progressive management and organisational structures, as well as failing to adopt new working practices. So, having built a near monopoly in armour plating, guns, ordnance, and naval vessels, Armstrong's failure to develop management processes in organisation, supply chain, marketing and sales meant they were left behind by competitors in the UK such as Whitworth's, Germany and the USA who took Armstrong's first-mover advantage and developed the integration between armour, guns and vessels into a higher level of organisation. Meanwhile, competitors in Germany were helped by decisions their governments took to support their own industries, for example with low freight rates on homemade materials. Whilst this was happening, Armstrong's failed to exploit new areas such as cars and aeroplanes which would have benefitted from their engineering expertise and construction capacity, but which the board failed to back fully. They were a successful firm that failed to sustain that success because it could not develop and adapt fast enough, institutionally sclerotic and accompanied by a similar mentality in the workforce.

The pursuit of other structures

Another indication of the way in which short termism manifested itself is in what happened to those sectors and firms that looked beyond the employer/employee relationship and pursued different structures and models. There were a number of engineering firms of various sizes (but none in the North East) which implemented profit sharing schemes.

These generally failed, mainly because one side or the other thought that the results were never worth the effort, although it should be noted that Whitworth's in Manchester, with whom Armstrong's were linked and with whom they would eventually merge, had a profit sharing scheme in place as early as 1878.²⁴⁰ Unlike a lot of schemes, theirs was a legally enforceable contractual right, contingent on the participants taking shares in the company.²⁴¹ Generally, workers seemed to have preferred higher wages rather than a share in the business, arguably due to three factors: an ineffective communication process between employer and employee; a lack of understanding on the part of the workers that these schemes inevitably involve the risk of low payment as well as of high; and an overestimation on the part of the employers as to the level of engagement with the business, as opposed to the job, that the employees had.

That the parties to disputes came to utilise formal procedures to arbitrate and work towards agreement in disputes is an indication of the relative weaknesses of both sides; neither side could be sure of enough strength or support to dominate the other, so it made pragmatic sense to work together to a conclusion that both sides could accept. Neither side saw advantage in defeating the other, as the reality was that they were interdependent and therefore mutual survival was in the interests of everyone. But ultimately this led to a situation where choices boiled down to the maintenance of the status quo, whether in terms of which jobs

²⁴⁰ See the Epitome section of the report by Mr D F Schloss for the Board of Trade on Profit Sharing, C 7458, 1894, for a comprehensive list of these schemes and discussions on successes and failures.

²⁴¹ Schloss Report, p137

were done by which craft worker, or what level wages would be at in times of bust as well as in boom. That maintenance of the status quo led inevitably into a situation of stasis, and ultimately therefore into sclerosis.

Summary

At times of rapid industrial and economic change organisational structures, processes and operations need to adapt quickly, as well as anticipating and accommodating future requirements. As Chandler argued with the development of the American Railways, their ability to adapt and to adopt new management personnel and practices such as project management, (emerging out of a military logistical background), and the use of the organisation chart (which developed as an internal best practice), were among the reasons for the railways' successful expansion. As shown above, larger firms such as Palmer's and Armstrong's were prepared to bring in external resources where their knowledge would help the business. But this did not of itself reduce the tight family and near family control of these firms. The introduction of death duties in 1894 meant that an external valuation of a partnership was required when one partner died. These changes encouraged a large number of partnerships to convert to a limited liability and joint stock structure that allowed the company's value to be held by multiple family members.²⁴² This led to several things – the development of new firms led by managers who had worked in the bigger firms (John Price who

²⁴² Michael Moss, *Accounting Records* in Alison Turton (ed) *Managing Business Archives*, (Oxford: Butterworth-Heinemann Ltd, 1991) p152.

went from Palmers and moved into Swan Hunter). Secondly it stifled management practice because of the requirement to satisfy the short term demands of shareholders (Palmer's) or senior managers (Armstrong's). Clustering theory supposes that the sharing of information (agglomeration benefits) should result from the proximity of similar industries and management practices ought to be one of those benefits. In his centenary history of the North East Coast Institution of Engineers and Shipbuilders, J F Clarke reviewed the minutes of the Institution's meetings and concluded that in the first 40 years of its being only two papers on management techniques and topics were presented to the members.²⁴³ The end of the nineteenth century saw a small increase, coinciding with the emergence of Taylorism or 'scientific management'. Tom Westgarth presented a paper in 1899 on "Work's Organisations" and W.E. Cowens one on "Shop and General Establishment Charges in Engineering Works". It was not until October 1916, when under a very different economic environment, three papers on 'Works Organisation' were given, with 125 members returning the following evening to discuss

²⁴³ J.F. Clarke, *A Century of Service to Engineering and Shipbuilding – A Centenary History of the North East Coast Institution of Engineers and Shipbuilders 1884-1984*, (Newcastle, North East Coast Institution of Engineers and Shipbuilders, 1984) p 77. The Institution was founded following a letter challenging the lack of such a body in the North East was published in the Newcastle Daily Journal in March 1884. In September of that year eight men met in Grey Street, Newcastle, and the process of establishing the institution began. Most pertinent here though is to note that this group were from a number of different yards (Palmer's, Hawthorn's, Wallsend Slipway, Edwards) and all were in their mid-twenties and were chief draughtsmen or managers. To this group the idea of sharing and exchanging knowledge was common sense. The Objectives of the Institution (as of May 8th 1888) stated that it was for 'The Advancement of the science and practice of Engineering and Shipbuilding, and the interchange amongst its members, by means of meetings for the reading and discussion of papers relating thereto and placing on record its transactions'.

what they had heard the previous evening. So not even networking and clustering were enough to facilitate a broader approach to management.

As has been shown above, the role of the family, both founders and of their partners, was critical in building the success of Armstrong's and Palmer's. But it also acted as a brake on innovation, as maintenance of control became a key driver for the leaders. Andrew Noble's desire to manage every aspect of Armstrong's was ultimately as much about fighting his loss of control (which was inevitable the bigger the firm became) as it was about remuneration. Companies were focussed on what their shareholders, managers and owners saw as being in their interests, and whilst this is the approach of the rational actor, the result was to constrain the ability of these institutions to adopt structures and processes that would have enabled them to continue developing. The sclerotic effect was not therefore a result of the institutions themselves; it was a result of the choices the leaders and owners of those institutions made.

The similar reluctance of the craft unions to move beyond their comfort zone of controlling the supply of skilled labour using apprenticeships, and their reluctance to acknowledge the importance of unskilled labour representation contributed just as much to the steady sclerosis developing unseen in the arteries of North Eastern engineering and shipbuilding. The focus on the primacy of employment for their members, often at the expense of other workers, and the determination to keep differentials as well as demarcation lines even as the nature of the work changed meant that maintaining the status quo became the primary

goal for the craft unions. As shown above with the Boilermaker's rule book, this approach was entrenched in the culture of work and maintaining it became almost an end in itself. At first union leadership and members were generally aligned on the goals and the means to achieve them, but by 1910 the situation had changed, with union leaders less able to influence their members, as discussed earlier on page 91 with the Newcastle Railway strike, and often remote from the local issues that led to disputes, another indication of sclerosis developing from within the members, not the institutions. The political ramifications of this will be discussed in chapter 5.

Whilst entirely rational when considered within the narrow horizon of the immediate present, the focus on maintaining control of employment, machines and the supply of skilled labour singularly failed to adapt to changing circumstances, and ultimately failed to protect their members' jobs in the long term. So as with the firms who employed the craftsmen, the sclerosis was a result of the priorities and choices that the members of the employee's representative institutions made, not the institutions themselves.

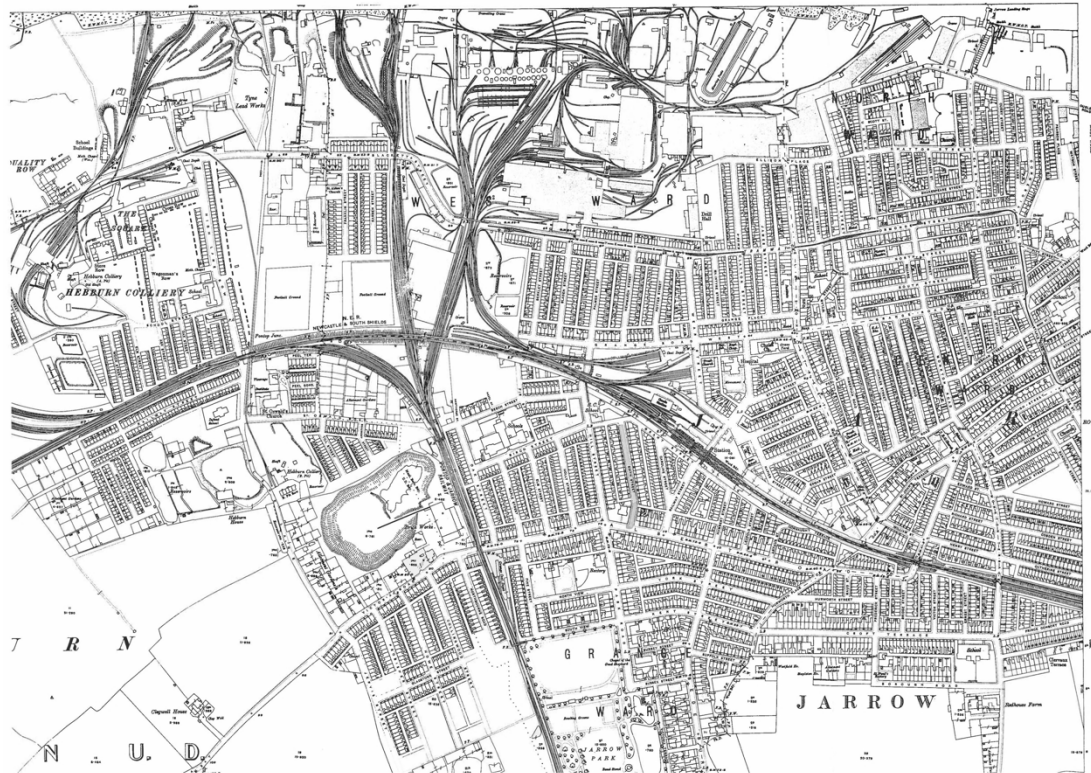
Day to day relationships between management and workers were usually played out through intermediary institutions and functions, whether foremen, trades union officials, Trade Boards, or employer's associations. Their role was to represent the interests of the communities from which they gained their legitimacy, not to act as independent bodies. Their point of reference and guide therefore was the community from which they sprang, and it was they who shaped the decisions these

institutions made. As discussed above conciliation boards were a growing feature of industrial relations towards the end of the century and were designed as a forum for dispute resolution before either side moved into entrenched positions of strike or lockout. They were a recognition on one level that both sides were dependent on each other and needed a vehicle to, where possible, minimise disruption. But on another level, they were also an acknowledgment that the status quo was easier to manage than any process of change, thus formalising the sclerosis. The failure to successfully manage the introduction of profit sharing or other types of bonus scheme are indicative of failure on both sides to grasp opportunities to build a mutually beneficial model. The preference of the craft unions for the immediate reality of piece work and other standard wage structures reflects their role as unofficial labour supply managers, which, combined with their control of the apprenticeship system continued to place value on job retention at the cost of job expansion. Further pressure came from clustering – both industrial and social. The proximity of ship building, ship repairing, and engineering shops along the Tyne, Tees, and Wear provided agglomeration benefits in the form of flexible resourcing (see chapter 3 for detailed examples), but in doing so it reinforced the ability of the craft unions to maintain their control over the supply of labour, compounding the sclerotic effect. Socially a similar effect is evident. Both Palmer's and Armstrong's were involved in providing housing close to their plants (see maps 4 and 5 below) albeit with different business models (see chapter 6 on Social Construction for more details).

Map 4 - Ordnance Survey Map of Elswick, Newcastle upon Tyne 1919



Map 5 - Ordnance Survey Map of Jarrow 1917



This proximity to work inevitably led to some clustering effects as labourers tended to live closer to the works than the craft workers, not least because the accommodation was cheaper. This clustering continued even as the development of public transport meant that better off workers could live further away from their work. Chapter 6 will provide evidence of this looking at craft workers at the St Peter's Basin works of R.W. Hawthorn and the way in which they clustered together even when living at some distance from the works themselves.

It can be seen therefore that the desire of craft workers to maintain employment and of managers / owners to retain control were both factors that contributed to institutional sclerosis. The ability of firms to raise capital locally rather than having to submit to the influence of shareholders and funders outside the region whilst attractive in the short

term meant that insufficient focus was placed on best practice and understanding wider marketplace developments. This was compounded by the clustering impact of businesses locating in proximity to each other and of workers living close to their work and to each other. At the same time the geographic constraints and relative remoteness of the region meant that external influences were not as extensive as they might have been, so the networks and institutions through which communities communicated tended to reinforce a rigid world view, limiting the scope for new ways of working and encouraging a focus on the short term. Thus, the sclerotic effect took hold. That this happened in this way in the North East indicates that the particular circumstances of the region and especially the agency exhibited by the players was a key driver in the arc of growth and decline. Geography whilst an important factor was not the major factor. Recent work on clusters has shown that they are not always geographically constrained. Barnes and Newton's work on regional banking clusters showed that clustering can be both geographically dispersed and also differentiated by the differing requirements of their local business clients.²⁴⁴

²⁴⁴ Victoria Barnes and Lucy Newton, *The City of financing regions and industrial clusters in the nineteenth century* in *Industrial clusters – knowledge, innovation systems and sustainability in the UK*; J F Wilson, C Corker, J Lane (Eds) Routledge 2023, p 220-240

Chapter 3: The Scotia Works, Sunderland, and R.W. Hawthorn, Newcastle - Where Work and Life Intersect

I'm not a wealthy man, but I've hit upon a plan
That will render me as happy as a King
And if you will allow me I'll tell it to you now
For time you know is always on the wing
Work boys work and be contented
As long as you've enough to buy a meal
The man you may rely, will be wealthy by and bye
If he'll only put his shoulder to the wheel.
Chorus: *So Work boys work and be contented*
As long as you've enough to buy a meal
The man you may rely, will be wealthy by and bye
If he'll only put his shoulder to the wheel.

Written, composed and performed by Harry Clifton (1832-1872)

To examine ways in which communities created the conditions under which institutions reflected their needs and expectations of work, it is useful to look in closer detail at the workers and the work they did. It is important as well to look at their communities, including neighbourhoods, social, religious and political connections, as they all helped to shape the identities of these workers and their families. This chapter uses a couple of case studies to illustrate some of the processes at work. It considers the relationship between urban and industrial development and the ways that shaped where people lived and worked, and how this affected their sense of community. Brown and Brennan's studies of the shipbuilding community in Wallsend in the 1960s argued that the shared experience of building ships involved workers in deeper relationships than just their employment contract. It promoted a sense of shared danger with the tough physical conditions and ties of friendship at work that extended

outside the workplace, creating 'a close solidaristic community'.²⁴⁵ Such processes of community formation applied in other industries, notably mining, heavy engineering and associated trades across the North Eastern economy. Tönnies, writing in 1887, argued that there were two models of civil society: 'Gemeinschaft', typical of the medieval crafts-based society, characterised by harmony and familial relationships, common evils and common friends, held together by a common language; and 'Gesellschaft', typical of the production-line oriented society at the time of his writing, the North East falling into this latter category.²⁴⁶ Tönnies thus offers a way of differentiating between community and society. In 'community' social ties, roles, values and beliefs are based on personal interactions (social clubs, pubs, sports teams), whereas in 'society' these roles, values and beliefs are to be found in more formal and impersonal institutions such as church, chapel, or political parties.

Others have noted the relationship between the shared attitudes, values and interests of work groups and the ways in which they perceive their work. Salaman argues that workers value their work when it offers them the opportunity to employ skills, knowledge and techniques that they themselves prize, and this leads them to self-define as a certain kind

²⁴⁵ R Brown and T Brennan, '*Social Relations and Social Perspectives amongst Shipbuilding Workers—A Preliminary Statement: Part One*' *Sociology*, Volume 4, 1970, pp71-84 & pp 197-211.

²⁴⁶ Ferdinand Tönnies, '*Community and Civil Society*'; (first published in 1887) Edited by José Harris; Translated by José Harris And Margaret Hollis.
<https://www.dawsonera.com/abstract/9780511303319>

of person.²⁴⁷ Engagement with work implies a relationship between work and the society in which it takes place, because when meaning is given to that work by others, workers can consider their participation in that work as an important and meaningful part of their identity and therefore their position in society. This relationship between work and society also serves as a mechanism whereby values that protect the interests of an occupational group are maintained within that group.²⁴⁸ This will be an important idea when looking at the roles of trades unions, both craft and labour, and in particular the relationships between them. The process of apprenticeship can, for example, be seen as a means of tightly controlling the supply of labour, and as a means of controlling the groups and individuals who were able to access those roles, so it can be seen as both an economic and a social process.

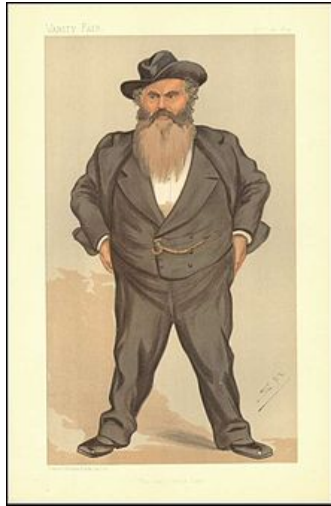
Case Study One - The Scotia Engine Works, Sunderland

In the mid 19th century, the shipbuilding yard of Carr, Fowles & Co was located in Sunderland near the mouth of the Wear. In 1886/7 these works were taken over by William Allan and reopened as the Scotia Engine Works. Allan also had interests in a shipping line and became Liberal MP for Gateshead between 1893 and 1903.²⁴⁹

²⁴⁷ Graeme Salaman, *Community and occupation: an exploration of work-leisure relationships*, (Cambridge: Cambridge University Press, 1974) p118.

²⁴⁸ Salaman, *ibid*, p122.

²⁴⁹ https://www.gracesguide.co.uk/William_Allan



William Allen, "The Gateshead Giant". Caricature by [Spy](#) published in [Vanity Fair](#) in 1893.²⁵⁰

In 1900 the company was bought by Sir Christopher Furness and merged with two other marine engine builders, Thomas Richardson & Sons of Hartlepool and Sir Christopher Furness, Westgarth & Co. of Middlesbrough to form Richardson's Westgarth & Co. Ltd. Richardson & Sons had been founded in 1840 at Castle Eden, and in 1847 the firm moved to Hartlepool. Initially, they built steam locomotives and from 1854 they developed a strong product line in marine engines and boilers, of which over 1,100 were built. Between 1890 and 1914 their engines were installed in many North East built ships, including cargo vessels such as the 'Victorian Transport'.²⁵¹ Like several other firms, the Scotia works built triple expansion steam engines.²⁵² In 1893, for example, they built eleven of these engines valued in total at over £76,000, and in 1913 twelve of these engines at a total value of £143,000. The Scotia Works declined in

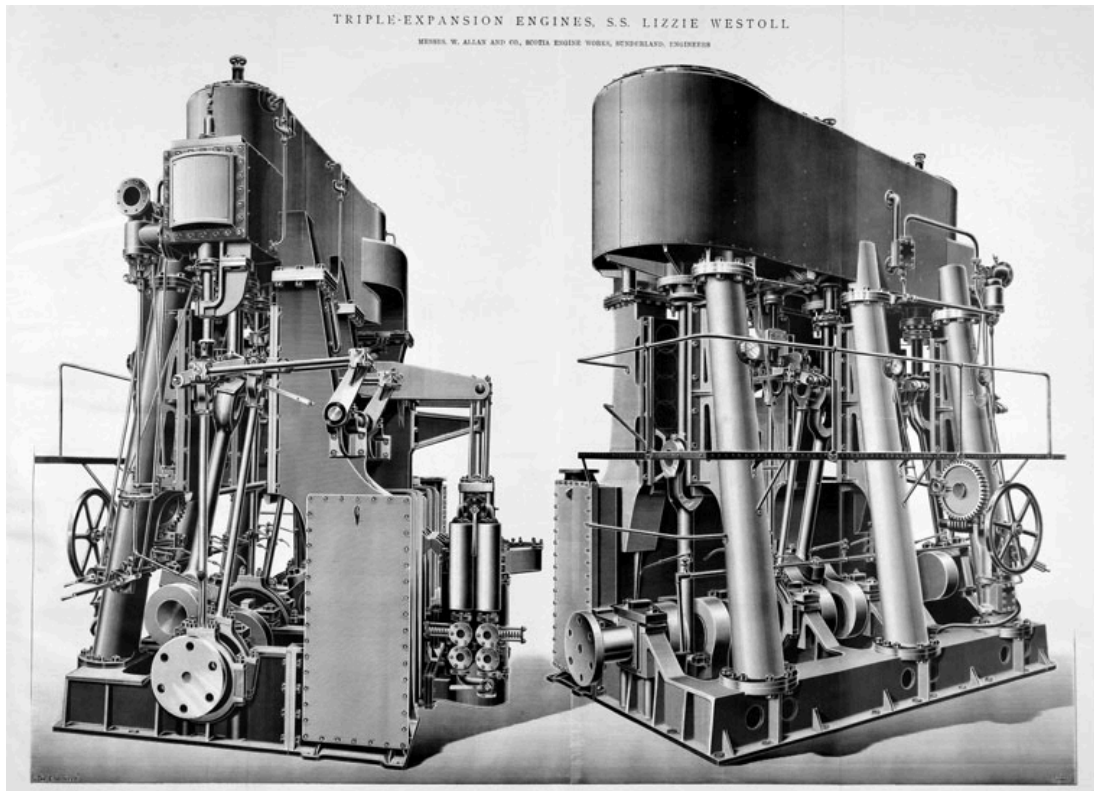
²⁵⁰ <https://doi.org/10.1093/ref:odnb/30381> (Dictionary of National Biography)

²⁵¹ <http://www.tynebuiltships.co.uk/V-Ships/victoriantransport1913.html>

²⁵² A triple-expansion engine is one that expands the steam in three stages, meaning that it has cylinders operating at three different pressures. The first successful commercial use was an engine built at Govan in Scotland by Alexander C. Kirk for the SS Aberdeen in 1881.

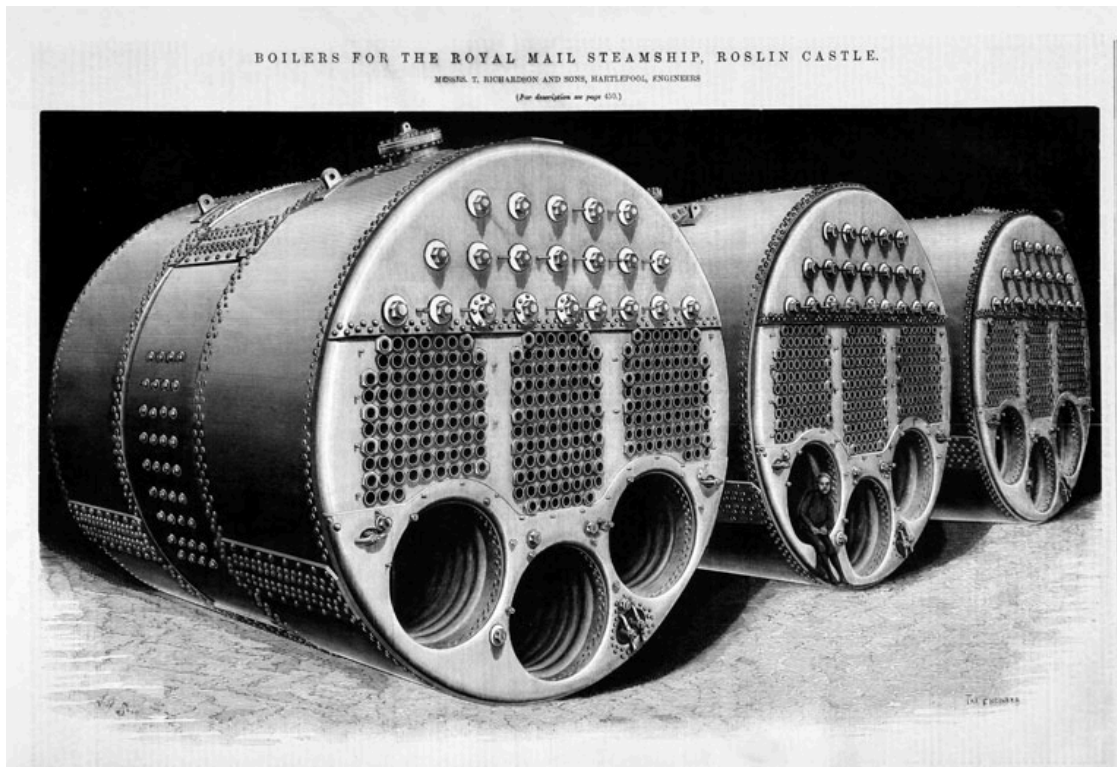
the 1920s in line with the broader sector and the works ceased producing new marine engines in 1929.²⁵³

Picture 4 - Triple Expansion Engine as installed on the SS Lizzie Westoll built in Sunderland in 1895

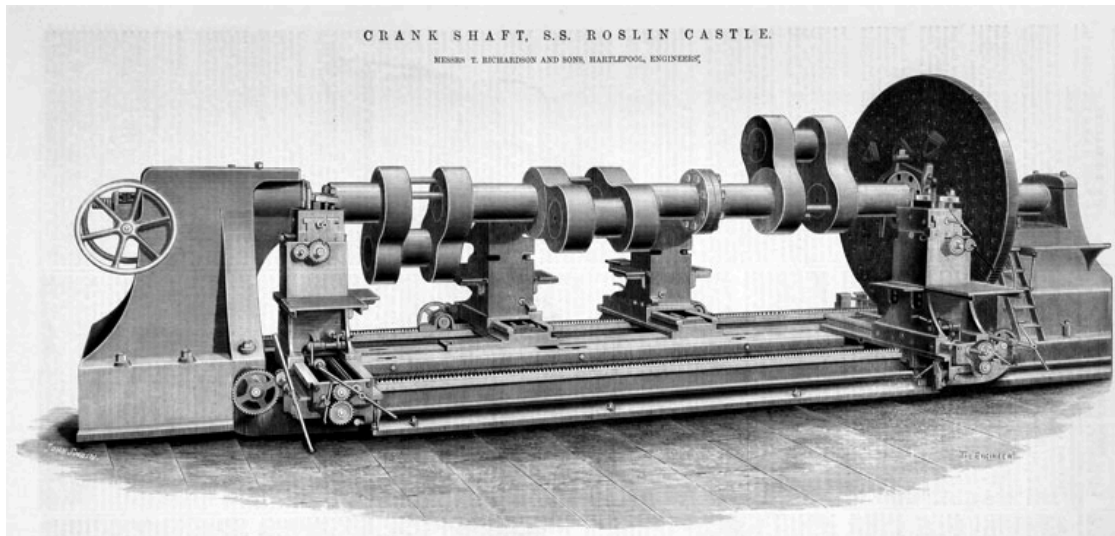


²⁵³ https://www.gracesguide.co.uk/William_Allan_and_Co

Picture 5 - Boilers for a Triple Expansion Engine for the SS Roslin Castle, built in 1883 built as DUNOTTAR CASTLE. In 1888 re-engined and lengthened and by 1896 was a mail packet steamer for Castle Mail



Picture 6 - Triple Expansion Engine Crankshaft for Mail Packet Steamer Roslin Castle



As evidenced by these pictures, this was heavy engineering, requiring a range of skilled and unskilled workers.²⁵⁴ These engines often weighed around 130 tonnes, so were very substantial pieces of work. Archival material from these engineering works is often patchy and incomplete, and in a lot of cases without the active involvement of a small number of academics and interested parties what little there was left behind would have been lost as a result of the closure of these works.²⁵⁵ There is an extant example of the working rules at Harland and Woolf in Belfast preserved in the Titanic Hotel in that city (see the picture in chapter 3 appendix 4). There is little in these detailed rules that would have been unfamiliar to shipyard and engineering workers in the North East, showing as it does the length of the working day, the breaks allowed, as well as the strict rules around the payment of wages. The Scotia Works in Sunderland are an exception in terms of the detailed

²⁵⁴ [https://www.gracesguide.co.uk/T. Richardson and Sons](https://www.gracesguide.co.uk/T._Richardson_and_Sons)

²⁵⁵ <https://www.ncl.ac.uk/engineering/about/facilities/marineoffshoresubseatechnology/speciaIcollection/#about>

archival material still extant, leaving behind a comprehensive set of employee records from 1888 to 1934, detailing the number in each employment category at the end of each month. The categories are consistent, albeit with some minor changes over the period, allowing a picture over time to be constructed.²⁵⁶ A contemporaneous order book, together with the employee records, (examples of which are shown below) enable a picture of workload, employment and expenditure to be built, month by month and year by year.²⁵⁷ The employment data might be expected to show that fluctuations in employment were cyclical and in line with broader economic performance. In fact, as will be shown below, these fluctuations appear to have been regular and short term, and it is contended that this is evidence showing that for craft workers at least there was a flexible and pragmatic acceptance by employer and employee that when the production schedule meant that craft was in lower demand, craftsmen were able to deploy their skills in proximate locations such as ship repair yards where demand was more constant. This is clear evidence of the importance of agency and individual decision making, providing clear indications that individual actors were able to have at least some control over where and when they worked. This might contribute towards a better understanding of the cluster lifecycle and the

²⁵⁶ Marine Technology Special Collection, Newcastle University, Catalogue of Company Documents. Revised 13 June 2017. William Allen and Co, Employment Book 1, Total Number of Employees 23rd October 1888 – 16th May 1899, Catalogue number 03001/260; Employment Book 2, Total Number of Employees 23rd May 1899 – 25th September 1917, Catalogue number 03001/261; Employment Book 1, Total Number of Employees 2nd October 1917 – 30th September 1924, Catalogue number 03001/262.

²⁵⁷ Marine Technology Special Collection, *ibid.* William Allen and Co, Contracts Book No 1, Contracts 101 – 288, April 1889 – July 1908, Catalogue Number 03001/118; Contracts Book No 2, Contracts 289 to S2404, January 1909 to September 1929, Catalogue Number 03001/119.

relationship with externalities.²⁵⁸ It brings into question the extent to which models such as Toms and Filatotchev's dynamic determinants of network characteristics can be applied in situations where flexibility seems to be being shown by a number, if not all, members of a cluster, and whether it is the network, the individual actors or the cluster that is the driving force.²⁵⁹ This enabled the craftsmen to maintain employment and wages, and enabled the engine works to have the skills needed when required but not keep them when demand was low. It is also indicative of the potential aggregational benefits of clustering for businesses with similar craft and skill requirements.

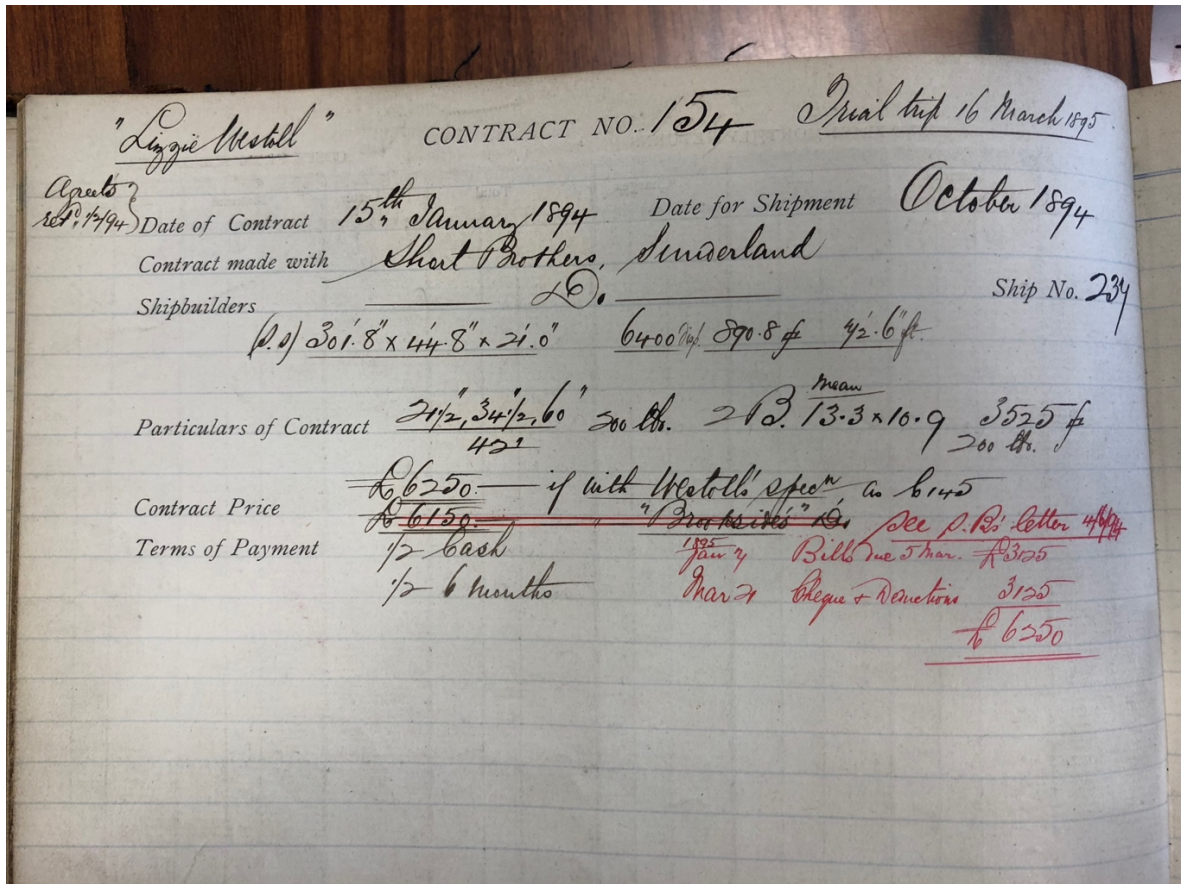
²⁵⁸ D Charles, 'The evolution of business networks and clusters' p 40 in *Industrial Clusters – Knowledge, Innovation Systems and Sustainability in the UK* Eds J F Wilson, C Corker, J Lane, Routledge, London 2023

²⁵⁹ Steve Toms and Igor Filatotchev, 'Networks, corporate governance and the decline of the Lancashire textile industry, 1860-1980' in Wilson and Popp (eds) *ibid*, p68-89

Picture 7 - Scotia Works Employment Book open at the H2 1913 entries

	1913										1913							
	AUGUST					SEPTEMBER					OCTOBER				NOVEMBER			
	8	12	19	26	2	9	16	23	30	6	14	21	28	4	11	18	25	1
ENDING																		
Secretary	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
and Joiners + apprentices	12	15	16	13	13	13	13	14	14	18	18	15	14	14	14	14	18	18
ices	35	36	36	38	36	34	38	45	41	40	41	42	36	34	38	39	39	39
Machine Men	52	57	57	58	59	54	61	61	60	55	50	51	54	55	55	53	56	56
ers, Cranemen, & Slings	30	32	31	31	32	32	31	30	32	32	39	38	34	35	35	35	32	32
Shop	39	43	44	42	29	29	35	43	43	41	43	44	35	36	32	39	34	34
Prentices	15	15	16	15	15	16	16	15	16	16	14	16	16	15	15	15	16	16
ine Men	10	11	11	10	11	11	11	11	11	11	12	12	11	11	12	11	11	11
s, Strikers, Cranemen, & Drillers, &c.	34	34	34	32	26	23	28	38	34	36	35	34	25	29	24	33	31	31
trikers	24	26	26	26	26	26	24	24	24	24	22	24	24	26	26	26	26	26
n, Cartmen, Quay and	4	4	5	5	6	6	6	6	6	6	6	5	5	5	5	5	5	5
Ships	10	10	10	11	9	11	11	11	11	11	5	8	11	11	11	11	11	11
s at Ships	16	12	10	30	41	42	38	19	22	19	11	20	34	36	36	32	28	28
"	1	1	-	4	22	23	14	5	2	2	2	3	21	16	20	14	10	10
"	2	-	-	4	9	9	4	-	-	-	-	6	8	8	8	5	4	4
"	15	12	9	40	65	64	56	14	14	12	10	35	50	50	52	45	43	43
nd Drawing Office	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
me and Storekeepers	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
	380	391	391	442	479	479	473	424	414	403	389	433	455	461	463	458	444	444

Picture 8 - Scotia Works Contract Book for the Lizzie Westoll ²⁶⁰



Having transcribed the data, on analysis it shows considerable variation in employment across a number of the trades. It is not surprising that the number of labourers recorded as employed at the end of each month varied, the very nature of their work fluctuating considerably with the ebb and flow of orders. What is more surprising is the consistency with which some of the more craft-based roles also vary. What cannot be certain from this data alone is the extent to which the variation reflected managerial direction or mutual consent between management and

²⁶⁰ Both documents can be found in the Special Collection at the School of Marine Science and Technology, Newcastle University.

<http://www.ncl.ac.uk/marine/facilities/specialcollection/#searchcollection>.

03001/260 Employment Book 1: Total Weekly Number of Employees, 23 October 1888 - 16 May 1899.

workers, and without names to align to numbers it is not possible to be certain that it is the same people coming, going, and returning. But it seems possible given the consistent cycle of variation shown that it represented a mutually beneficial arrangement between management and labour. Given the objections of both employer and employees to overtime (for employers because of the cost, for employees because of the excess time), a pragmatic approach would have made sense. William Allen was not questioned on this during the Royal Commission, but Captain (as he was then) Andrew Noble from Armstrong's made this comment: "in a brisk time, when trade is active you meet that increased activity rather by drawing fresh men into employment than by making the men already in employment work overtime."²⁶¹

Before considering the Scotia Work's employment records in detail, it is worth noting that from 1st January 1892, the Scotia Works adopted an eight-hour working day, the plan being that in return the workers would take a reduction in wages of between 5 and 10%.²⁶² Contemporary newspaper reports indicate this was a pre-emptive decision taken by William Allen himself, and that the initial period was so successful that the proposed reduction in wages did not need to be implemented.²⁶³ The merits (or otherwise) of the eight-hour day had

²⁶¹ Royal Commission on Labour, 1893, *ibid*, C-6894-VII, Question 25,200.

²⁶² The working day was to begin at 7:30am, finishing at 17:00, with a lunch break of 45 minutes every day except for Fridays, when it was to be a full hour. Saturday working ceased at Noon. This report was of a meeting of the Amalgamated Society of Engineers in Sunderland, called to consider Allan's proposal, and at which Allan himself presented the idea. "THE EIGHT HOURS DAY." *The Daily Gazette for Middlesbrough*, 14 Dec. 1891. British Library Newspapers, <https://link.gale.com/apps/doc/R3212973444/GDCS?u=unn&sid=GDCS&xid=8d412307>. Accessed 5 June 2020.

²⁶³ Northern Echo, "*The Scotia Engine Works Experiment.*" 22 Aug. 1892. British Library

been debated for years prior to Allen’s decision: on one side, employers and their supporters who wanted to have complete flexibility to decide the length of the working day; and on the other side, those who believed that not only could the same amount of work be delivered in eight hours as in nine hours, but that by giving workers an extra hour every day they would be happier and healthier, and therefore more productive.²⁶⁴ As shown in *Figure 13* below, a 53-hour working week was common for members of the Amalgamated Society of Engineers at this point.²⁶⁵

Figure 12 – Districts where 53 hours was a working week

Districts in which 53 hours constitutes a Week's Work	
Name of District	No. of Members
Ashton-under Lyme	816
Birmingham	1754
Blackburn	502
Bolton	1388
Burnley	186
Bury	425
Darwen	103
Darlington	182
Great Grimsby	150
Halifax	597
Hartlepool	556
Hull	1137
Leigh	110
Manchester	5134
Middlesboro'	471
Newcastle	4042
Middleton	46
Newton	176
Oldham	1858
Radcliffe Bridge	89
Sowerby Bridge	192
Stockport	296
Stockton	700
Todmorden	101
York	175
	38.40%
	21256

Newspapers,

<https://link.gale.com/apps/doc/BA3200234532/GDCS?u=unn&sid=GDCS&xid=ef78c303>.

Accessed 5 June 2020.

²⁶⁴ The issue of the Eight Hour Day were extensively discussed in the Royal Commission on Labour, C-6894-VII, (<https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1893-070299?accountid=12860>)

For detailed expositions on these two views see the evidence of Captain Andrew Noble from Armstrong’s (Questions 25,186 to 25,498), and Robert Knight, General Secretary of the Boilermakers and Iron and Steel Shipbuilding Society (Questions 20,676 to 21,154).

²⁶⁵ Royal Commission on Labour, *ibid*, Appendix XLVI, p 490. The numbers were compiled by the ASE. The table total is actually 21186 but is transcribed as per the original.

An additional element in the argument was whether the Eight Hour Day should be agreed firm by firm or should be imposed via legislation.²⁶⁶ Because working hours varied so much, differing across the country as well as between individual firms, those with shorter days were often reluctant to see legislative imposition in case it had an adverse effect on them, and Prime Minister Gladstone disliked the idea of the Government interfering in the relationship between employers and employees.²⁶⁷ Pressure was growing for an eight-hour day, in USA and Europe as well as the UK, so William Allen's move was a timely one.

The Scotia Works proposal was as shown in *Figure 14* below:

²⁶⁶ Alexander Wilkie, General Secretary of the Associated Shipwrights' Society argued it would be beneficial for workers and employers because different district worked different hours, and a standard working week would thus mean more of their people were employed. Royal Commission on Labour, 1893, *ibid*, (Questions 21,493 to 21,499).

John Whittaker of the Amalgamated Society of Engineers argued that it would be better for the workers to obtain shorter hours 'by their own efforts' but would be content to get shorter hours by Act of Parliament as 'it is cheaper and easier to do so by putting the voting paper in the ballot box than to strike...'. Royal Commission on Labour, *ibid*, (Question 22,816). Robert Knight from the Boilermakers' evidence was: "But I gather you wouldn't be in favour of an eight hours day, enforced by legislation? – We do not believe in legislative action in a matter of this kind ... by an eight hours' day made by Parliament you would be bound to dispense with all overtime". Royal Commission on Labour, *ibid*, (Question 20,825)

Sir Frederick Milner, (Unionist), in a debate with Samuel Woods, a Miner's Agent, in Radcliffe argued that "...There was a limit to State interference, and that limit was reached when the State proposed to fix the rate of wages to be paid, or the number of hours during which a man might work." (An undated news cutting found in LSE Selected Pamphlets, 1890
Stable URL: <https://www.jstor.org/stable/60216927>)

²⁶⁷ Gladstone's Midlothian Agent wrote to William Allen to ask for more details of the Scotia eight hour day "as he had not fully grasped the value [of it] to the employer as well as the men". Undated news cutting found in LSE Selected Pamphlets, 1890, *ibid*

Figure 13 – Scotia Works 8 hour day proposal ²⁶⁸

Days	Morning	Dinner	Afternoon	Hours Worked
Monday to Thursday	7.30 to 12.00	12.0 to 12.45	12.45 to 5.0	8.75 * 4 = 35
Friday	7.30 to 12.00	12.0 to 1.0	1.0 to 5.0	8.5
Saturday	7.30 to 12.00			4.5
		Total Ordinary Hours per week		48
This represents a loss of time to the employer of five hours per man per week, or with a 5% reduction in wages, 2.5 hours per man per week				
Nights	First Spell	Supper	Second Spell	Time Worked
Monday to Friday	5.0 to 9.15	9.15 to 9.30	9.30 to 1.15	= 8 hours per night
To be rated at time and quarter, or 10 hours per night, = 50 hours per week				
N.B. Those machines driven by independent engines to be subject to existing rules as to night shift				
Overtime - All overtime to be subject to existing rules				
December 1891				

As noted above, press coverage was favourable, but this was not necessarily the case amongst his fellow employers, as was shown during the 1893 Royal Commission. Mr A. E Seaton, representing the Shipbuilding and Engineering Company, Limited (Hull) and the Iron Trades Employer's Association, was asked whether he was aware of the Scotia initiative and reports of its success. Responding that he was, Seaton said that Mr Allen was a poet, and poets generally had good imaginations to draw upon. Returning the 5% deduction to the workers was the sort of thing that poets did. He implied that the success of the scheme was because Mr Allen had recruited a few 'picked men bent on making the experiment a success'.²⁶⁹

Fluctuations in trade, the irregularity of orders, and the sequential and incremental nature of the marine engine manufacturing process would have meant that it was not always possible to keep boilermakers or other workers constantly busy for fifty three hours (or even forty eight

²⁶⁸ Adapted from Royal Commission on Labour, 1893, *ibid*, C-6894-VII, Appendix XLII, p460

²⁶⁹ Royal Commission on Labour, 1893, *ibid*, C-6894-VII, Questions 25,595 to 25,601.

hours) a week throughout the year. The close control that craft workers demanded over their work as well as the rigid demarcation lines enforced between trades meant that there was little opportunity to deploy resources flexibly.²⁷⁰ Boilermakers were generally paid 'by the piece' when others were paid by the day, meaning that overtime was a structural phenomenon, rather than an exception; until a 'piece' was finished the next phase could not commence, so workflow was effectively controlled by the piece workers. If finishing that 'piece' had to be done by the worker who started it (and it frequently was) there was often little choice but to work overtime in order to complete the job. The eight-hour day was therefore intertwined with the 'piece versus time' debate, and thus it was argued that benefit for the employer only came if the same amount of (or more) work was done in the shorter working day as a result of the workers being more motivated or less tired. Costs for the employer would have been the same whether they paid by the piece or by time. This seems to have been (at least initially) what William Allen and the Scotia Works found. It is worth noting that methods of payment remained complex for a considerable period. In a memorandum of understanding signed by the Wallsend Slipway & Engineering Company Secretary, M Murray, and Thomas Tiesdall, Shop Steward, dated 17th September 1909. It was agreed between the parties that the system of payment for boilermakers 'for contract work' would be

²⁷⁰ Robert Knight of the Boilermakers' Union argued that once a man had started on a piece of work 'he works on until he has completed it' because he could not hand it over to another worker as he would not know how far he (the first worker) had got. Royal Commission on Labour, 1893, C-6894-VII *ibid*, Question 20,683.

a) small contracts – contracts to be completed within ‘one pay’. Contracts extending over one pay would be paid at time and a quarter.

b) large contracts – contracts over one month would be paid at time and a quarter ‘on each pay’, balances paid ‘as near monthly as possible’. No definition of what constituted a ‘pay’ is included in the memo. ²⁷¹

Given the close control over the apprenticeship process that the Boilermakers and other craft unions exercised, there was not a constant supply of skilled workers available to meet peaks in demand; and combined with the workers’ desire for continuity of employment it might have made pragmatic sense to both sides for a flexible approach to be applied in lean as well as in prosperous times. Craft unions in particular aimed to restrict the number of apprentices with the intention of controlling the labour supply.²⁷² These restrictions were not arbitrary, the Boilermakers basing their calculations on a statistical analysis of birth and death rates and concluding that, assuming a five-year apprenticeship and an average working life of 22 years, that one apprentice to 4.7 ‘journeymen’ was appropriate.²⁷³ Other Unions were not quite so precise. The ASE had ‘a standing order’ whereby one apprentice to four journeymen was considered ‘quite sufficient, and where we can we get

²⁷¹ Tyne and Wear Archives DS/WS/87 (3)

²⁷² A ‘journeyman’ was a worker who had successfully completed their apprenticeship. They would be allowed to perform all tasks of their trade as well as supervise apprentices. An apprentice was generally employed to learn the craft whilst earning. At the end of their apprenticeship, they would be certificated and able to become a journeyman. For detailed exposition on the nature of the work the various journeymen craft workers did in shipbuilding and engineering see Alistair Reed, p47-61.

²⁷³ Royal Commission on Labour, 1893, Question 20,881 to 20,883.

three but we decidedly object to an employer getting more'.²⁷⁴ This was explicitly to control the flow of 'journeymen' into work. The ASE argued that too many apprentices restricted the working life of a 'journeyman' to about fifteen years and claimed that railway shops and Government workshops would not take on anyone over the age of 40. There was therefore considerable emphasis from the craft worker / journeyman's perspective to maximise their working opportunities.

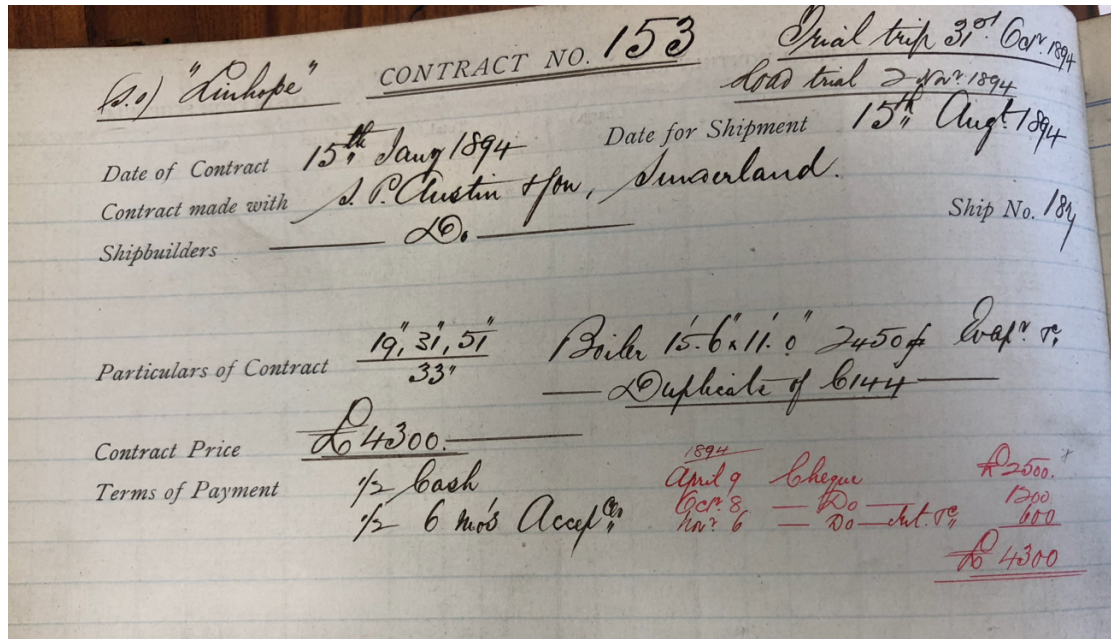
Before examining the details of the employment and contract books it is worth placing the Scotia Works into context within the Sunderland area. Of particular note, map 6 below demonstrates the close clustering of businesses around the Scotia Works, especially the proximity of Palmer's Hill engine works across the river next to the Manor Quay ship repairing works, as well as the Wear Dock Yard adjacent to the Scotia works on the south side of the River Wear and S.P. Austin, shipbuilders.²⁷⁵ The Scotia Works Order book shows that S.P. Austin were customers. Contracts 153 at £4300 and 154 at £4100, in 1894 and 1895, respectively, were for marine engines.²⁷⁶

²⁷⁴ Royal Commission on Labour, 1893, Question 22,762.

²⁷⁵ Map scanned from a reprint of the 1895 Ordnance Survey map, published by Alan Godfrey Maps, 1982, Author's Collection

²⁷⁶ Marine Technology Special Collection, William Allen and Co, Contracts Book No 1

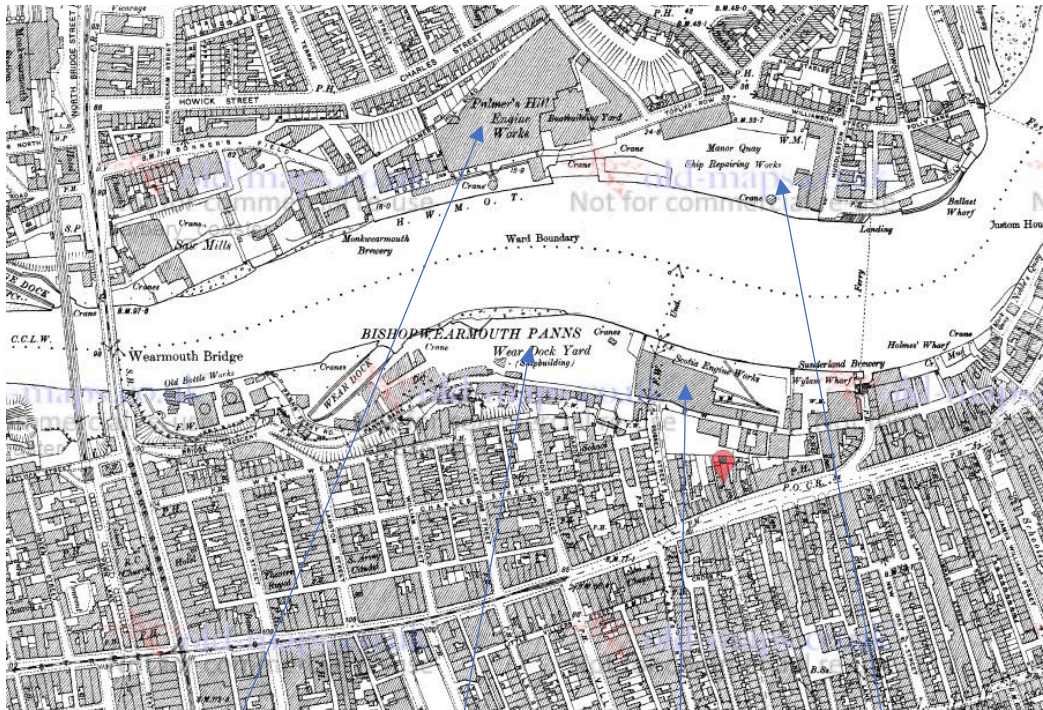
Picture 9 – Scotia Works Contract No. 153



As will be shown in chapter 6, craft workers were willing to travel some distance to their employment, and the development of a rail system and frequent ferries would have facilitated easy movement between work locations. Map 6 below shows there was a ferry across the Wear running from between the Wylam Wharf and the Sunderland Brewery, across to the landing point near the Manor Quay Ship Repair Yard. It also shows the proximity of companies who were not only customers of the Scotia Works but were also potential sources of both employment for Scotia workers and of knowledge transfer. These two factors may well have worked in tandem and included both tacit and implicit knowledge. This is an area for future study including what this knowledge transfer might have contributed to the life cycle of the cluster. ²⁷⁷

²⁷⁷ Corker, Lane and Wilson, 'Critical perspectives on industrial clusters' p 266 in "Industrial Clusters – Knowledge, Innovation Systems and Sustainability in the UK" Eds J F Wilson, C Corker, J Lane, Routledge, London 2023

Map 6 – The Scotia Works and their environs



PALMER'S HILL ENGINE WORKS
North Quay, SUNDERLAND.
JOHN DICKINSON,
MARINE ENGINEER
AND
BOILER BUILDER.
SOLE MANUFACTURERS OF
"DICKINSON'S PATENT CRANK SHAFT."
Approved by Board of Trade, Lloyd's, and Bureau Veritas.
"TELEGRAPHIC ADDRESS—"DEER & OVERLAND."



Palmer's Hill
Engine Works

S.P. AUSTIN & SON LTD
WEAR DOCKYARD — SUNDERLAND.
Shipbuilders,
Ship, Engine
and Boiler
Repairers.

Wear Dock Yard
(S.P. Austin)
Shipbuilding



Scotia Works

Manor Quay
Ship Repair
Yard (an
extension of J L
Thompson's
North Sands
Yard)

Workforce Mobility

While shipyard employers wanted a stable workforce, and employees wanted stable employment, the inherently uneven requirements for labour across the range of vessels being built in each yard meant that it was in labour's interests to be where the work was. At the same time, it was probably in the employer's interests to allow workers to temporarily move to other yards or shops when their work was slack, providing they would return when orders picked up. During periods of peak demand, it was common for yards or shops to offer incentives to workers to leave their current employers and move to their employ. Employers tried to control this through the use of 'character notes' which were supposed to make it impossible for skilled workers to leave until their previous work was finished, but competition for labour meant that these were often honoured more in the breach than in practice.²⁷⁸

The proximity of a ship repair yard (part of J L Thompson & Sons), a ship building yard (part of S.P. Austin & Son), and another engine works (Palmer's Hill Engine Works) to the Scotia Works is clear on map 6. This proximity, indeed, or clustering of similar companies, would have allowed workers to move between sites as opportunities and requirements arose. The skills required were transferable between and within works, boiler making and boiler repair work for example between a manufacturing shop and a repair yard, and sheet metal working whether for construction or repair required the same knowledge and craft, so there

²⁷⁸ Royal Commission on Labour, 1893, *ibid*, Appendix LIV gives an example of a Character Note from Earle's Shipyard in Hull; Appendix LVI gives an example from the Ordnance Department at the Elswick Works.

would have been little difficulty in moving from job to job. The role of the unions and the foremen would have been critical. The craft unions, with their desire to keep as many members employed as possible, often acted as a kind of employment clearing house. There is evidence from the General Manager of Palmer's in Jarrow of a flexible approach to employment by another craft, plumbers. Questioned on where craft workers could be found, he replied that ship plumbing was not regular work, so they 'must have some recourse in the event of work falling off and they would naturally go to house plumbing.' In the event of a large Government contract coming to the works, they would have to recruit plumbers from somewhere, and that would be from house plumbers.²⁷⁹ The foreman was frequently responsible for hiring, firing, and keeping the work flowing through the shop.²⁸⁰ The foreman, usually appointed from within the employed body of workers, was therefore usually a Union member, something that for some Foremen caused a conflict of interest, but that was an entirely rational choice given the benefits available to Union members.²⁸¹ Ship repair work would have been the most likely

²⁷⁹ Royal Commission on Labour, 1893, *ibid*, Q26,453 to 26,456, p421.

²⁸⁰ There is clear evidence of this in the instructions contained in a note in a letter book from the St Peter's Engine Works. The document is a set of detailed instructions as to how a piece of work should be allocated and completed. The writer goes on to suggest that one man makes all the templates and sets required for the three engines. A second man would cut and punch them, with apprentices doing the riveting. The note ends with a comment to the effect that as this is light work there should be no need for more than one helper to each plater, except when 'ripping up' the long sheets of metal. Marine Technology Special Collection, Newcastle University, Catalogue of Company Documents, *ibid*, Letter Book: St Peters Engine Works, M.O.D. "A", 13 January 1900 - 2 May 1911, 998 pages, Catalogue Number 03003/2.

²⁸¹ The Employers sought to split the Foremen from the Unions by setting up the Engineering Foreman's Benefit Society, offering similar benefits to those available from the Unions providing they rescinded their Union membership. *The Times*, "Engineering Foremen's Benefit Society." 6 Nov. 1897, p. 10. The Times Digital Archive, <https://link.gale.com/apps/doc/CS167960934/GDCS?u=unn&sid=GDCS&xid=d8598071>. Accessed 8 Apr. 2020.

sector to benefit from temporary redeployment as this type of work would have been much less susceptible to fluctuations in workload and demand, as repair work would generally be available no matter the state of the economy. The analysis below suggest that this 'flexibility' was endemic across a range of roles. The handwritten Scotia employment records gave a weekly total for each role description, providing a clear picture of change over time. Compiling the data for a particular year, 1899, (see Chart 1 in the appendix), provides visual evidence of the ebb and flow of employment by role. That this was a consistent profile can be seen when we look at the same table for 1913 (see Chart 2 in the appendix). One noticeable change between the two years is the reduction in the number of Foremen, down to six (from seven) despite an increase in the average number employed from 351 in 1899 to 439 in 1913.

The next level of detail can be found by seeing whether these patterns are consistent across a given period, and one way of doing that is to see whether the variations in employment numbers are consistent across each employment group across said period. This can be most simply done by using standard deviation. Standard deviation shows how measurements for a group diverge from the average or expected value. A low standard deviation means that most of the numbers are close to the average, whilst a high standard deviation means that the numbers are more dispersed. Therefore, the bigger the standard deviation the further away from the average for the overall group they are. So, for the period 1889 to 1900 (thus incorporating the change to the 8-hour working day in

early 1892) we can assemble the following table, Figure 14 below. (The accompanying graph can be found in the Appendix):

Figure 14 – Scotia Works - Standard Deviation of role numbers 1889 to 1900

	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900
Managers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Foremen	0.29	0.45	0.00	0.00	0.00	0.24	0.19	0.00	0.47	0.00	0.00	0.00
Drawing Office	0.55	0.58	0.75	0.80	0.45	0.00	0.52	0.50	0.54	0.24	0.39	0.63
Commercial Office	0.50	0.00	0.14	0.00	0.00	0.27	0.00	0.34	0.00	0.00	0.00	0.00
Time and Store Keepers	0.66	0.00	0.14	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
Watchmen and Cartmen	0.49	0.00	0.49	0.00	0.00	0.00	0.00	0.00	0.49	0.00	0.19	0.96
Patternmakers and Joiners	1.49	2.88	2.31	3.52	1.52	2.61	2.07	3.17	3.80	1.75	3.50	3.30
Fitters	12.96	5.17	4.85	4.73	3.74	7.27	6.43	10.12	10.57	5.80	6.84	7.11
Machinists	6.93	3.96	1.06	0.95	0.45	4.46	2.58	2.73	4.47	2.21	3.90	1.36
Apprentices	7.21	5.78	3.28	2.80	1.00	2.98	3.87	2.72	6.78	3.03	4.21	3.22
Plumbers	1.54	0.72	0.73	0.78	0.00	0.24	0.30	1.01	0.80	0.78	0.53	0.00
Boilermakers	5.68	4.59	3.15	3.48	0.55	6.16	3.67	6.75	7.23	3.68	5.17	2.72
Boilermakers Apprentices	1.25	1.90	0.73	1.46	0.84	2.82	1.11	2.14	0.78	1.17	2.36	0.86
Blacksmiths	3.09	1.75	0.99	0.91	0.45	2.76	2.01	3.10	3.53	1.83	1.56	1.90
Labourers	11.63	6.66	6.42	7.99	3.67	11.32	8.96	18.50	14.49	10.27	12.60	10.62
Firemen	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

These tables show the standard deviation across the weekly reports of role numbers. They demonstrate that the number of Managers stayed consistent across the period, as did the firemen, but clearly the labourers were the most likely group to experience significant changes in employment levels, with the next two most likely groups being the fitters and the boilermakers. Significantly, there appears to be little meaningful change between 1891 and the eight-hour working day in 1892, other than in the skilled categories of Pattern Makers and Boilermakers' apprentices. It could be concluded either that the eight-hour working day simply made no difference, or that it encouraged a more stable workforce. In the absence of the relevant year's order book, it is difficult to conclude one way or the other, but the most likely possibility is that the 'softer' benefits of being the first employer to adopt the eight-hour day made the change worthwhile. These would have included reputational improvement and may even have extended to helping Allen to become an MP in an 1893 bye-election. At both ends therefore of the unskilled/craft spectrum,

flexibility, enforced or chosen, was inherent in the employment processes in the Scotia Works.

This finding is reinforced when the Order Book is examined. Taking the order book for 1913 as an example (see Chart 4 in the appendix), there were thirteen engines built during that year. The chart shows the engines, their capacities, and the order, shipment and trial dates, as well as the customer price (cost) and the payment terms. Contract payment terms generally consisted of two or more payments, the last one of which was associated with successful completion of the sea trials. Cash flow management therefore was key as a lot of costs would need to be absorbed before profit was generated. Charts 5 and 6 in the appendix show the material and the labour costs for each order by month.

June, September and November 1913 show the highest labour costs, and March the lowest, coinciding with the employment chart shown earlier on page 138. Labour flexibility clearly was fundamental to the working operations. It is also possible to hypothesise that this flexibility might have come at a cost to the Scotia Works, as profitability appears to be very variable across the orders. This will have been influenced by the amount of bespoke work required, and the price achieved for the contract, also possibly influenced by the costs of bringing workers back, but without more detailed accounts that is difficult to prove. As can be seen in figure 17, when looking at the overall profitability of these orders there is considerable variation, with greater variability in the material costs than in labour, further indicating that control over labour costs was a

key component of business success, as well as a means to keep employment as consistent as possible given variable demand. It is reasonable to say that what is being seen here is rational behaviour by both employers and workers, facilitated by the agglomeration benefits of clustering, and meeting the expectations of the communities involved.

Figure 15 – Scotia Works - sample costs and profits by Contract

Contract Number	Material	Labour	Charges	Total	Profit
334	£6448 4s 3d	£1880 7s 11d	£1074 11s 1d	£9403 3s 3d	£45
335	£6508 18s 1d	£1892 17s 7d	£1082 11s 11d	£9484 7s 7d	(£31 17s 7d)
336	£9185 7s 10d	£2793 9s 1d	£1576 13s 1d	£13555 10s	£13 7s 2d
337	£6714 11s 5d	£2314 19s 11d	£1261 14s 7d	£10291 5s 11d	£12
338	£7691 16s 11d	£2417 6s 1d	£1351 10s 2d	£11460 13s 2d	£14
339	£6669 3s 7d	£2063 13s 2d	£1158 18s 6d	£9891 15s 3d	£597 4s 9d
340	£6758 4s 2d	£2049 3s 11d	£1157 11s 3d	£8864 19s 4d	£644 0s 8d
341	£6812 4s 2d	£1918 15s 5d	£1108 2s 5d	£9839 2s 0d	£498 9s 6d
2101	£7233 16s 1d	£2385 7s 6d	£1315 16s 10d	£10942 10s 5d	£1180 4s 7d
2102	£7295 13s 5d	£2112 17s 4d	£1209 18s 7d	£10618 9s 4d	£1514 5s 8d
2103	£7188 13s 11d	£2258 7s 1d	£1262 15s 6d	£10709 16s 6d	£2090 3s 6d
2104	£3982 13s 11d	£1687 12s 11d	£874 3s 11d	£6544 10s 9d	£75 9s 3d

Case Study Two - R.W. Hawthorn, St Peter's, Newcastle

There is further evidence of the pragmatic relationship between workers and employers in the R. W. Hawthorn letter book.²⁸² There was a working shipyard at St. Peter's (to the east of Newcastle city centre) by the 1750s, owned and run by William Rowe. The St. Peter's yard was sold to the Smith family in 1810, becoming the largest yard on the river during the first half of the century. By the 1860s, the St. Peter's Yard had become less important to the company and in 1871 was sold to R.W. Hawthorn, who developed the site as a marine engineering works, producing triple expansion steam engines. By 1907, the St. Peter's Works

²⁸² Marine Technology Special Collection, Newcastle University, Catalogue of Company Documents, *ibid*, Letter Book: St Peters Engine Works, M.O.D. "A", 13 January 1900 - 2 May 1911, 998 pages, Catalogue Number 03003/2

had converted its production capabilities to meet Royal Navy requirements for steam turbines.

Picture 10 - R W Hawthorn in 1996 (Author's collection)



The St Peter's yard left behind a series of internal memoranda contained in a 'letter book' along with numerous correspondence, both within and without the company. In an undated handwritten note (numbered 300 in the book) a Mr Wheldon wrote a report on 'Parsons of Wallsend Fitters.' He begins by explaining that he had started a man by the name of Dowling 'at our gate' on 13th March 1907 'for blading turbine casings'. We can infer from this that Mr Wheldon was probably a foreman, and this is confirmed when his name appears in other letters. Wheldon says that Dowling 'had been blading' at Parsons Wallsend, and that after a few days he was found to be an excellent workman, willing when asked to work all night. Dowling asked Wheldon whether he was interested in other 'good bladers' as he could recommend some. Wheldon was keen, so he met two men by the name of Soulsby and Flanagan at 2.00pm on Friday 15th March. They had been working at

Parsons, and when asked why they wanted to leave Parsons they replied that work was slackening. Wheldon asked them to give Parsons a week's notice, but they replied they had no need of giving notice and arranged to start at 5 o'clock on Saturday night, 16th March. The note concludes:

“And seeing that Parsons were getting so slack, we considered it would be to our advantage to get some of their best hands who were available, and I asked Soulsby and Flanagan to send any more good men they knew who wanted a change to me for a start.” [This clearly builds on](#) Granovetter's notion (although originally focusing on the USA) that information about employee's moves amongst firms travels between those firms not only because of personal relationships but also because interfirm mobility ensured that workers would be known to other employees in similar firms. ²⁸³ As is shown in Chapter 6 the fact that workers lived in proximity with each other and often travelled to work together increased those information flows.

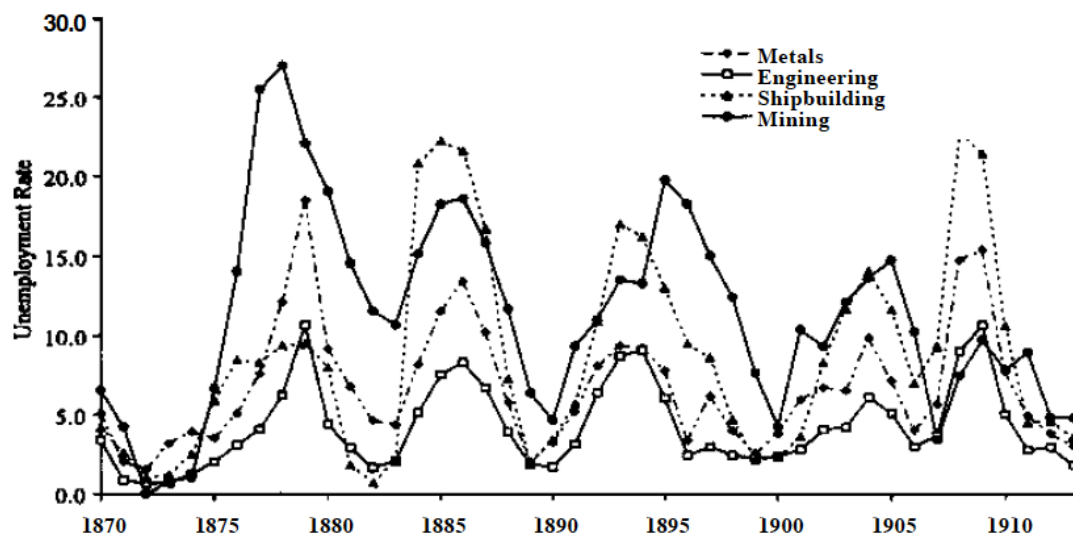
Parsons and R W Hawthorn were less than five miles apart, and both locations would have been reachable by railway with stations on the coast line out to Whitley Bay from Newcastle. As will be shown below in the discussion about railways, this is clear evidence of the advantages of both the clustering of businesses and the clustering of supporting populations, and the ways in which agglomeration benefits worked for both employers and workers.

It can be noted that the period under study also saw the total employed in shipbuilding across the North East increase from 27,556 to

²⁸³ Mark Granovetter, *ibid*, p498

39,593 (1891 and 1901 census figures), and in engineering from 27,376 to 40,954 (1891 and 1901 census figures), so there was no obvious correlation between flexibility and workforce size. (A detailed breakdown of these figures can be found in the Occupations tables appendix 2 of this chapter).²⁸⁴ Across the UK the unemployment rate in engineering and shipbuilding ranged between around 3% to around 9% over the same period:²⁸⁵

Figure 16 – Unemployment rates by Industry 1870 - 1912



This strongly indicates that workforce flexibility was systemic, suited both parties and was not driven solely by external economic pressures. It also supports the contention that clustering of industries was determined by availability as well as other considerations. Maps 7 and 8 below show Sunderland in 1898 and Newcastle in 1916. They clearly

²⁸⁴ Numbers adapted from D. J. Rowe (2013) *The Economy of the North-East in the Nineteenth Century: A Survey with a Bibliography of Works Published Since 1945*, Northern History, 6:1, 117-147, DOI: 10.1179/nhi.1971.6.1.117. See more details in Chapter 3 Appendix 1.

²⁸⁵ G. R. Boyer, & T. J. Hatton, (2002). "New estimates of British unemployment, 1870-1913" [Electronic version]. *Journal of Economic History* 62(3), 643-675, p658

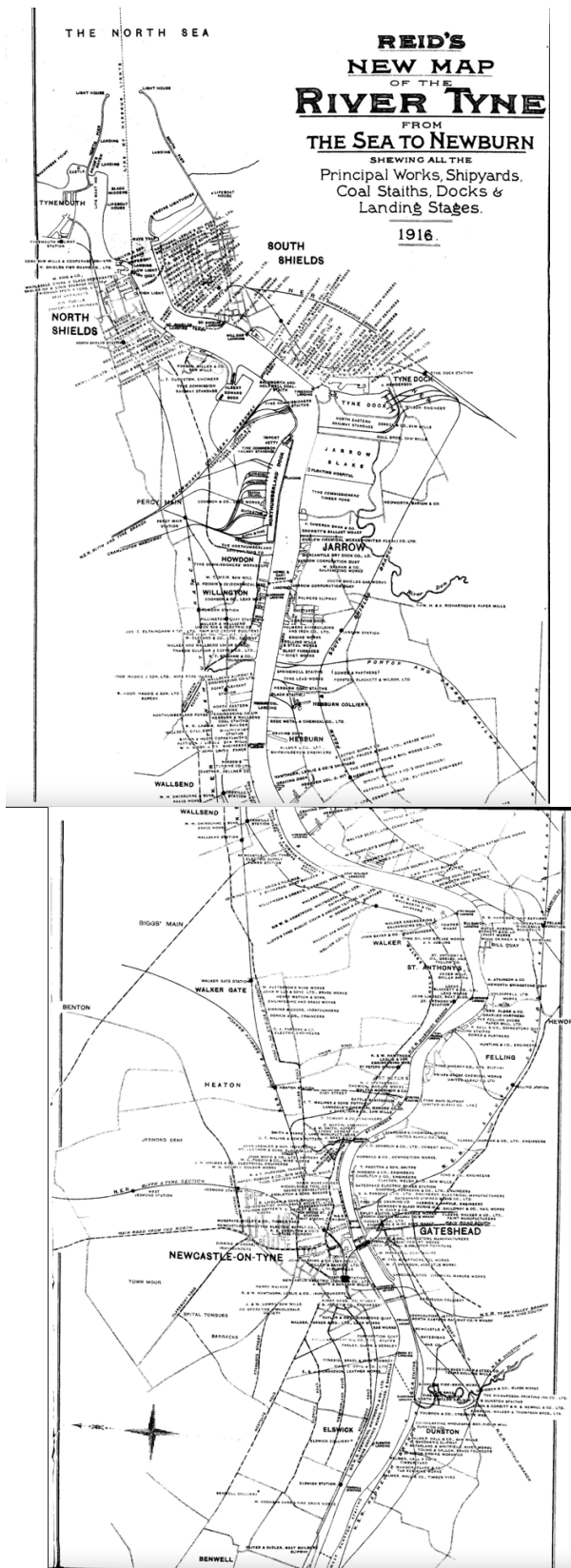
indicate the effects of business clustering over a wider area:²⁸⁶ Bottle and glassworks locate near to each other, ship building and ship repair yards do the same, as do metal and metal working industries.

²⁸⁶ Tyne and Wear Archives, L/PA/1371 'Reid's New Map of the River Wear 1898' & https://www.jimscott.co.uk/Maps/Maps_080_Reid's_map_1.html accessed 01/09/2021

Map 7 – Business Clustering in Sunderland - 1898



Map 8 – Business Clustering in Newcastle - 1916



The Scotia Works' data as well as the Hawthorn letters show flexibility in the use of skilled and semi-skilled workforces, alongside clear evidence of business clustering. Whilst the Scotia employment records provide strong indications of role flexibility and employment clustering, it is almost impossible to drill down to the level of the individual worker, as the records do not name them. However, as the Hawthorn book does contain names it is possible to dig a little deeper, as will be shown in chapter 6. Craft unions certainly acted as suppliers of labour, and evidence of this from the union side reinforces employer evidence. During the Royal Commission on Labour's deliberations in 1893, Robert Knight of the Boilermakers' Union was asked whether, if firms required boilermakers or shipbuilders, they asked the Society for help. Knight was unequivocal:

“Yes, if men are wanted they apply to our branch secretaries, and we supply the men.”

He went on to say that they sent them from all parts of the United Kingdom and gave an example of sending men to Belfast. The employer paid half the fares, the Society the remainder. He gave a further example of sending men to Birkenhead from Newcastle, with the fares again being split between the Society and the employer. The men stayed in Birkenhead for at least three months. He finished his answer with the telling phrase: “In all cases they apply to us for men.”²⁸⁷ This is clear evidence of the Union's role, of the fluctuation in demand from employers, and the co-operation between the two to match demand with supply.

²⁸⁷ Royal Commission on Labour, 1893, Question 20,724, p39

Craft workers were first and foremost acting as rational actors and attempting to preserve their roles and employment regardless of the effects on their fellow workers. It was through their Unions/Societies that this behaviour was often expressed. These institutions were, in effect, the organisational manifestation of the individual worker's rigidity. The push for an eight-hour working day was one of the significant campaigns of the period, but in the case of the Scotia Works at least it appears to have made little difference to the employment variation at the Works.

It has been shown above that Unions were active in securing employment for their members. When this is combined with statistical employment evidence from the Scotia Works, and the role of the foremen in allocating and managing work, it indicates a situation where individual craft workers, in tacit agreement with employers, took a pragmatic and flexible approach to maximising their working opportunities. These actions may have utilised institutional structures but were driven by individual and community expectations and desires. The institutions were the means through which individual and community needs were met, not the instigators of those needs.

As with the Scotia Work's employment records, these are few records of working practices in a North East engineering or shipbuilding works. But those that exist do throw light on working practices. There is a note for the St Peter's works headed "Splash Plates for Engine Numbers 2642-3-4".²⁸⁸ These plates were made for three cargo ships (Port Hunter, Port Augusta, and Port Phillip) built by R.W. Hawthorn, Leslie & Co Ltd at their Hebburn Yard for William Milburn & Co of London in 1906. Each boat was a steel-constructed single screw with a triple expansion (27", 45" & 74" x 48" stroke) 443nhp engine built at St Peter's.²⁸⁹ The ship cost £51,210 each, the engines coming in at £14,780 per unit.²⁹⁰

Picture 11 - Port Augusta in 1906²⁹¹



²⁸⁸ Marine Technology Special Collection, Newcastle University, Catalogue of Company Documents, *ibid*, Letter Book: St Peters Engine Works, M.O.D. "A", 13 January 1900 - 2 May 1911, 998 pages, Catalogue Number 03003/2

²⁸⁹ Nominal horsepower (nhp) is an early 19th-century rule of thumb used to estimate the power of steam engines. It assumed a steam pressure of 7 psi (48 kPa).

²⁹⁰ Data from <http://www.tynebuiltships.co.uk/P-Ships/portaugusta1906.html> Accessed 27/4/2018

²⁹¹ <http://www.tynebuiltships.co.uk/P-Ships/portaugusta1906.html>. Photo copyright Allan Green

In this note the writer, likely to have been a foreman, notes that the splash plates 'appear to be as simple as it is possible to make them'. The writer goes on to suggest that one man makes all the templates and sets required for the three engines. A second man would cut and punch them, with apprentices doing the riveting. The note ends with a comment to the effect that as this is light work there should be no need for more than one helper to each plater, except when 'ripping up' the long sheets of metal. In the light of the regular platers' helpers' disputes this is interesting, an issue we shall take up when assessing the long series of disputes between platers and platers' helpers in chapter 4.

This note also shows the importance of the foreman in planning and managing the flow of work within the shop, as well as in the allocation of resources. That it needed to be explicitly mentioned that only one plater's helper should be required is indicative of the demarcation and task allocation challenges that were commonplace on the shop floor. Secondly, there is an undated note (162 in the archive and transcribed here from the original, Figure 20 below) describing in detail the costs and time involved in manufacturing what appears to be part of a boiler.

Figure 17 – Transcription of internal memo re manufacturing a boiler

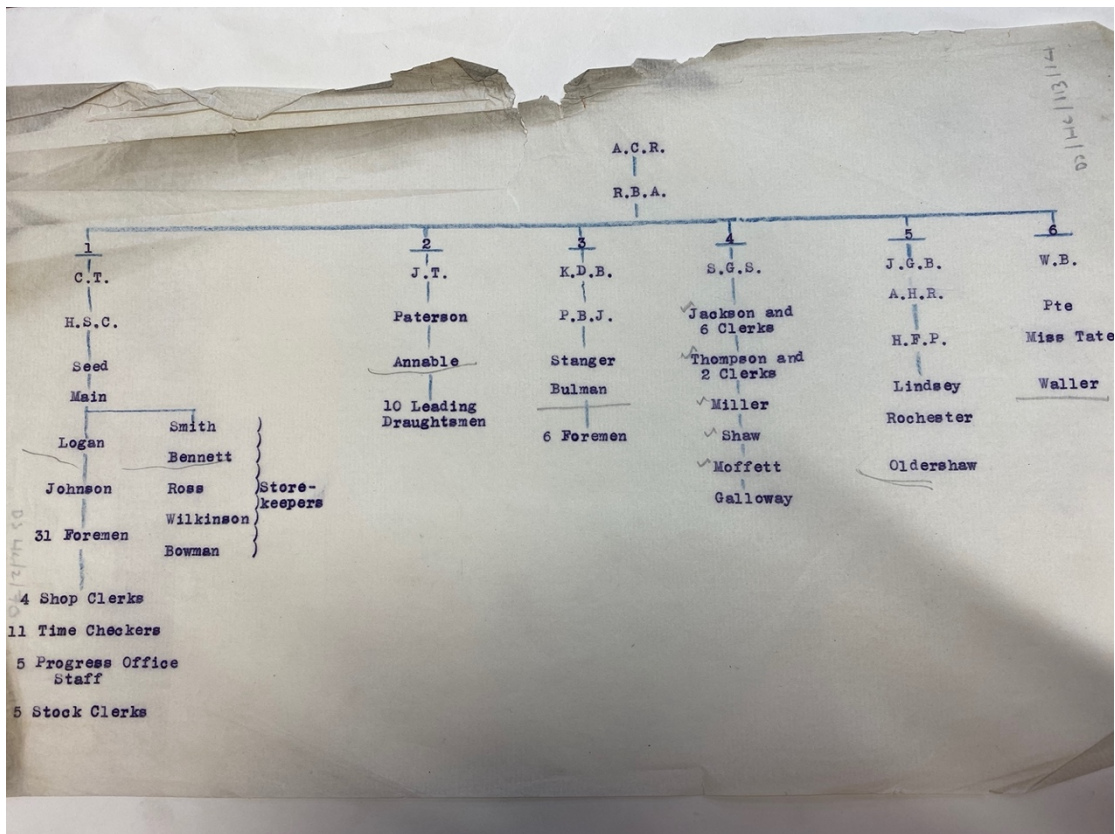
Estimate for Making					
			£	S	D
Firstly	45ft of copper pipe 13" diameter in four lengths with flanges 2 straight and 2 bent				
	2 straight pipes 13" diameter		2	2	0
	2 bent pipes 13" diameter		5	10	0
	Total		7	12	0
Secondly	One 8" valve box with 9 valves. Machining and fitting up of same.				
	Planing	21 hours		12	8
	Slotting	3 hours		1	10
	Boring	18 hours		12	7
	Drilling body	27 hours		14	4
	Drilling cover spindle and lid	10 hours		5	3
	Marking off all parts	10 hours		7	7
	Turning and boring covers	15 hours		10	6
	Turning and boring glands	4.5 hours		3	1
	Boring and screwcutting bridge	18 hours		12	7
	Turning spindle	18 hours		12	7
	Turning valve lids	15 hours		10	6
	Turning valve seats	15 hours		10	6
	Turning pillars	9 hours		4	10
	Milling squares on spindles	9 hours		4	10
	Sub total		6	3	8
	Fitting and testing	85 hours	3	0	0
	Craneman and slingers	9 hours each		9	0
	Sub total		9	12	8
	plus 25%		2	8	2
	Total		12	0	10

This is important because it is indicative of: a) the number of steps required, b) the time taken, and c) the relative costs of each step. Bending pipes appears to more than double the cost, and it took 192.5 hours for manufacture and 85 hours for fitting and testing, a total of 277.5 hours. Interesting as well is the addition of the 25% margin. It is also clear evidence of the division of labour and the increasing specialisation of technical skills required. As with the first foreman's note discussed above, it is indicative of a structured approach to work planning, rather than the more usual delegation of responsibility to the workforce squads more typical of the shipbuilding process. This division of labour and specialisation is important in showing the craft worker's effective control

over working practices, and the almost symbiotic relationship between foreman and journeyman. It also indicates, because each element is costed separately, that there was little product standardisation.

There also exists an organisation chart for the St Peter's Works (see below).²⁹²

Picture 12 – St Peter's Works Organisation Chart



The chart is a simple representation of the functional structure of the works, and although it shows the groups and individuals who constituted the function, the relationships between and within that function are not clear. An expanded transcript can be found at the end of this chapter, Appendix 5. Some points of note. There are 31 foremen

²⁹² Tyne and Wear Archives DS.HL/2/70 (the item is undated but a handwritten note indicates it as being c1900). There is a transcription in Chapter 3 Appendix 5.

noted as part of the 'Works', but no record of the numbers or types of worker they were supervising, or whether they were doing any of the work themselves. Alongside these foremen are 5 'Progress Office Staff', whose role presumably would have been to check and record how work was progressing, and 11 'Time Checkers' whose role would seemingly have been complimentary to the Progress Staff and would have fed into the Counting House and the Pay Clerk. In addition, the Outside Department has 6 foremen noted, but no supervised workers. Finally, Office and Correspondence contains a Miss Tate. The Apprenticeship Register for the works lists a number of women employed at the works between 1892 and 1914, mostly in the Drawing Office. The interesting thing is not that they were working in the drawing office but that they were considered as Apprentices.²⁹³

An inventory carried out for Hawthorn's in 1885 by Wheatley Kirk, Price and Goutly, Accountants valued the St Peter's Works Assets at a total value of £79,795.²⁹⁴ Included in the inventory are machine tools of considerable age, vindicating the valuer's view that investment was needed. Four examples will suffice:

- 1) A punching and shearing machine in the Chimney Shop, installed in 1874.

²⁹³ Tyne & Wear Archives DS.HL/2/106 Apprenticeship Register. Names in the register include:

9/7/1895 Miss Brevis

13/4/1891 Miss L Foster

6/8/1896 Miss E Turner

5/4/1899 Miss E Vass

7/1/1892 Miss E Walton

21/04/1902 Miss M Aitkenhead

'Miss Florrie Richie, date of indenture 23/10/1909. Trade – tracing. 3 years. Address: 58 King John Terrace, Heaton'

²⁹⁴ Tyne and Wear Archives DS.HL/2/93, Volume 1

- 2) An eccentric punching and shearing machine in the Chimney Shop, installed in 1863.
- 3) The overhead driving and strap shifting apparatus in the Boilershop, installed in 1862.
- 4) Planing machine no. 63, to plane 1' 10" x 15" high x 3' 6" long, installed in the Machine Shop in 1871.

The second page of the document is a report of a visit made by the writer and two colleagues to Messrs Clark & Co in Sunderland on April 6th 1907 “seeing through their works”.²⁹⁵ ²⁹⁶ The note discusses the type of bonus scheme used (the Rowan Premium System), and the lack of inspectors approving the finished work being brought to them, although this was being addressed.²⁹⁷ Most interestingly, the author writes that he is able to acquire “all particulars of the times allowed and taken, with the cost to do the work.” He finally points out that Clark’s have from 40 to 50 High Speed lathes and about 15 High Speed drilling machines and says that Clark’s consider that High Speed machines are vital to the running of the Rowan Premium System. This document clearly shows that there was, at least between these two works, an open culture of information sharing.

Together, these documents are examples of some of the key developments in working practices that happened during the last quarter

²⁹⁵ ‘Clark & Co’ is likely to have been the company based at the Southwick Engine Works, Crown Road, Southwick, Sunderland, who were mainly engaged in manufacturing pumping and winding engines for collieries and ironworks, as well as marine engines.

²⁹⁶ There is a copy of a telegram from Messrs Clark & Co, dated 31/10/1906 about a visit to Hawthorn’s by Mr Baston, ‘our foreman’ the following day, so this interchange was not a one off activity. Marine Technology Special Collection, Newcastle University, Catalogue of Company Documents, Letter Book: St Peters Engine Works, M.O.D. "A", 13 January 1900 - 2 May 1911, Catalogue Number 03003/2, item stamped as 17

²⁹⁷ There is a discussion of the various bonus schemes in Chapter 3 Appendix 1.

of the 19th century. Firstly, the increasing division of labour and the specialisation of task inherent in that change. Secondly the development of more standardisation of task and the ability to measure the resources required with greater accuracy. Thirdly, the process of decomposition of production processes went hand in hand with increasing divisions of labour, and the industrial district and cluster was critical in this, as it allowed knowledge sharing within and across firms. This latter point is exemplified by the memo on the visit to Clark and Co and supported by the evidence of labour flexibility. Finally, the evidence further supports the idea of the industrial district as being as much about social relations as economic ones. Rinaldi, in a study of Emilia-Romagna industrial districts, noted that: "People in the districts shared a cultural homogeneity which lubricated social relations among economic actors, reinforced consensus and group loyalty among both entrepreneurs, ensured the social ostracism of rule-violators, provided a common language to speed innovation and information exchange and established the basis for trustful behaviour."²⁹⁸ This point is pursued in more detail in chapter 6 in the section on Hawthorn workers and social distribution.

²⁹⁸ A. Rinaldi, quoted in John Wilson and Andrew Popp *Industrial Clusters and Regional Business Networks in England, 1750-1970*, (Aldershot: Ashgate Publishing, 2003) p 13.

Chapter 3 - appendix 1 - Bonus Schemes

The Hawthorn's memo contains no details of the Rowan system, but an earlier archive document in the letter book headed "Rowan's system of Premium Bonus" explores two systems – Rowan's and Clark's.²⁹⁹ The memo begins:

"To find a man's bonus - Multiply no. of hours taken by no. of hours saved and divide by the number of hours allowed."

It then goes on with an example:

Time allowed	60 hours
Time taken	40 hours
Time saved	20 hours
Man's allowance	$40 \times 20 / 60 = 13 \frac{1}{3}^{\text{rd}}$ hours
Man's total time inc. bonus	$40 + 13 \frac{1}{3}^{\text{rd}} = 53 \frac{1}{3}^{\text{rd}}$ hours
Firm's saving	$= 20 - 13 \frac{1}{3}^{\text{rd}} = 6 \frac{2}{3}^{\text{rd}}$ hours

Under the Clark system the firm receives the benefit up to the man receiving bonus equal to time and a half. Under the Rowan system the man receives the benefit up to time and a half, the firm taking the benefit above time and a half.³⁰⁰ The author then finishes off by favouring the

²⁹⁹ Marine Technology Special Collection, Newcastle University, Catalogue of Company Documents, *ibid*, Letter Book: St Peters Engine Works, M.O.D. "A", 13 January 1900 - 2 May 1911, *ibid*

³⁰⁰ Under the Rowan Plan, the standard time for the completion of a job and the rate per hour is fixed. If the time taken by the worker is more than the standard time, then he is paid according to the time rate, i.e., time taken multiplied by the rate per hour. If the worker completes the work in less than the standard time; then he is entitled to a bonus along with the time wages. A bonus is the percentage of worker's time rate. This means the bonus/premium is calculated on the percentage of wages earned for working on a job and is not calculated for the time-saved, as in the case of Halsey Plan. This percentage is equivalent to the proportion of the time saved to the standard time. Effectively Bonus = Time Saved/ Standard Time. (Adapted from <https://businessjargons.com/rowan-plan.html>)

Clark version because the firm gains up to time and a half, and it is easier to calculate the men's bonus by simply dividing the time saved by 2.

Several other bonus schemes appear to have been used by other companies in the North East. As has been shown earlier in chapter 2 (page 116) profit sharing schemes had been attempted by a number of engineering firms across the United Kingdom, but very few were recorded in the North East. These schemes, as well as the variety of bonus schemes were one means by which management attempted to exert some control over the flow and pace of work. But as noted below in the section of Foremen they often failed, like the piece work concept because of the unwillingness of firms to accept the consequences of success in a scheme meaning higher wages. Until the latter part of the nineteenth century there were effectively only two methods of paying for labour, whether craft or unskilled: day work or time payment, and piece work. As a general principle it was those who worked at home, the weavers, spinners, tailors and brush makers who were paid by the 'piece', whilst crafts people and agricultural workers were paid by the day. Craft workers were as a rule reluctant to move to a piece work system because it was seen by them as an interference in their craft and the prestige that came with that craft. But the introduction of machinery and the moves towards standardisation of process and output meant that there was pressure on business to produce more accurate production costs and increase the pace and productivity of their workforces. Thus, was set the conflict between the demands of the marketplace and the preferences of the craft workers. One way through this conflict was for businesses to find a way

to encourage craft workers towards a more piece work approach to their work, and this took the form either of a Profit Sharing scheme (see chapter 2 page 116) or a Bonus Scheme. At the same time a more 'scientific' approach to management was finding its way into the thinking of owners and managers, as 'Taylorism' with its simplification and sequencing of processes, greater control over the flow of work across a production unit, and time and motion studies became popular. As argued above, the Clark and Rowan systems were in use in the North East. Several other schemes were in place during the period under discussion, notably the Taylor Differential Piece Rate Plan and the Emerson Efficiency Plan. Both the Taylor and the Emerson plans had their origins in the USA, Taylor's because of his work at Bethlehem Steel, and Emerson's from his time as an engineer on the Santa Fé railway. Taylor's system differed from some piece systems by starting at a low rate per piece produced, allowing an incentive of 50% when the 'standard' of pieces per time unit was met. So, if the target was 10 pieces per day, with a low rate of 2/- per piece and a high rate of 2/6d, and 9 pieces were made on day one and 11 on day two the difference in day wages on day two over day one would 9/6d or 50%. The effect was to incentivise the worker to go at the higher rate continuously, with obvious benefits to the employer. Variants of the scheme with graduated steps from low to standard rate, or with differential rates depending on the complexity of the work involved were developed by his associates. In the UK the Bedaux Company seems to have been one of the principle routes to market for

the Taylor 'systems' approach.³⁰¹ The Emerson system guaranteed a minimum rate, with a 'standard' of 100% efficiency as the target at which a bonus would be paid. As the scale from minimum to standard was graduated there was an incentive to improve even if they could not reach 100%. Unlike other schemes it was to be measured and paid over a full pay roll period so inherent variability would in theory be limited. The Bedaux System was much more complex and based around the idea of the Bedaux Unit or 'B', which was a fraction of a minute of work plus a fraction of a minute of rest. Work tasks would be assigned a number of 'Bs' according to their difficulty and complexity, and bonus payment came if that number were exceeded, with a 25% reduction in the overachievement set aside to be shared amongst other workers in the factory but not on the scheme.³⁰²

Each system described above had the same aim in mind, which was to increase productivity. But as was shown with the Profit-Sharing Schemes the problem was that they were generally poorly implemented. They were either complex (Badaux) and difficult for the participants to be able to draw a direct line between their effort and the proposed rewards, or they were skewed towards the employer (Clark and Rowan) and therefore more of a disincentive. Furthermore, each system was opened to being gamed by the employees, especially when targets were based on one off timings of activities or gamed by the employers when arbitrary

³⁰¹ See Matthias Kipping (1997) *Consultancies, Institutions and the Diffusion of Taylorism in Britain, Germany and France, 1920s to 1950s*, *Business History*, 39:4, 67-83,

³⁰² See W.F. Watson (1934), *The Workers and Wage Incentives – the Bedaux and other systems*, Hogarth Press, p27-32, for a more detailed explanation

targets could be set without active employee involvement. Combined with a lack of investment in new machinery and tools the productivity benefits that could have been gained with newer technology and incentivised productivity did not appear.

Chapter 3 - appendix 2

Occupations – Adapted from D.J. Rowe, 'The Economy of the North East'

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Occupations in Northumberland - totals and % of total employed persons										
	1871		1881		1891		1901		1911	
	Total	%	Total	%	Total	%	Total	%	Total	%
Food and Drink	9082	5.45%	9646	5.58%	12108	5.82%	14875	6.04%	18584	6.54%
Services	1949	1.17%	2925	1.69%	3349	1.61%	4567	1.85%	6136	2.16%
Shipbuilding	3850	2.31%	4830	2.79%	7384	3.55%	10595	4.30%	14096	4.96%
Building	10292	6.18%	10518	6.08%	11475	5.51%	16565	6.72%	14102	4.96%
Cloth Manufacture	360	0.22%	300	0.17%	226	0.11%	406	0.16%	350	0.12%
Clothes and Shoes	13739	8.25%	13604	7.87%	15050	7.23%	15082	6.12%	15085	5.31%
Ironfounders	3129	1.88%	2508	1.45%	2443	1.17%	2651	1.08%	10355	3.64%
Blacksmiths, metal workers	5495	3.30%	4942	2.86%	6044	2.90%	7598	3.08%		
Engineers	4793	2.88%	4971	2.88%	10483	5.04%	15657	6.35%	15788	5.55%
Horses and horse transport	4203	2.52%	4626	2.68%	5663	2.72%	8209	3.33%	6785	2.39%
Coal	15810	9.49%	21537	12.46%	27891	13.40%	37221	15.11%	54286	19.10%
Glass, pottery, chemicals	1733	1.04%	1564	0.90%	1617	0.78%	1513	0.61%	2219	0.78%
Sea and boatmen	6264	3.76%	6193	3.58%	5850	2.81%	4959	2.01%	4272	1.50%
Agriculture	18801	11.28%	17525	10.14%	17278	8.30%	14886	6.04%	15008	5.28%
Government service	655	0.39%	630	0.36%	1087	0.52%	1528	0.62%	2486	0.87%
Labourers	8186	4.91%	8637	5.00%	10506	5.05%	6254	2.54%	4797	1.69%
Teachers	1565	0.94%	2315	1.34%	2987	1.44%	3597	1.46%	4406	1.55%
Domestic Servants	25115	15.07%	23721	13.72%	26436	12.70%	25281	10.26%	27053	9.52%
Railway service	1901	1.14%	3163	1.83%	4279	2.06%	6663	2.70%	7096	2.50%
Commercial / business clerks	1402	0.84%	2948	1.71%	3915	1.88%	6191	2.51%	8261	2.91%
Total employed persons	166621		172889		208132		246409		284255	
Total population	386646		434086		506030		603119		696893	
Female non activity rate		78.4		80.8		73.7		77.5		77.2

³⁰³ D. J. Rowe (2013) The Economy of the North-East in the Nineteenth Century: A Survey with a Bibliography of Works Published Since 1945, Northern History, 6:1, 117-147, DOI: 10.1179/nhi.1971.6.1.117

Occupations in Durham - totals and % of total employed persons										
	1871		1881		1891		1901		1911	
	Total	%	Total	%	Total	%	Total	%	Total	%
Food and Drink	13897	4.64%	15081	4.65%	19837	5.07%	24616	5.41%	29976	5.76%
Services	2719	0.91%	3883	1.20%	4566	1.17%	6462	1.42%	8047	1.55%
Shipbuilding	9724	3.25%	11410	3.52%	20172	5.16%	28998	6.37%	31412	6.04%
Building	18199	6.08%	18761	5.79%	21271	5.44%	29925	6.57%	25407	4.88%
Cloth Manufacture	1416	0.47%	1174	0.36%	1322	0.34%	1655	0.36%	1335	0.26%
Clothes and Shoes	18238	6.09%	19879	6.13%	23496	6.01%	24168	5.31%	23039	4.43%
Ironfounders	24200	8.09%	17577	5.42%	16592	4.24%	16364	3.60%	32210	6.19%
Blacksmiths, metal workers	10309	3.44%	10562	3.26%	12493	3.19%	15162	3.33%		
Engineers	9485	3.17%	10898	3.36%	16893	4.32%	25297	5.56%	25521	4.91%
Horses and horse transport	4761	1.59%	5514	1.70%	7155	1.83%	10636	2.34%	9692	1.86%
Coal	49046	16.39%	69603	21.48%	85171	21.78%	104563	22.97%	152045	29.23%
Glass, pottery, chemicals	6461	2.16%	6955	2.15%	5522	1.41%	4879	1.07%	4615	0.89%
Sea and boatmen	11331	3.79%	11088	3.42%	13255	3.39%	9701	2.13%	8165	1.57%
Agriculture	12391	4.14%	13152	4.06%	13759	3.52%	11068	2.43%	11896	2.29%
Government service	744	0.25%	770	0.24%	1287	0.33%	1809	0.40%	2587	0.50%
Labourers	21986	7.35%	21557	6.65%	21088	5.39%	11386	2.50%	6189	1.19%
Teachers	2710	0.91%	4349	1.34%	5602	1.43%	7431	1.63%	8463	1.63%
Domestic Servants	31207	10.43%	32198	9.94%	36848	9.42%	34634	7.61%	37401	7.19%
Railway service	6263	2.09%	8023	2.48%	10710	2.74%	15147	3.33%	15585	3.00%
Commercial / business clerks	1735	0.58%	3901	1.20%	5443	1.39%	8169	1.79%	9918	1.91%
Total employed persons	299301		324028		391138		455144		520147	
Total population	742205		875166		1024369		1187474		1369860	
Female non activity rate		85.6		86.9		80.3		82.5		82.4

Chapter 3 - appendix 3

Chart 1 – Scotia Works 1899 – role numbers by week

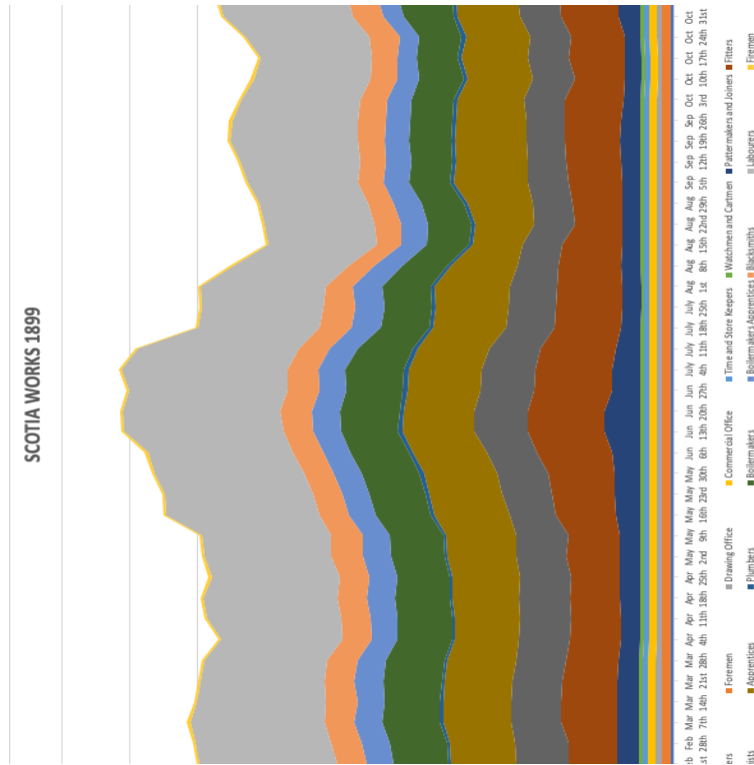


Chart 2 - Scotia Works 1913 – role numbers by week

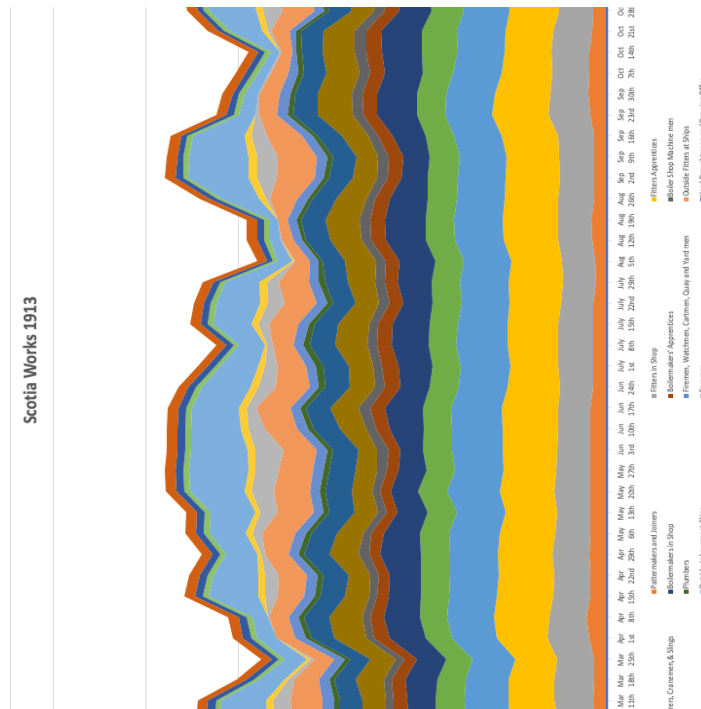


Chart 3 – Comparison of standard deviations in roles 1889-1900

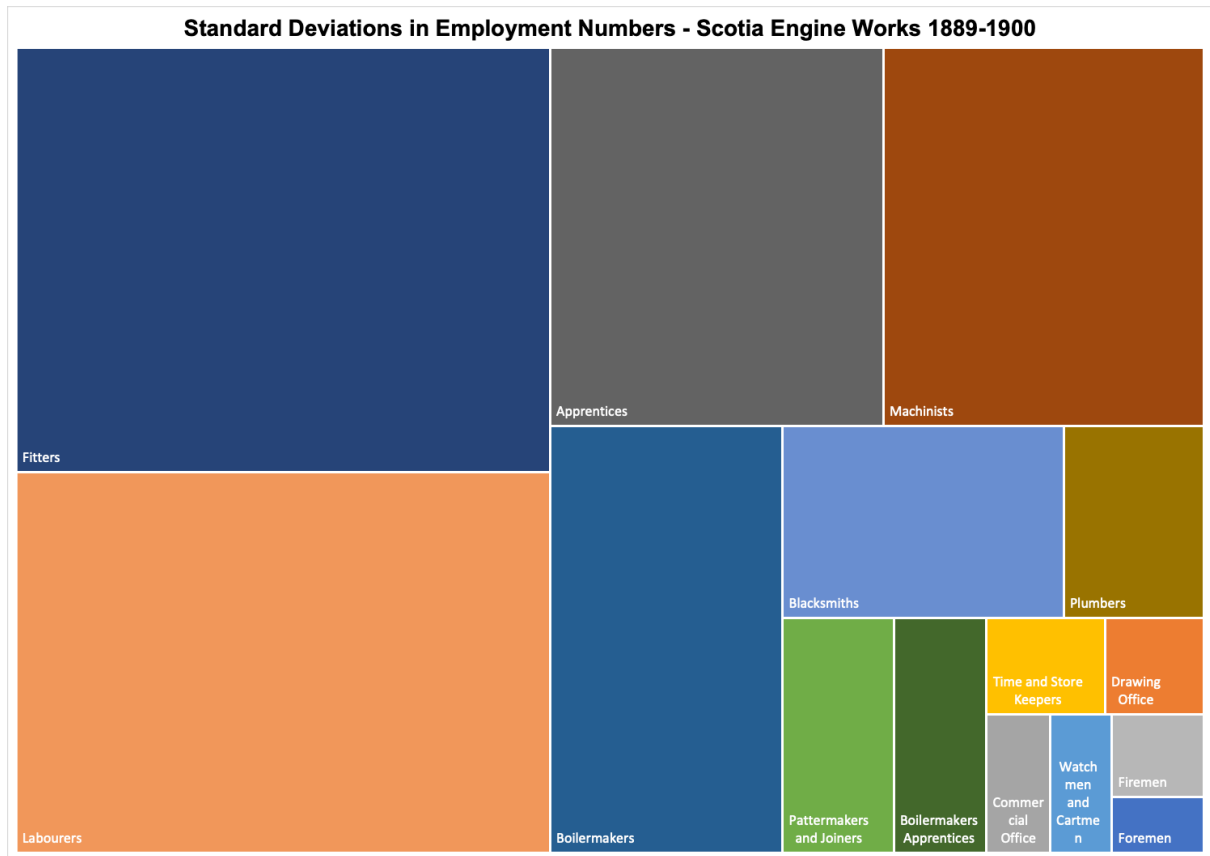


Chart 4 – Scotia Works – Contract Details

Contract Date	Shipment Date	Contract to Shipment (days)	Engine Specifications (Triple)		
			High Pressure	Intermediate Pressure	Low Pressure
1/01/1912	31/03/1913	426	25"	40"	6"
1/01/1912	15/04/1913	441	25"	40"	6"
1/03/1912	31/05/1913	446	26"	42"	7"
1/03/1912	30/04/1912	45	25"	41"	6"
1/09/1912	31/10/1913	406	26.5"	44"	7"
1/05/1912	01/07/1913	424	25"	40"	6"
1/05/1912	15/07/1913	438	25"	40"	6"
1/05/1912	01/09/1913	483	25"	40"	6"
1/02/1913	31/03/1914	413	25"	40"	6"
1/07/1913	01/06/1914	334	25.5"	42"	7"
1/08/1913	30/04/1914	266	19"	30"	5"
1/08/1913	30/04/1914	266	20.5"	33"	5"

Chart 5 – Material costs per contract

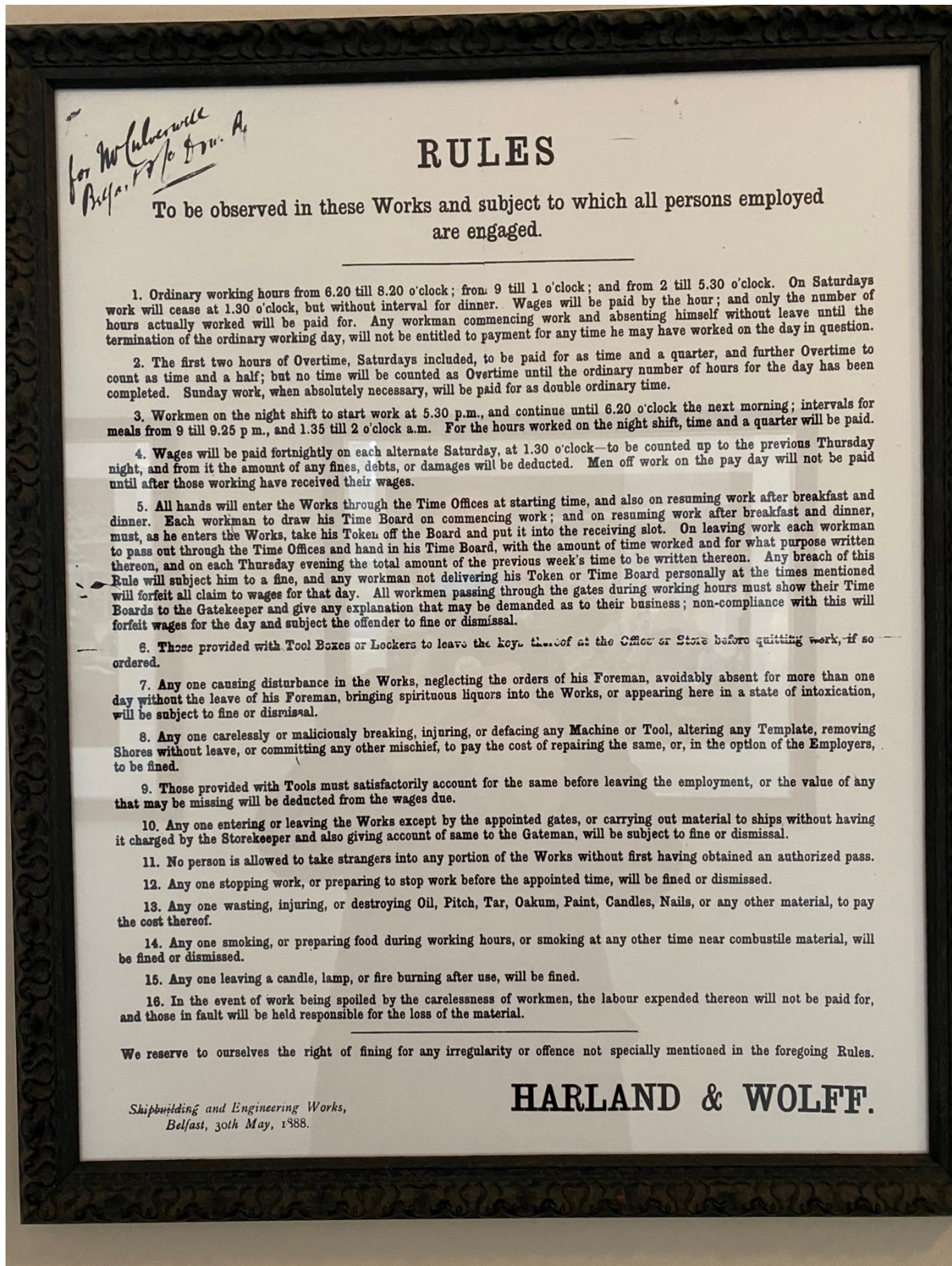
Material Costs						
Feb-13	Mar-13	Apr-13	May-13	Jun-13	Aug-13	Sep-13
£1,835,146.70	£672,143.30	£1,009,135.50	£1,020,679.94	£348,195.20		
£927,175.70	£670,175.20	£671,136.60	£959,665.60	£1,072,108.70	£444,616.80	
£343,106.60	£332,144.50	£239,676.70	£153,919.39	£943,105.10	£2,055,151.80	£1,223,165.94
£1,444,165.10	£1,166,195.20	£452,146.80	£938,854.50	£732,753.94	£1,241,816.60	£434,019.94
56	£38,866	£64,115.10	£23,312.20	£109,115.90	£244,016.60	£163,116.10
£777,154.00	£188,165.20	£833,715.20	£664,113.30	£680,819.94	£720,819.30	£791,112.20
£94,919.90	£38,015.50	£92,166.20	£84,715.90	£1,024,910.10	£1,486,461.50	£1,171,135.70
£78,114.40	£38,318.80	£115,810.00	£134,214.40	£15,195,110.10	£1,193,318.80	£1,481,135.40
		166.60		£32,115.50	£313,115.10	£663,135.94
				£78,710	£38,105.10	£53,105.94
				81		
						91
						91

Chart 6 – Labour costs per contract

Labour Costs						
Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13
£1,123.10	£18,011.00	£12,115,116,903.20	£542,416.60	£23,316.60		
3.00	£1,715.90	£10,081.30	£32,116.40	£782,115,102,798.10	£1,119,913.10	
80	£3,118.60	£14,310.00	£1,112,210.00	£11,195,510.00	£153,105,800,879,210.00	£28,911,114.00
134	£3,914.40	£4,135.70	£22,816.60	£179,618.80	£564,188,111,694.00	£56,919,110.00
144	80		£11,513.30	£34,710.00	£4,918.60	£11,610.00
80.00	51.00	15.30	£2,186.20	£2,910.00	£9,310.00	£63,135.40
74.40	46.60	15.30	£1,611.00	£3,175.50	£4,918.50	£38,810.00
			£1,219.90	171.30	£2,016.60	£8,108.10
						£2,519.00
						£2,519.00
						£2
						£2

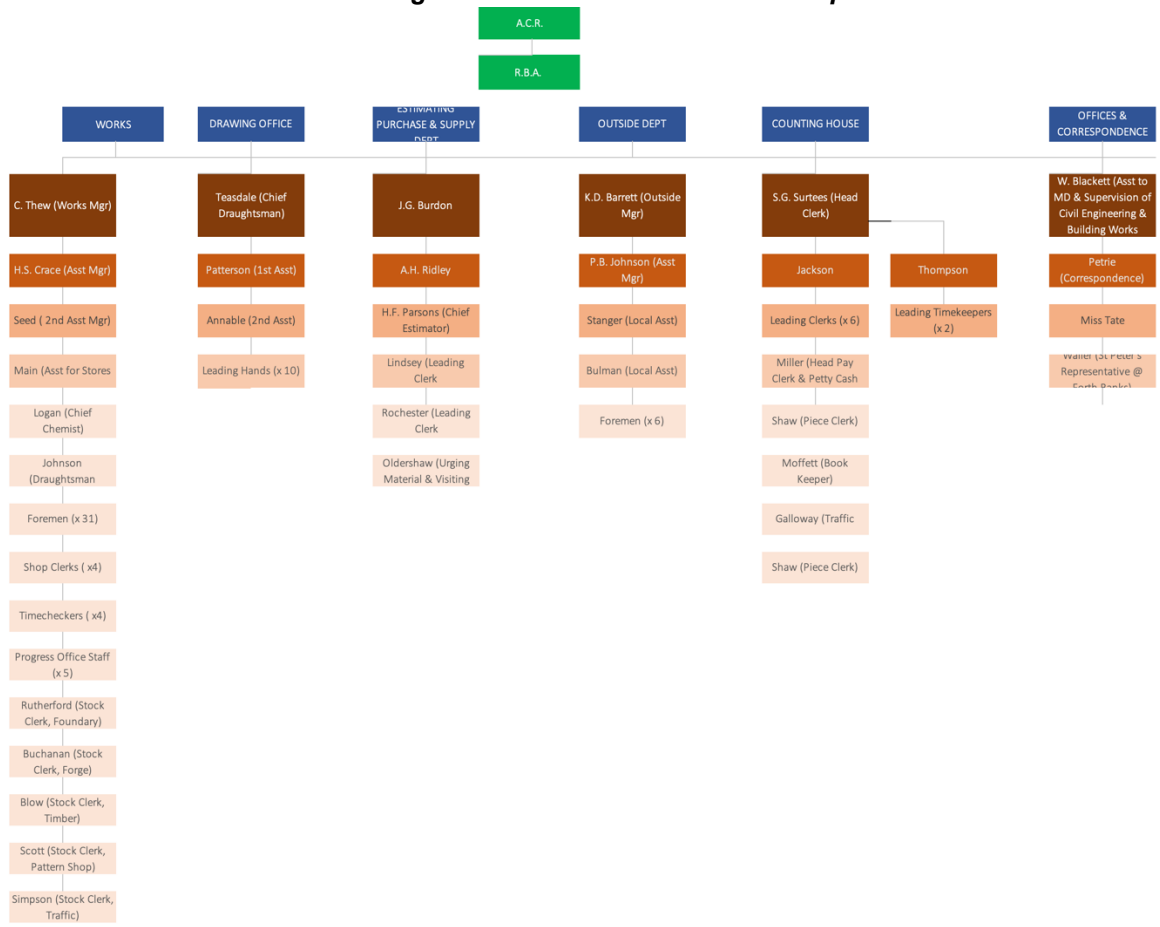
Chapter 3 – appendix 4

Picture 13 – Harland & Wolff Rules 1913



Chapter 3 - appendix 5

Picture 14 - St Peter's Works Organisation Chart c1900 – transcription



Chapter 4 – Disputes

You cannot judge the temper of a tiger by its spots
Nor a navvie by the whiskers on his chiv
And one half of the world don't trouble how the other half
Manages to find a way to live
We've all of us got notions if we haven't got ideas
With that you will or won't agree
One man ain't like another if he's different, that's a cert,
If you want an example look at me
I've got my health, I've got my strength in fact I've got 'em both
I've got my likes and dislikes too I have, I'll take my oath.

Refrain: *If I'm poor, I'm proud and I'm particular
I don't like work and never did
There's lots of chaps who're fond of it, d'you see
And they're at liberty to do it all for me
I might get a job if I liked to look
But I don't intend to try
For there's lots of millionaires
As old and just as strong as I am
Who never go to work, so why should I*

Written and composed by Harry Boden & Bert Brantford - 1901
Performed by Harry Ford (1877-1955)

Disputes reflect the ways in which work was valued by those doing it, by those who were customers or consumers of that work, and by the stakeholders in it. They are also clearly reflective of the ways in which work was valued by those paying for it, and by employer organisations. In a period of economic and political change industrial disputes can provide insights into the concerns of working people, their employers, and other agencies and actors such as the Churches who acted as intermediaries or conciliators. Disputes offer the chance to see some essential truths about those involved, what they were prepared to fight for and what compromises they were prepared to make. They reveal issues that were at the heart of their working relationships, whether employer and employee, or employee against employee. Previous chapters have looked at the ways in which clustering influenced where people lived, where firms located themselves, and the consequences for employment. Agglomerative benefits came to both employers and employees from

this clustering, but sometimes proximity could be a source of conflict as well. Examining disputes will show the extent to which this was true in the North East.

Disputes provide evidence of the relationships between employees and employers and the issues that both divided and united them, the situations that led to the disputes and the means through which disputes were resolved. They also provide evidence of relationships between different groups of employees, and indeed of employers. Additionally, they provide the opportunity to look at how different networks interlinked, whether these networks were in the form of employees, employers, unions, employer associations, or other political or semi-political bodies. As will be shown, networks played a critical role in organising disputatious parties, bringing them together to resolve the disputes, and working on ways to either reduce the number of disputes or contain them before they became serious. Finally, disputes are sources of information about the intra- and inter-relationships between the various bodies concerned in them, whether that be the willingness or otherwise of one group to support another in a dispute, or the desire of one craft to retain control of a process even when the nature of that process was changing, or the willingness of employers to take on workers who were in dispute with other employers.

Industrial disputes can provide insights into aspects of the ways in which communities and networks worked together and against each other, and they can indicate the participants' motivations and how far these were driven by a desire for change and reflected the nature of relationships between the groups. This thesis contends that it was the cumulative effect of individual decisions, reflected in the actions taken by institutions that was the ultimate cause of the sclerosis that affected them and contributed to the long-term decline of engineering and shipbuilding in the

North East. It can be argued that these decisions were taken by rational actors and can in that context be interpreted as reasonable, but the cumulative effect of them was to limit investment, slow down innovation and the adoption of new working practices and machinery that might have reduced the effects of long-term decline. Clustering affected both business and employees, and provided benefits to both, but also helped to reinforce behaviours and limit any gains that may have been accumulated from a wider view of trends and developments outside the region. The concept of the cluster lifecycle has been debated for some time.³⁰⁴ Phases of the lifecycle have been identified, one of which is maturation or exhaustion, generally associated with cognitive lock-in as firms succumb to groupthink, and ‘institutions being configured around certain technological approaches and solutions to the neglect of other alternative approaches.’³⁰⁵ This chapter will demonstrate that the analysis of this phenomenon must include Trades Unions as the primary aim of demarcation disputes was to maintain a status quo regardless of any other changes that may have happened or be happening.

Setting the context

This chapter will examine disputes in two short periods, 1894 to 1895, and 1915 to 1918. This choice reflects several factors, including the political and economic contexts of these two periods. 1894 and 1895 were periods of (relative) industrial harmony:³⁰⁶

³⁰⁴ G M Peter Swann ‘Towards a Model of Clustering in High-technology Industries’ in Swann, Prevezer and Stout (eds) *The Dynamics of Industrial Clustering*, Oxford University Press, 1988; Wilson and Popp, *ibid*; Popp and Wilson, *ibid*; Wilson and Singleton, *ibid*

³⁰⁵ D Charles, ‘The evolution of business networks and clusters’ in Wilson, Corker and Lan (eds) *ibid*, p 41

³⁰⁶ National figures – taken from Report by the Chief Labour Commissioner on Strikes and Lockouts of 1895 C.8231.

Figure 18 – Working days lost through strikes 1893-1895

	1893	1894	1895
Days Lost Nationally	31,205,062	9,322,096	5,542,652

This is important because although national disputes such as the Eight-Hour Day movement are indicative of long-term shifts in relationships between employers and employees, they can overshadow smaller yet more important changes evidenced in local disputes. In periods of relative industrial peace, where disputes arise, they usually reflect local problems, allowing stronger insights into local conditions and relations.

In both periods account needs to be taken of the changing legal and political framework within which the disputes took place. The growth of 'New Unionism', and the focus by some in the Trade Union movement on political means to achieve their goals, ran alongside moves by employers to gain greater power and influence by joining together in Trade Associations such as the North East Coast Ship Repairers' Association. The main engineering employers in the North East had come together as the Tyne and Wear branch of the Iron Trades Employers' Association in 1884 in response to a strike by engineers working on the Wear.³⁰⁷ In 1894, employers on the Tees and in Hartlepool voted to create the Tees and Hartlepool Engineering Employers' Association, and they formed a joint committee with the Tyne and Wear Association. 1895 saw the formation of the North East Coast Ship Repairers' Association, and in June 1896 the National Employers' Federation of Engineering Associations was created, with Colonel Henry Dyer (of Armstrong's) as the first President.

This defensive development of employer organisations reflected the mounting body of case law undermining some of the legal immunities that had earlier been

³⁰⁷ See Clarke, p 285.

secured by the Unions. The Trade Union Act of 1871 provided for trade union immunity from prosecution for restraint of trade in the pursuit of legitimate trade union activities. It also stated that trade union agreements were not directly enforceable or subject to claims for damages for breach of contract, something that was designed to ensure that courts did not interfere in union affairs. Finally, it provided for a system of voluntary registration, carrying some small advantages, and allowing members to access the financial records of their unions. However, the Criminal Law Amendment Act 1871, passed at the same time, made picketing illegal. This was not repealed until the Conspiracy and Protection of Property Act 1875. Employers and Employer Associations increasingly turned to the law to deal with disputes. In particular, the series of cases between 1893 and 1897 dealing with secondary and other picketing were beginning to constrain the actions of unions, and the TUC was forced to take a lead on behalf of smaller unions in the courts to contest these cases.³⁰⁸ Figure 22 below shows the changes in Union membership in the main unions in Shipbuilding, Engineering and Metal working between 1887 and 1896.³⁰⁹ These are national numbers, but for comparison the numbers for the two Miners' Associations in the North East are included.

Figure 19 – Example Union Memberships 1887 - 1896

Union	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896
Northumberland Miners' Mutual Confident Association	12,748	12,436	15,144	16,691	17,366	17,059	17,367	17,772	20,522	19,894
Durham Miners' Association	30,000	37,000	46,000	49,000	55,000	50,000	50,000	58,274	58,400	59,153
Firendly Society of Ironfounders of England, Ireland and Wales	11,718	12,202	13,805	14,821	15,291	15,190	15,050	15,195	15,176	16,278
Amalgamated Society of Engineers	51,869	53,740	60,728	67,928	71,221	70,909	73,526	73,510	79,134	87,313
United Society of Boilermakers and Iron and Steel Shipbuilders	25,100	26,545	29,993	32,926	39,996	39,000	38,238	39,228	39,629	40,776
Associated Shipwrights' Society	3,578	4,389	5,450	7,389	10,120	11,937	13,325	13,447	13,747	17,235

The interesting numbers here are those for the Amalgamated Society of Engineers (ASE) which show a rise of over 35,000 members, some 68 percent,

³⁰⁸ See Reid, p 261.

³⁰⁹ Report and abstract of labour statistics. (Board of Trade, Labour Department.) Fourth annual report of the Labour Department of the Board of Trade (1896--97) with abstract of labour statistics of the United Kingdom. C.8642. Data taken from table on pages 12-15.

<https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1897-075436?accountid=12860>

indicative of the way in which collective action was being recognised as an effective means of protecting community interests amongst craft workers. In 1871, fewer than 2,000 workers in the North East were members of the ASE, but by the end of the century more than ten thousand in the region had joined, around 11 percent of total membership during the period 1891 to 1901, indicative of the expansion in engineering. There would still though have been many non-Union members in the region, and the focus on recruiting only 'skilled' workers would have constrained the numbers.³¹⁰

The 1915 – 1918 period differed largely because of the context of war. Trade Unions had come through the legal difficulties caused by the Taff Vale judgement, and Employer Associations had gained in strength as well.³¹¹ The Labour Party had begun to take shape as an independent parliamentary grouping and to move out from the shadow of the Liberal Party, putting up their own candidates at election time and not deferring to the local Liberal candidate. The Munitions of War Act 1915 forbade strikes and lockouts in firms supplying the armed forces and replaced them with compulsory arbitration. The Act suspended for the duration of the war restrictive practices by trade unions and limited labour mobility between jobs.³¹² Appointed arbitrators dealt with any disputes therefore occurring, and both sides were required to give their evidence.³¹³ This gives an opportunity to see in detail the issues at stake, and, as in 1894-95 these are more likely to reflect local concerns and attitudes.

³¹⁰ See Clarke, *ibid*, p303.

³¹¹ The 1906 Trade Disputes Act overturned the judgment of 1901 that effectively removed the strike as a process that the Unions could use.

³¹² Munitions of War Act, 1915, Part II, paragraph 3.

³¹³ The Munitions of War Act 1915, Part 1 paragraph 1 and paragraph 2.

It is important to set the wider economic context. Taking two measures, GDP per head and GDP growth per worker year, national economic performance between 1882 and 1924 fell into two distinct phases, pre and post 1913. Firstly, taking data on GDP per head we see the following:³¹⁴

Figure 20 – comparative GDP per head growth 1882 - 1924

Period	Percentage GDP Growth (annual rates)
1882 - 1899	1.43
1899 - 1913	0.31
1913 - 1924	0.3

These are broad measures, but indicative of rapid changes taking place particularly in the first period. They do, of course, mask serious economic downturns within the period but they indicate the scale of the differences between each period. Figure 24 puts these into a broader context, a comparison with six industrialised, competitive countries. The measure this time is slightly different, the growth of GDP per worker year, so again it is the broad trends that matter.³¹⁵

Figure 21 – comparative GDP growth per worker year 1873 - 1913

	UK	USA	Sweden	France	Germany	Italy	Japan
1873-99	1.2	1.9	1.5	1.3	1.5	0.3	1.1
1899-1913	0.5	1.3	2.1	1.6	1.5	2.5	1.8

UK performance more than halved, and everyone else bar the USA either improved their GDP per worker or maintained it. This points towards a few potential causes, including underinvestment in UK business, a lack of skills development in the workforce, and of course the possibility that it is easier to record higher levels of GDP per worker when starting from a lower base, which would be the case for most of the UK's competitors. It is likely to have been a combination of all these factors, but the relative weight given to each one needs further work

³¹⁴ Adapted from Roderick Floud and Donald McCloskey (eds) *“The Economic History of Britain since 1700”*, chapter 1, Roderick Floud, p15. The data from 1873 to 1913 is real GDP per worker, from 1913 is GDP per man-year, so not directly comparable. But it is the general trend that is important here.

³¹⁵ Adapted from Floud and McCloskey (eds) chapter 1, p16.

There were some specific conditions in the North East affecting business and employment. The biggest physical change was the dredging of the River Tyne to the west of the city. In 1854, the Tyne Commissioners started a programme of development and improvement of the river that continued well into the 20th century. Over seventy years, the River Tyne was deepened from 1.83 metres to 9.14 metres and over one hundred and fifty million tonnes dredged from it. This enabled Armstrong's to develop shipbuilding at Elswick, ultimately being able to construct vessels as large as warships. All along the river shipbuilding and engineering expanded, supported by huge population growth. Between 1750 and 1900 Newcastle was the seventh fastest growing city in the world.³¹⁶ Growth of this magnitude did not, in the medium term at least, change the nature of industrial relations either between employers and employees or between work communities, unionised or not, as will be shown below.

Industrial Disputes 1894 - 1895

As can be seen in chapter 4 appendix 1, North Eastern engineering industries lost 430,000 days due to disputes in 1894.³¹⁷ However, based on the Board of Trade's own figures across the UK the total number of days lost in strikes was less than one third of those lost in 1893, and not much more than half that of 1892. The Board gathered this data from both employers and trades unions by asking for

³¹⁶ Derived from P.J. Taylor *et. al.*, '*Explosive city growth in the modern world-system*', *Urban Geography* 31(2010), 878, 880.

³¹⁷ Information gathered from the 1894 report on Strikes and Lockouts by the Chief Labour Correspondent of the Board of Trade. C-7901. <https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1895-073250?accountid=12860>

details of disputes.³¹⁸ For the 1894 statement, 57 percent of employers' reports were returned, and 65 percent of Union reports.

But raw numbers tell only part of the story. As the Board of Trade itself noted, there was a close relationship between labour market movement and the nature and results of disputes between employers and the employed. In times of good trade, disputes tended to focus on demands for better wages. In times of depression, disputes tended to focus on resisting wage or job cuts. Whilst there was no generally accepted measure of total unemployment, the Board worked with the Trades Unions to gather data on their unemployed members. For Shipbuilding, General Engineering Trades, Iron and Steel, the national figures gathered for the period 1887 to 1895 are shown below, giving the full year average percentage of registered union members who were unemployed each year:³¹⁹

Figure 22 – Registered Union members unemployed 1887 - 1895

Year	Average
1887	9.44
1888	5.96
1889	2.28
1890	2.21
1891	4.13
1892	7.71
1893	11.40
1894	11.16
1895	8.22

This does not represent all unemployment in that sector, only that of members of reporting unions, but the trend and scale is what matters here. Within these numbers there were significant differences around the country, and within the North East this was no different. For example, between May 1893 and April 1894 unemployment within engineering as registered by the relevant trades unions was lower on the Wear than it was on Tyneside; for early 1894, it was 9 percent on the

³¹⁸ Ibid p A4.

³¹⁹ Taken from the Fourth Annual Report of the Labour Department of the Board of Trade (1896-97) C-8642, p70

Wear, but 20 percent on the Tyne.³²⁰ The Board of Trade's Monthly Labour Gazette gave reported unemployment figures for both shipbuilding and engineering, and generally shipbuilding had higher numbers than engineering.³²¹ Cyclical fluctuations in shipbuilding were a primary reason, whether caused by cycles of trade, delayed delivery to ship owners, or even the weather, all impacting employment in shipbuilding.

Other changes can be found in the analysis of the Board of Trade, for example changes in working hours and wage rates.³²² The extent to which the huge volume of information collected was used is interesting, and as will be shown in the Platers' Helpers dispute below the employers were more able and willing to join and utilise some of the agglomerative benefits that came from sharing and using such information, which the Unions either chose not to do, or could not do.

What follows is a series of descriptions and analyses of two industrial disputes in 1893-4. The descriptions are supported (where available) by contemporary newspaper reports. Newspapers were rarely neutral in their approach to issues between management and labour, but in most of the reportage of the 1894 disputes (there was none of the 1915-18 disputes, because of war time restrictions on

³²⁰ See Clarke, p 347.

³²¹ For example, the April 1894 edition of the Labour Gazette reports on its first page that "Taken as a whole, the Engineering and Metal Trades remain almost stationary. The percentage of unemployed in unions connected with these trades has fallen from 8.5 to 8.3. In aggregate no alteration has taken place in the Shipbuilding trades, though at some places an improvement is reported. The proportion of unemployed in the unions concerned remains the same as in March and April, viz 13.3 per cent." Labour Gazette, April 1894, published by the Board of Trade, p 161, Economic History Digital Collection, <https://lse-atom.arkivum.net/uklse-dl1eh010010020004>.

³²² Board of Trade.--Wages and hours of labour. (Labour Department.) Report on wages and hours of labour. Part I. Changes in rates of wages and hours of labour in the United Kingdom in 1893. With statistical tables, 1894 Number:C.7567 pxxxii <https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1894-072103?accountid=12860>. The changes identified were both positive and negative. The data was gathered from Trade Union sources, so applied only to Trade Union members, but is none the less indicatively important. See Chapter 3 Appendix 2 at the end for a summary table showing changes over time in wages and unemployment (at a national level, NOT by region) that gives an insight into the relationship between overall economic performance and the effect on wages and employment.

reporting) the issues covered were about the consequences of the disputes, rather than the causes of the disputes themselves. As has been argued in previous chapters, community interests such as the desire to maintain employment or to retain broad family control of a business were among the concerns that institutions reflected. These disputes were rarely without consequences on other communities, hence the tendency for newspapers to reflect on the impacts rather than the esoteric details of the dispute.

1894 Pattern Makers and Iron Founders Dispute

Both the Pattern Makers and the Iron Founders were important in the early stages of the manufacture of most engineering products. When an object was to be made from any liquefied metal, the Pattern Maker made a wooden model of the object which was used to create a sand (or sometimes loam) mould into which the Founders poured the hot metal. Without that Pattern the Iron Founders had no work, and without the cast metal products engineers and other workers including Boilermakers and shipbuilders could not work either.

Pattern Makers emerged as an important part of the engineering supply chain in the mid 19th century. The increasing number and complexity of steam engines meant that demand was decreasing for forged components, and increasing for casting, because the finished metalwork had fewer faults, and thus enabled more complex pieces to be created.³²³ The switch from iron to steel added further impetus to the change and so the Pattern Makers emerged as a skilled artisan group. Their work required accuracy and skill, and the ability to read and interpret plans and other documentation. The patterns had to be made by hand and had to be sized to take account of the shrinkage of the molten metal. This required detailed knowledge both of three-dimensional measurements, as well as the differing behaviours of metals and alloys.³²⁴ They very clearly differentiated themselves from joiners, carpenters

³²³ There is generally no upper limit of the weight of a casting, different alloys can be used, complex models can be created, and smaller production runs are possible than with forging.

³²⁴ Pattern maker's shrinkage occurs after the solidification process when the casting is cooled to room temperature. This is due to thermal contraction. A shrinkage allowance must therefore be factored into the design at the start of the process. The pattern is made larger than the desired casting to compensate for this type of shrinkage. The shrinkage allowance varies by the type of metal but the pattern may need to be as much as 2.5% larger than the original part. Furthermore, different parts of the casting may require difference allowances. <https://www.haworthcastings.co.uk/news/shrinkage-in-sand-casting#:~:text=The%20degree%20of%20shrinkage%20depends,poured%20into%20the%20mould%20cavity.>

and other wood workers.³²⁵ In 1894, William Mosses conceded to the Royal Commission on Labour that he could not conceive of two trades less unlike than joiner and Pattern maker.³²⁶ Despite this, the United Pattern Makers' Association were determined to demarcate their work from that of joiners and carpenters.³²⁷ This is a clear case where an occupational group defined itself as separate, seeking to maintain that identity in the face of changing work practices. The Pattern Makers had originally been part of the Amalgamated Society of Engineers (ASE) but broke away from it in 1872 on the grounds that it was not paying sufficient attention to the requirements of smaller, artisan groups like theirs. This was later to prove significant in this dispute.

Iron Founders, also a highly skilled workforce, seemed to have much greater organisational difficulties than the Pattern Makers. This derived partly from the fragmented nature of the workforce, there being workers in different metals (iron, copper, brass), and differences across geography. The most highly skilled group, the heavy Iron Founders, tended to be employed in areas of relatively strong trade unionism such as the west of Scotland and the North East of England, but even they were liable to deductions from their wages (substantial at times) if faults occurred in the castings, even if not the fault of the Founders themselves. The work itself required judgment and attention to detail, as much if not more so than that of the Pattern Makers, but the unpleasant and sometime dangerous working conditions combined with the physical aspects of the work seems to have mitigated against their being seen as a craft union by their peers, at least in comparison with the

³²⁵ See the General Secretary of their Union, William Moses, and his evidence to the Royal Commission on Labour, 1894. Royal Com. on Labour Minutes of Evidence, Appendices (Group A) Volume III. Mining; Iron, Engineering and Hardware. C.6894-VII. P139.

<https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1893-070299?accountid=12860>

³²⁶ Ibid, p 142, in response to Question 22507.

³²⁷ Alistair Read, p49.

Pattern Makers. The 1894 strikes therefore involved two closely matched but very differently organised workforces, both of whom considered their work as craft, not labouring, and both critical components in the supply chain. The disputes, although they took place simultaneously, were carried out as separate actions and caused work to be lost across the engineering and shipbuilding sectors. The Board of Trade estimated that the disputes, involving as they did at most 2,000 workers, kept some 14,000 others out of work.

Early in March 1894 the Iron Founders of the Tyne, Wear, and Tees districts demanded an increase of 3/6d per week, the equivalent of the reduction in wages imposed on them in 1892. The employers rejected the claim, and the strike began on 21st March. Around 1000 unionised workers struck, and it was claimed that an additional five hundred or so non-unionised workers also joined.³²⁸ Foundries were located across the North East, and sites on the Tyne, Hartlepool, Stockton, and Middlesbrough were affected. A couple of weeks later the Pattern Makers also voted to strike, again in support of a claim for an increase of 3/6d per week (a typical Pattern Makers weekly wage was around 33/6d (see Figure 26 below)), which was also rejected by the employers.³²⁹ The Labour Gazette reported that 400 Pattern Makers struck on the Tyne and the Wear, fifty in Hartlepool, forty five at Stockton, and thirteen in Middlesbrough. By mid-April, there were around 295 Pattern Makers and 1,550 Iron Founders on strike. Within a week, the Iron Founders reduced their claim to 2s a week, but this was also rejected by the employers.

³²⁸ Clarke, p 324.

³²⁹ Daily Gazette for Middlesbrough, "*Strike Of PatternMakers In The North.*" 9 Apr. 1894. British Library Newspapers, link.gale.com/apps/doc/R3211938911/BNCN?u=unn&sid=BNCN&xid=6d207c59. Accessed 30 Dec 2020.

At first, the effect on the supply chain was minimal, but as the work in hand in engine shops reached completion, the absence of new castings halted engine building, and engineers were gradually let go. The Amalgamated Society of Engineers (ASE) leadership was prepared to help the Pattern Makers, with a report on April 12th that the ASE was to hold a ballot.³³⁰ Locally, however, ASE members refused to do so and continued working, especially along the Tyne, as did a number of Pattern Makers. Mr Moses of the Pattern Makers was reported as saying that “they were labouring under exceptional difficulties, because thirty or forty Pattern Makers were still at work on the Tyne, refusing to come out at the bidding of the Executive Council.”³³¹

The effects on shipbuilders were marked. By April 19th orders for pressings were being placed outside the region, with the expectation that this would continue if the dispute was not resolved.³³² The Union took steps to dissuade employees in firms in Leeds and Bradford from taking on the work, and they appeared to have been at least partially successful.³³³ By July, Doxford’s in Sunderland had paid off nearly 2,000 men, and in other yards men were being laid off daily.³³⁴ The number of unemployed members of the Boilermakers' and Iron Shipbuilders' Society in the affected districts had risen from 12.9 percent to 17.2 percent by the end of June, and

³³⁰ Daily Gazette for Middlesbrough, "*The Engineers' Trade Dispute.*" 12 Apr. 1894. British Library Newspapers, link.gale.com/apps/doc/R3211498766/BNCN?u=unn&sid=BNCN&xid=7c94dc05. Accessed 30 Dec. 2020.

³³¹ Daily Gazette for Middlesbrough, "*The Moulders' Dispute.*" 2 July 1894. British Library Newspapers, link.gale.com/apps/doc/R3208249195/BNCN?u=unn&sid=BNCN&xid=2ddd12ff. Accessed 30 Dec. 2020.

³³² Daily Gazette for Middlesbrough, "*Effect Of The Moulders' Strike.*" 19 Apr. 1894. British Library Newspapers, link.gale.com/apps/doc/R3211499148/BNCN?u=unn&sid=BNCN&xid=88993d01. Accessed 30 Dec 2020.

³³³ Daily Gazette for Middlesbrough, "*THE IronMoulders' Strike.*" 21 Apr. 1894. British Library Newspapers, link.gale.com/apps/doc/R3211499265/BNCN?u=unn&sid=BNCN&xid=76dea6f5. Accessed 30 Dec. 2020.

³³⁴ See for example Reynolds's Newspaper (London, England), Sunday, July 15, 1894; Issue 2292, front page. British Library Newspapers, Part I: 1800-1900.

by the end of July to 43 percent.³³⁵ The knock-on effect on unskilled and labouring workers was even more profound.³³⁶ Repeated efforts were made to arrange a settlement, but both sides stood firm.

A meeting was held at the Albany Restaurant in Middlesbrough on Saturday 30th June, as two hundred men at the Central Marine Engine Works in Hartlepool were laid off due to the lack of castings. Eleven trade societies and six trades councils (but not the disputing parties) attended and a resolution passed that a conference between the Employers' Associations and the Iron Founders' and Pattern Makers' Unions should be held under a neutral chairman.³³⁷ The Reverend W Moore Ede from Gateshead was suggested and after interceding arranged a meeting between the two sides.³³⁸ However, the employers offered no wage increase, and instead proposed a Conciliation Board under a neutral third party. The strikers overwhelmingly rejected this. The strikes continued to impact the local economy, including the cancellation of a large passenger steamer from a German shipping firm, an order that was moved to the Clyde.³³⁹ A meeting of Iron Founders' delegates in early August saw the first signs of a resolution appear, as both sides were now in favour of a board of conciliation, but they differed as to what the board should consider.

³³⁵ Information gathered from the 1894 report on Strikes and Lockouts by the Chief Labour Correspondent of the Board of Trade. <https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1895-073250?accountid=12860>

³³⁶ The North-Eastern Gazette reported (July 23rd 1894) that the National Union of Gasworkers and General Labourers Society was paying out 10s per week not only to members of the Union who were laid off but also to other labourers who were similarly affected (but not Union members).

³³⁷ The North-Eastern Daily Gazette (Middlesbrough), Monday, July 02, 1894. British Library Newspapers, Part II: 1800-1900.

³³⁸ The North-Eastern Daily Gazette (Middlesbrough), Thursday, July 12, 1894. British Library Newspapers, Part II: 1800-1900.

³³⁹ Daily Gazette for Middlesbrough, "*The Moulders' Strike*." 20 June 1894. British Library Newspapers, link.gale.com/apps/doc/R3210343785/BNCN?u=unn&sid=BNCN&xid=47aa3ecd. Accessed 30 Dec. 2020.

On August 29th ballot papers were issued, asking whether to set up a conciliation board to discuss Iron Founders' wages. Some Founders had obtained work in other districts during the strike, but of about 1,500 who originally came out on strike, 1,161 voted, a majority of 257 in favour of acceptance.³⁴⁰ The Iron Founders returned to work from September 3rd as quickly as the foundries could take them back. Overall, the Iron Founders Union spent £11,700 3s 4d on 'dispute benefit', more than twice any previous year.

The Pattern Makers' dispute, however, continued, the men declining to settle on the same lines as the Founders. They voted 256 to 58 in October against submitting their claim to arbitration. However, fraught relations with other unions proved to be their Achilles Heel, as members of the ASE and other non-union workers continued to produce moulds, so there was sufficient work being produced to limit the effect of their strike. Finally, after a vote in November (235 to 86) they returned to work at the old rates of pay.³⁴¹ The strike had lasted 33 weeks. The consequences of both strikes were significant. By September, shipbuilding on the Tyne was at a very low ebb, the Iron Founders strike having dealt a 'final blow' in creating a full-scale depression in the industry.³⁴² Shipyards in Wallsend had been closed indefinitely, and the Tyne Iron Shipbuilding Company as well as the Edwards Shipbuilding Company were about to do the same, as was the Howden Yard of the Palmer Company. The same paper also reported that two ironworks in Sunderland were to close for good as a result of the strike. The Board of Trade's Labour Gazette reported in August 1894 that unemployment in engineering and metal trades across

³⁴⁰ The North-Eastern Daily Gazette (Middlesbrough, England), "*Northern Notes*". Saturday, September 01, 1894.

³⁴¹ The North-Eastern Daily Gazette (Middlesbrough, England), "*End Of The Pattern Makers Strike*" Monday, November 26, 1894.

³⁴² The Newcastle Weekly Courant (Newcastle-upon-Tyne, England), Saturday, September 8, 1894; Issue 11460. British Library Newspapers, Part I: 1800-1900.

the country was up from 9.0 percent to 9.7 percent as a result of this dispute, and in shipbuilding it rose from 13.2 percent to 17.3 percent.³⁴³

In his summing up of the dispute, the General Secretary of the Pattern Makers was scathing of the lack of support from other unions, and also the sixty or so 'society and non-society' men he identified as working on the Tyne for 'the most powerful employer in the employers' association' (this probably refers to Armstrong's). Those men were, he said, "unwilling to share in the battle, [but] would have been quite delighted to have taken their portion of the spoils".³⁴⁴

Mosses also argued that there was a distinct information imbalance between employer and workers.³⁴⁵ Employers were able to argue against wage increases on the grounds of profitability and the general state of trade, but the Union had no means of knowing what profits the employers made, even in limited liability companies where (vague) balance sheets and dividends were published. The only measure the Union had of the state of the employers' business or the broader state of the economy was the demand for their labour. Mosses argued that late 1893 and early 1894 saw such a demand for Pattern Makers that unemployed members were brought into the North East to satisfy demand. He recognized this was a false picture of the state of the engineering and shipbuilding industries, but they chose to use it as the basis of their demand for wage increases.

Employers could see information on Trades Unions' funds, which were freely available through the Union's annual returns to the Board of Trade. This gave power to employers as they could gauge the strength or otherwise of the unions. The final

³⁴³ Labour Gazette, August 1894, published by the Board of Trade, p 225-6, Economic History Digital Collection, <https://lse-atom.arkivum.net/uklse-dl1eh010010020008>.

³⁴⁴ 1894 report on Strikes and Lockouts by the Chief Labour Correspondent of the Board of Trade. p334.

³⁴⁵ 1894 report on Strikes and Lockouts p336.

cause of failure, he argued, was their inability to completely close down other pattern making shops. They had support from as far away as Bradford and Leeds, but not from shops in Halifax and Huddersfield. The fact that other wood workers could also do (some of) their work compounded the problem.

It is useful at this point to take note of the Trade Union recognised rates of wages and working hours across the areas and trades affected by the dispute. The information in figures 25 and 26 comes from Board of Trade data and is not therefore necessarily what was being paid. There is little meaningful difference between the Newcastle and Sunderland rates, nor their working hours. It would be useful to see what the rates for boiler makers doing repair work were, as it would reflect on the potential benefits of a flexible approach to employment. ³⁴⁶

Figure 23 – Board of Trade data on wages 1894

Pattern Makers		Iron Founders		ASE				
				Turners	Fitters	Smiths		
Weekly Wage	Hours	Weekly Wage	Hours	Weekly Wage	Weekly Wage	Weekly Wage	Hours	
33/6	53	32/6	53	31/6	31/6	31/6	53	Newcastle
33/6	53	31/6	53	31/6	31/6	31/6	53	Sunderland

Figure 24 - Board of Trade data on wages 1894

Boilermakers (new work, not repairs)								
Platers (Heavy)	Platers (Heavy)	Platers (Light)	Platers (Light)	Riveters	Riveters			
Boilershops	Shipyards	Boilershops	Shipyards	Boilershops	Shipyards	Hours		
37/-	34/-	35/-	34/-	34/-	32/-	53 or 54	Newcastle	
37/6	34/-	35/6	34/-	34/-	32/-	53	Sunderland	

By comparison, Figure 27 below shows the wages paid by the Annfield Plain Co-operative in April 1894.³⁴⁷

³⁴⁶ Table created from information contained in the Labour Department (1894-5) of the Board of Trade Abstract of Labour Statistics, C7900, p 98-102.

³⁴⁷ Annfield Plain Industrial Co-operative Society Limited, *Jubilee Souvenir: 1870-1920*, p 81. Author's Collection.

Figure 25 – Annfield Plain Co-op Wages 1894

	Branch Manager	First Countermen	Drapery Dept	Tailoring	Millinery (Female)	Hardware (Male)	Hardware (Female)	Shoemaking	Butchering
Minimum Wage per week	32/-	28/-	28/-	40/-	15/-	26/-	12/-	26/-	30/-
Maximum Wage per week	40/-	32/-	36/-	40/-	20/-	32/-	16/-	35/-	36/-

There appears to be some uniformity across the roles, not just within the roles, which might suggest that elements of the disputes were as much about role differentiation as anything else, a good indicator of the desire for status maintenance amongst these workers. The rates being paid by the Co-op can be seen as attractive when considering the nature of shipbuilding work, outdoors, physical and potentially quite dangerous.

Some conclusions can be drawn. Firstly, it seems to have been difficult for the Craft Unions to achieve full participation in the strike as each branch took their own view on participation, an indication that membership was secondary to local expectations and interests. This was despite the (apparent) uniformity in wage levels and therefore the uniformity of potential benefit, which runs counter to any idea of class solidarity overcoming sectional or community interest. Secondly, some reports claimed that strikers could easily find other jobs. This echoes the flexible approach by both employers and employees seen in the Scotia Works and R W Hawthorn case studies. Castings were acquired from companies not affected by the dispute, allowing at least some businesses to keep functioning, and when the final resolution came it took some time to move affected businesses back up to full production, at least in part because of the time it took to bring their old employees back. While accurate numbers are not available, skilled workers seemed to have relatively little difficulty in finding alternative work.

There was a lack of co-operation and co-ordination between the Pattern Makers and the Iron Founders and their representative unions, especially as the employers actively worked together as an Association. This extended to a failure to work with other unions. This was partly a reflection of the internecine disputes between craft unions about the nature of 'craft', and partly a reflection of the way in which community considerations were effectively privileged over other interests. Arthur Henderson, the Iron Founders' District Delegate was a tough negotiator, but he was profoundly opposed to any attempt at a confederation of unions.³⁴⁸ This may explain why the Iron Founders and the Pattern Makers, although striking for the same result from the same employers, effectively held two separate strikes. The initial push for conciliation and arbitration came from the representatives of other unions affected by the dispute, rather than the disputing unions themselves, a consequence of the knock-on effect on the rest of the supply chain and the resulting losses of employment, both short- and long-term. It was clearly in the interests of the other Unions to press for a resolution as they were funding their laid-off members and those who had lost their jobs.

This was a dispute that contained many echoes of the themes of this dissertation, notably the primacy of local community interests in decisions about participation or support for the action, and the pressure to settle coming from other unions who were affected. The apparent ease with which some strikers found alternative employment, as well as the fact that members of other unions were prepared to produce moulds to maintain their members in work, shows both a flexibility and a pragmatism far removed from any notions of class solidarity. The developing interconnectedness of the supply chain meant that the effects of the

³⁴⁸ Clarke, p 324.

dispute were quickly and widely felt in a way that may not have been possible a couple of decades earlier. The fragmentary nature of the disputes, the lack of coordination between Unions, the desire to hold onto 'craft' status and to deny it to others all indicate that these groups were, knowingly or otherwise, pushing against the inevitably increasing division of labour and changes in technology, an approach that sowed the seeds of sclerosis.

1894 Platers Helpers Disputes

Platers were skilled craftsmen, their job requiring them to make templates, read plans, mark up steel plates and determine the exact amount of bending and shaping required to fit each plate into its relevant part of ship construction, and then to assemble the plates together on site. Even the development from the mid-1880s of hydraulic machinery to assist with metal bending did not diminish their craft status, as they were still required to direct the usage of these machines. Their helpers and assistants, whose role of hammering and bending the metal was being replaced by the hydraulic machine, felt the real changes. They were increasingly being reduced to labourers feeding the machines under the direction of the Plater, instead of being part of a cooperative team endeavour, the rewards of which were shared amongst the group.

Generally, the helpers were taken on by the foreman of the firm, but once employed their continued employment was at the mercy of the Plater they were working with, who had almost complete power over them. For most other jobs the Foreman was the ultimate judge and jury. Clarke quotes Alex Wilkie of the Shipwrights' Union as saying that the 'foreman when taking on workers had to judge as to whether the men suit him or not'.³⁴⁹ One of the long standing grievances of the helpers was that, even though taken on by the firm, they were not thereafter subject to their procedures and processes, only the whims of the individual Platers, up to and including instant dismissal.³⁵⁰ Like others, the Platers were subjected to wage reductions and unemployment during the 1870s and 1880s, so it is not surprising that given the co-operative nature of the Plater/helper working process, they sought

³⁴⁹ Clarke, p 304.

³⁵⁰ See the evidence of Owen Wade, District delegate of the Tyneside and National Labour Union to the Royal Commission on Labour, 1894. Pages 24-26 of the Minutes of Evidence, Group A, C6894.

to pass these reductions onto the helpers. This led to considerable bad feeling between the two groups, lasting into the 1890s.³⁵¹

The list of disputes in shipbuilding across the UK in 1894 was long, with 75 stoppages, involving over 10,000 workers accounting for 7 percent of the strike total, and 3 percent of all the people involved in disputes across the UK. A considerable proportion of these disputes arose not between workers and their employers, but between the Platers and their helpers, the latter being employed by the Platers and paid by them from their piecework earnings.³⁵²

Between 18th March and 23rd May 1894, 32 Platers' helpers in Wallsend came out seeking an increase of one man in their squad strength. This indirectly affected 350 other men. The dispute was referred to arbitration, and it was decided that on plating above a certain weight (to be determined by the employers), an extra man would be added. At Thornaby, a similar dispute between 23rd April and 13th June involved 126 helpers directly and affected 426 other workers. As at Wallsend, the Platers' helpers requested an extra man. Whilst the dispute was underway, apprentices did the work of the helpers. This led 66 other labourers to come out on strike from 22nd May until June 8th, when the apprentices were withdrawn. Again, the resolution was to provide the extra help. Other stoppages by the helpers looking for similar increases in resources took place at Blyth and Sunderland, both of which were successful in securing the extra resources.

³⁵¹ Alistair Read, p 71.

³⁵² The North-Eastern Daily Gazette (Middlesbrough, England), Tuesday, February 20, 1894. British Library Newspapers, Part II: 1800-1900. The platers had reduced the helpers' wages by 5 percent. The strike ultimately affected nearly 6000 men in Belfast. This dispute eventually saw a resolution whereby a system of direct payment to the labourers was introduced by the firm.

These disputes had at their core the working relationships between Platers and Helpers, with the latter dependent on the former for both work and wages. This was exacerbated by the often-used structure of paying the Platers' piece rates, whilst the helpers were on time rates. This incentivised the Platers to do more work, putting more pressure on the helpers and earning the Platers more money, but without financial benefits to the helpers. This had advantages to the employer, effectively passing management to the Platers. It also suited the Platers because they could maximise their earnings by controlling their workforce directly, rather than relying on foremen. But the 'taskmaster' and 'serf' relationship was unsatisfactory to both Plater and Helper. There were cases where Platers had not paid their Helpers, but where the Platers were members of the Boilermaker's Union they were fined or even expelled from the union.³⁵³ For some time there had been concern from employers and unions about timekeeping and absenteeism, especially due to excessive alcohol consumption. Unfinished contracts, especially when they resulted in helpers not being paid, and pressure for higher payments when work was urgently required to be finished, were also concerns. The differences in wages between the higher paid, craft-based workers and the rest meant there was less incentive for skilled workers to work a full week, whilst for lower paid workers they needed to work a full week but were stopped from doing so by their skilled colleagues' absences. Unions were often involved in policing this situation. The Executive Council of the Boilermakers' Union resolved that members losing more than one day a week when they could be at work would be fined 5s per day.³⁵⁴ This reduced some of the problem, but as we shall see when we reach the 1915-18 period it never went fully away. The Boilermakers' Union

³⁵³ See Clarke, p 298.

³⁵⁴ See Clarke, p 297.

took the lead in negotiating a wages agreement with the employers, and on 4th July 1894 Robert Knight signed an agreement with the North East Shipbuilders, which stipulated that changes to wages could not be made until six months after any previous change, and that such changes would be limited to 5 percent either way. It also included a dispute resolution mechanism, and a formal recognition that, in the event of 'labour saving appliances' being brought in by the employers that rates of pay for these appliances should be determined by a joint committee of Boilermakers and Employers.³⁵⁵ Significantly, the national membership of the Society was asked to vote on the agreement, and nationally they approved it, 15,984 for, 11,840 against. But in the North East branches more than 77 percent of members voted against it - 2,166 voting for, 6,987 against. The reason for this rejection seems to have been a reluctance to give up the opportunity for temporary advantage when circumstances were in their favour.

The Platers effectively controlled their own workload and workforce, acting as subcontractors, reducing the ability of management to match supply to demand and respond to upswings in demand. The Boilermaker's Union played a critical role in maintaining what they saw as craft discipline, often working with employer organisations seeking mutually beneficial ways of working, but often to the detriment of other workers. Their desire was to maintain jobs through restricting access to the 'craft', but as plating changed with the introduction of steel and mechanised riveting, the Union recognised that to maintain their position as a 'craft' they needed to pass on the responsibility for resourcing and managing. At the same time, the Helpers and other non-craft roles were seeking to emulate the organisational power that the

³⁵⁵ Clarke, p 340.

craft unions had, so as the division of labour became more pronounced the plater/helper relationship inevitably changed.

This dispute, or rather this series of disputes evidences several recurring themes in this thesis, highlighting the complex relationship between those sections of the workforce that considered themselves as 'craft' workers and those left outside the fold, and the way in which the increasing complexity of work and the gradual introduction of machinery compromised these relationships. It also points towards the struggles to maintain employment and status, and to reshape working practices to adapt to the changing world. This period can be characterised as one of competition for control over working practices, in which the Craft Unions sought to maintain their dominance through temporary alliances with the employers and retain power and status over the workforce through control of the apprenticeship system. At the same time, changes in machine technology and increasing complexity of the products meant that divisions of labour became wider, and the need to move away from old working practices became more urgent. This also enabled the rise of the semi-craft and other manual workers who, recognising the power of organisation were able to push for better recognition of their roles. The consequence of this was the need for better 'management', with the decline of the subcontractor model (plater/helper) and the rise of the foreman. But these changes were uncomfortable for all concerned, and the growing pains were often expressed through industrial disputes. The effects on shipbuilding and engineering in the North East were real, even as similar challenges were being met in other regions.

Industrial Disputes 1915 – 1918

Labour 'patriotism', particularly in the engineering and shipbuilding sectors, helped produce materiel critical to the war effort.³⁵⁶ But concerns were expressed in Government, especially in 1915, about the efficiency of the shipyards and some of the attitudes towards work. A report dated 1st May 1915, and written on behalf of the Chancellor of the Exchequer, David Lloyd George, enquired into 'Reports to the First Lord of the Admiralty on the Effect of Excessive Drinking on Output of Work on Shipbuilding, Repairs, and Munitions of War'.³⁵⁷ This thirty page document is very strong in its condemnation of workers' attitudes on the Clyde, the Tyne (as well as Sunderland and Hartlepool), and Barrow. The investigators were part of a group of 33 appointed by The Home Office, 17 of whom were sent to various places on the Clyde, 6 to Newcastle and the Tyne, 4 to Barrow, and 2 each to Sunderland, Stockton, and West Hartlepool, respectively, between 1st and 3rd April 1915.

Demarcation still appeared to be a problem on the Clyde and on the Tyne, and mention is made that output was still affected through workers refusing to carry out tasks that they did not consider to be theirs. The shortage of workers was said to have led to the engagement of men who would not usually be given employment and who would 'be likely to take more drink than normal workmen'.³⁵⁸ The employers provided details of working hours for platers, riveters, holders-on, heaters, angle-iron smiths, caulkers, and drillers, all jobs that were critical in ensuring that the yards

³⁵⁶ For a detailed study of this topic see David Swift, "*Patriotic Labour in the Era of the Great War*", PhD Thesis, University of Central Lancashire, October 2014., [http://clock.uclan.ac.uk/11810/1/Swiftpercent20Davidpercent20Finalpercent20eThesispercent20Submissionpercent20\(Masterpercent20Copy\).pdf](http://clock.uclan.ac.uk/11810/1/Swiftpercent20Davidpercent20Finalpercent20eThesispercent20Submissionpercent20(Masterpercent20Copy).pdf).

³⁵⁷ <https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1914-018612?accountid=12860>

³⁵⁸ There is an extensive examination of the politics of temperance during the war in Jerry White, "*Zeppelin Nights – London in the First World War*", London, 2014, p47-68

had enough work to keep them fully occupied, so their working practices affected everyone else. The figures covered 48 firms, 15 on the Clyde, 27 in the North-East, and 6 at Birkenhead, Barrow, and Hull, all major shipbuilding areas. They stated that their figures were the actual hours worked and showed that these were less than the hours of a normal week in peacetime (fifty-three or fifty-four, depending on the district). Some 49 percent of the workers were working less than 45 hours a week.

Munitions of War Act 1915

The Munitions of War Act 1915 was a response to the 'Shell Crisis' that arose from inadequate supplies of artillery shells and other munitions to the Western Front. The Act and a series of subsequent amendments forbade strikes and lockouts and replaced them with a compulsory system of arbitration.³⁵⁹

The basic arbitration provisions were simple - any difference existing or appearing to exist between employer and employee, or between any two or more classes of employee, providing that difference was covered by the Act, and if the parties could not resolve it themselves, that difference was to be reported to the Board of Trade, who would take any expedient steps to resolve the matter, any resolution being binding upon both parties. The Act was careful to impose matching responsibilities on employers and employees, the former being forbidden to lock out anyone involved in a dispute as defined under the Act; and the latter not able to strike unless the dispute had been reported to the Board of Trade, and twenty-one days had elapsed without the Board of Trade invoking the settlement process.³⁶⁰

Arbitration Boards were not new. Between 1897 and 1906 the various North Eastern boards reviewed some five hundred and sixty cases, only ten of which had

³⁵⁹ <https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1914-018430?accountid=12860>

³⁶⁰ See Henry H Slessor, Standing Counsel to the Labour Party, *"The Labour Party Opinion on the War Munitions Act"*, London 30th July 1915, p 4.

begun as strikes. In 1896, Parliament passed the Conciliation Act, giving the Board of Trade the power to intervene in disputes.³⁶¹ However, the provisions of the act were mostly voluntary, which meant that the Munitions of War Act was the first time conciliation became legally enforceable.

³⁶¹ In 1894 The New Zealand Government had passed the Industrial Conciliation and Arbitration Act, generally considered to be the first compulsory system of state arbitration. It gave legal recognition to unions and enabled them to take disputes to a Conciliation Board, consisting of members elected by employers and workers. If the Board's decision was unsatisfactory to either side, an appeal could be made to the Arbitration Court, consisting of a Supreme Court judge and two assessors, one elected by employers' associations and another by unions. https://en.wikipedia.org/wiki/Industrial_Conciliation_and_Arbitration_Act_1894

Tyne and Wear Branch of the Operative House and Ship Painters and Decorators v the North East Coast Ship Repairers Association.

The First World War inevitably saw the focus of North Eastern shipbuilding and engineering shift towards production of war materiel. A lot of engineering and shipbuilding jobs remained on the reserved occupation list, so production continued as before the war in most yards and shops. The final 'fit out' of any ship included the painting of the hull, deck, and super structure, and from 1915 onwards the technique known as 'dazzle' was employed on British ships.³⁶²

This dispute was between the Painters and the Ship Repairers as to which trade should paint the camouflage, or 'dazzle' as it was colloquially known, onto ships intended for war use. The request for arbitration came in a letter dated 23rd January 1918 from the Tyne and Wear District Committee of the Operative House and Ship Painters and Decorators.³⁶³ The Union claimed that in every shipyard except for those under the control of the North East Coast Ship Repairers' Association, dazzle painting was the responsibility of skilled workers, and therefore they had the right to claim it as theirs. The employers claimed that semi-skilled workers had always painted the outsides of ships, but the union claimed special circumstances due to the war and argued they were justified in claiming it as skilled work.

³⁶² For more details see Hugh Murphy and Martin Bellamy, *The Dazzling Zoologist - John Graham Kerr and the Early Development of Ship Camouflage*, *The Northern Mariner/le marin du nord*, XIX No. 2, (April 2009), 171-192

³⁶³ File IC892, part of folder LAB 2/93/IC892/1918, National Archives. Accessed 19th October 2017.

Picture 15 - Dazzle-painted ships in Liverpool Docks, 1915 ³⁶⁴



Charles Doughty, Barrister, was appointed as Arbitrator on 26th February, and on 15th March he visited the Bull Ring Docks of Messrs Smiths Dock Company of South Shields and watched dazzle painting on several ships. ³⁶⁵ He then met representatives from both sides as well other affected unions and heard their representations. He wrote to the Commissioner on 18th March denying the Union's claim that the painting was skilled work and communicated this to the parties on 22nd March. The dispute echoed problems between the painters and labourers in the 1890s. Guidelines were agreed between the two sides at the Hebburn shipyard, including that the labourers would paint the first coat of paint no matter what the colour, and the second and succeeding coats if they were red; whilst the painters

³⁶⁴ Displayed in the Liverpool Maritime Museum.

³⁶⁵ In 1883, due to lack of space at their yard in South Shields, Edwards and Sons, shipbuilders, purchased Collingwood's dry dock at the Bull Ring. The yard was speedily upgraded, involving the formation of a new river frontage and the construction of two new docks that replaced the old dock. The first of these new docks was completed in 1885, the second in 1889. In 1893, J and G Edwards acquired Hepples yard (previously Fawcus's yard), which lay to the south, then amalgamated with Smith's yard to the north in 1899, forming (Smith's Dock Co. Ltd.). Another graving dock was opened at the Bull Ring Yard in 1910, and one of the two early Edwards' docks was extended.
<http://www.twsitelines.info/SMR/2132>.

would do second and subsequent coats in any colour other than red.³⁶⁶ It would seem from this precedent that the Painters did at least have a case, assuming that the dazzle painting was a second and succeeding coat, especially as it was unlikely to be red. The critical point here is that these disputes still occurred twenty-five or more years after agreements, at least in principle, had been made.

This dispute was either a case of opportunism by the Union to take the work, or by the North East Coast Ship Repairers to do the opposite. Either way, in the context of a war, and for what was in reality a relatively minor piece of work, it does seem to be a rather petty 'land grab'. It is indicative of the sclerosis that was by now endemic in the engineering and shipbuilding trades in the North East that a demarcation dispute where an agreement had been reached could still be disputed nearly thirty years later in war time. The timing of this dispute also calls into question the motivation behind it – 'dazzle painting' was not a new thing, as can be seen from the Liverpool painting, so why did it take until early 1918 to emerge as an issue? The documents are unclear on motivations, but whilst neither side emerges with especial credit, it is challenging to see this as anything other than a craft 'land grab' from unskilled workers, reminiscent of the relationships between the two communities some 30 years previously and reflecting a situation that does not seem have been resolved during that period. It also reflects badly on the employers who had failed to create the circumstances under which there was no need for the dispute to have occurred. The desire to take or retain control of work tasks, even at the expense of other workers, indicates that status, control, and ultimately self-interest still lay at the heart of (some) worker and thus community relationships.

³⁶⁶ Clarke, p 321.

Electrical Trades Union and Sir W G Armstrong Ltd 1916

This dispute arose in late 1915 and centred on the completion of HMS Canada.³⁶⁷ HMS Canada was being finished (the hull and superstructure having been built at Elswick) at the High Walker Yard, some four miles downstream from Elswick, where HMS Malaya was also under construction. Armstrong's came under pressure from the Admiralty to speed up the completion of HMS Canada, so they took the decision to redeploy some electricians from the Walker yard who were working on HMS Malaya to work alongside the Elswick electricians (who were working on HMS Canada) to expedite the work. The Walker electricians raised a complaint, claiming that it was 'a custom of the Tyne if, in the course of building a ship, a shipbuilder moves it from one yard to another he (*sic*) is under an obligation to either travel men during the working day from the first yard to the second, or to shorten the working day for those transferred in the second yard to work on her by the amount of travelling time allowed to those from the first yard or pay double time therefore.'³⁶⁸ The Employers argued that no such custom existed.

The company had arranged for the Elswick electricians to be picked up from the Elswick yard and to travel by boat to the Walker Yard. At the end of the day, they were transported by boat back to Elswick. Their working day started with the boat trip, meaning they started at the Walker yard at 6.45am, rather than the usual local

³⁶⁷ File number IC2054, part of folder LAB 2/157/IC138/1916, National Archives, Accessed 19th October 2017.

³⁶⁸ Transcribed from the official file, LAB2/157/11, part of the collection LAB 2/157/IC138/1916, National Archives, Accessed 19th October 2017.

start time of 6.00am. They left at 4.15pm rather than the usual Walker time of 5.00pm, with their working day ending when they returned to Elswick. The journey took around forty-five minutes, so their effective working day was around an hour and a half shorter than those working in the Walker Yard. The Walker Yard Electricians Trade Union claimed that either their working day should be reduced to match that of the Elswick men, or that they should be paid double time for the time when the Elswick men were traveling.

The appointed arbitrator, Lynden Macassey KC, met the parties at the Central Station Hotel in Newcastle on 12th January 1916.³⁶⁹ His report found that it was usual practice for ships to be moved from one yard to another, and the relevant workers moved with them where required. He found that it was only because of pressure from the Admiralty to finish the work that the Walker men were assigned to work with the Elswick men on HMS Canada. In his verdict, Macassey argued that the union was unable to satisfy him that a 'general custom to the effect contended for' existed on the Tyne. He was also not satisfied that the employers had shown that moving men from Elswick to Walker was *not* indicative of such a custom existing. He went on to argue that the existence or otherwise of such a custom was an important question that would affect many more trades on the Tyne. On the evidence placed before him, however, he could not decide on the existence and therefore the terms of any such custom. He finished his judgement by saying that, even if such a custom did exist it had no relevance to the case under consideration because no men were dismissed as a consequence of the movement of workers, and because finishing the ship speedily was a matter of national urgency it should not apply

³⁶⁹ Macassey was an Ulster-born barrister and experienced arbitrator who had been involved in resolving the disputes amongst the munitions workers on the Clyde in 1915.

anyway. He concluded with the finding that the Union had failed to make good its claim.

Whilst Macassey's conclusion seems like a classic legalistic 'split the difference' arbitration judgement, more important is what the dispute says about working relationships. Agreements on working practices were commonplace in North East Engineering, as has been shown. They were generally clearly documented and widely distributed, so it is curious why the Union in this dispute was not able to rely on something more tangible than 'custom and practice'. On the other hand, it is reasonable to deduce from Macassey's finding that because the employers had *not* been able to prove that the custom *did not* exist that there had been some evidence in favour. This of course then begs the question as to why, if details of pay rates, dinner and travel allowances could be clearly documented for sea trials, different pay rates for working alongside fellow employees who had been 'shipped in' was not so documented.³⁷⁰ Was this for management or worker convenience? Given the evidence of flexible working practices shown earlier at the Scotia Works and at R.W. Hawthorn, it is difficult to avoid the idea that *not* formalising it had suited all sides. When the scale of the flexibility required in the case became significant, and the pressure from the Admiralty increased, all parties saw an opportunity. This seems to support the contention that working arrangements were often more flexible than has usually been understood, and that custom, practice and mutual convenience were frequently used to the benefit of employers

³⁷⁰ A 13-page document signed in January 1901 by R. Sinclair Scott and Thomas Biggart, Chairman and Secretary respectively of the Engineering Employer's Federation, and Alfred Sellicks and George N Barnes of the Amalgamated Society of Engineers. Spilt into nine sections the agreement was a detailed breakdown of the bonuses and working conditions for engineers who were required to working on board vessels undergoing sea trials. It covered specifics such as whether a bonus should be paid when the engines are not running, even if steam were up; and the rates at which they should be paid if required to live away from home during trials. Found in 1890-1970: minute books, circular letters, minutes of sub-sections, Tyne and Wear Archives EM.EN1

and craft workers. At the same time, this short termism was a material contributor to the sclerosis beginning to creep into institutions, because it failed to allow working practices to develop alongside new technologies and practices.

Armstrong Whitworth, Amalgamated Society of Engineers and the United Operative Plumbers and Domestic Engineers Association.

This dispute occurred between the two unions at the Walker Yard in 1916.³⁷¹ Work was being carried out on an ice-breaking ship and a dispute arose between the Amalgamated Society of Engineers and the United Operative Plumbers and Domestic Engineers' Association as to which workers should fit air and overflow pipes to two fore peak tanks.³⁷² The dispute went to arbitration and was found in favour of the Plumbers on the grounds that this work was agreed as their work on page 3, item 5 of the 1914 List of Apportionment.³⁷³

³⁷¹ File number IC 5573, part of folder LAB 2/107/IC5573/1916, National Archives, Accessed 19th October 2017.

³⁷² This probably refers to the Prince Edward Island – a ferry and icebreaker destined for the Government of Canada. <http://www.tynebuiltships.co.uk/P-Ships/princeedwardisland1915.html>

³⁷³ Tyne and Wear Archives, EM.EN1/5/12 "Apportionment of Engineers and Plumbers Work 1891-1928". There are four documents in this collection, dated respectively 1894, 1914, 1921, and 1928 (*there is no 1891 document so the title is incorrect*). The 1894 document, signed by the Engineers, Plumbers and Employers, consists of 26 sections defining the work to be done by each craft. The essential difference between them lay in the size of the pipes worked on – anything over 3" in diameter belonged to the engineers, 3" and under to the plumbers. The issue of who bent iron pipes was left to the discretion of the employers. By 1914 the document had been reduced to 20 sections, but the demarcations were clearer. The engineers had control of work on copper, cast iron and brass pipes, the plumbers on lead, wrought iron or steel pipes. The engineers had control of the installation of steam heating on war vessels, the plumbers on merchant ships. The engineers controlled all work on valves. Note 6 specifically limits the terms of the agreement to regulating work between engineers and plumbers only, 'and does not award it to either of the foregoing to the exclusion of other trades'. By 1928 the document was now entitled 'Demarcation Procedure Agreement and List of Apportionment'. It had added a 5 page, 14 paragraph demarcation process (for the Tyne only). The whole agreement was signed by the AEU, the Plumbers, the Tyne Shipbuilders, the NE Coast Engineering Employers (Tyne District), and the NE Coast Shiprepairers Association.

As with the dazzle painting disagreement above, this dispute centred around the interpretation of an extant agreement about which worker would perform certain tasks and would seem at face value to have been a relatively simple task to resolve. However, this would be to ignore some very considerable history between the ASE and the Plumbers, going back to at least 1890. Following a series of disputes between the two groups a conference was held to agree a list of the work to be done by either side. The list was agreed and was implemented in February 1891. However, within weeks issues there arose difficulties with the list at Palmer's shipyard and fitters in the engine shop and the shipyard went on strike for two months. An agreement was reached that the original list should remain in place everywhere except for Palmer's, and that a further conference should be held to resolve that. This took place over four months in summer 1891, with the fitters withdrawing their co-operation after a series of agreements on apportionment had been agreed. Eight fitters, members of the ASE, were reassigned to other roles by Palmer's, which resulted in an all-out strike by the ASE affecting 21 different engineering works, and 15 shipyards. This strike lasted until April 27th 1891, at which point the strikers returned to work under the terms of the original offer from Palmer's.

The ice-breaker dispute is not only a classic demarcation dispute, but also powerful evidence of a failure by both management and unions over a 24-year period to agree processes that would result in a sustainable working environment. Given the background enmity between the two unions, and the existence of the List of Apportionment, this is a dispute that should have never occurred. For the Plumbers, the increasing complexity of the fitting out process for ships was undoubtedly an opportunity. Fitting out also benefitted the joiners who, through a strong national organisation, were able to restrict the use of machinery to wood

preparation workshops and thereby maintain their craft rates for work on board.³⁷⁴

The Plumbers had been used by some employers in the latter part of the 19th century to encroach on some engineers' tasks.³⁷⁵ As with other disputes discussed above, this dispute is clear evidence of the sclerotic nature of working practices, and the failure of all sides to adapt as circumstances changed. The issues were not confined to one side or the other, and management failed to deal with demarcation issues before the work took place. They failed to plan the fitting out with the potential issues understood and scoped into the workload. This is a good illustration of management failing to take their responsibility to understand the need for change and to drive it through. Both Unions failed to utilise the agreed List of Apportionment to manage the situation. It has been shown earlier that flexible working approaches were convenient when it worked for the parties concerned, but this approach also opened the possibility of one or other party trying to take tactical advantage when it suited. This is what seems to have been happening here. The workers themselves come away with little credit, clearly intent on prioritising their own community interests. The Unions as institutions acted as representatives of their constituent communities, vehicles for their member's interests and failed to overcome years of rivalry.

³⁷⁴ McClelland and Reid, p 175.

³⁷⁵ McClelland and Reid, p 175.

The Division of Labour and the consequences

It can be argued that job insecurity was the reason for demarcation disputes. Whether in the 1890s or during WW1 demarcation was an ever-present problem. The changing nature of the role of the shipwright is an exemplar. In the days of wooden ship construction, shipwrights saw their job as a craft, with piecework and other forms of management control considered incompatible with the first-class execution of their job.³⁷⁶ Shipwrights used several approaches to maintain their position, including an insistence on a 7-year apprenticeship before entering the trade. This enabled them to keep control of labour availability and restrict it to those of whom they approved (often family and friends). Secondly, they consistently refused to accept any piecework, and refused to work with anyone who was not a union or society member. As each wooden ship was effectively a one-off build, and as most yards were small, there was little desire on the part of shipyard owners to challenge this situation. Shipyards were also 'open to view', so it would have been clear to the shipwrights (and anyone else) what the state of the yard's order book was, enabling them to match the speed of work to demand.

It has been argued that the nature of shipbuilding, where each build was a one-off construction, that the alignment of crafts into functional union groupings was in fact the best way to run a complex process.³⁷⁷ This makes sense as long as the functions are determined by the nature of the build. This cannot though be a fixed functional alignment that fails to take account of the changing nature of what is being built or new developments in technique, materials, or process. Restrictive practices

³⁷⁶ See Clarke p 25.

³⁷⁷ Paul L. Robertson, "Demarcation Disputes In British Shipbuilding Before 1914", *International Review of Social History*, 1975-04, Vol.20 (2), p.220-235

such as when one union grouping restricts the right to work on pipes of certain diameter and above to their members (see footnote 343) could not support or sustain an industry in the long run.

Union membership was therefore based on association with a specific craft, rather than any kind of industrial or class consciousness. In the early days of engineering and shipbuilding in the North East, it was custom and practice that determined who did what. As wooden shipbuilding declined and iron shipbuilding took over, the number of roles and trades required to complete the complex outfitting of these ships increased. As firstly iron and then steel became the main construction materials for shipbuilding, the shipwrights were still able to control their part of the construction processes, but as new shipyards were created in new districts such as the Tyne and the Clyde, shipwrights became more dispersed across the labour force. Their role became restricted to the making of full-size wooden templates and moulds for the iron plates that formed the hull. This meant that metal workers, the Boilermakers, Angle-Iron Smiths, Platers and Riveters became the dominant force in hull construction. They turned the plans into models, moulds, and templates into physical items, bending and shaping the metal and riveting it together to build the hull. The Boilermakers, who by the 1880s were probably the best organised industrial grouping in the country, had learnt some organisational lessons from the shipwrights. They too insisted on a time constrained (in this case 5 years) apprenticeship programme, they absorbed unskilled groups attempting to organise (the Caulkers were absorbed into the Boilermakers Union in the early 1870s), and they began to negotiate, at least at a district level, standard rates of pay. Manual labour and skills therefore still remained at a premium, but there had been a step change in the nature of the relationship between employer and employee. In metal

ship building the nature of the production process was highly fragmented in a way that was not the case with simpler, wooden ships. Joiners, plumbers, brass, and copper finishers became part of an increasingly disjointed workforce. No one group of workers could exercise control over the work process in the way the shipwrights had done. This fragmentation was not limited to shipbuilding, as steam locomotives and marine engines saw similar changes with the development of new types of boilers, turbines, new fuel types and other improvements.³⁷⁸ This had several consequences, including the nature of the wage relationship, with wages increasingly being paid to skilled workers to reflect the expenditure of labour on a piece of work, or by time for unskilled workers. This reflected the much higher capital requirements involved in new workshops and yards, and the necessary development of management oversight of technically complex assembly processes. In some of the larger firms, this went hand in hand with the separation of ownership and control using joint stock companies (see the discussions in chapter 2 above). But as with Armstrong's, Clarke Chapman and Palmer's, family and familial networks still retained powerful influence and often control. On the other hand, more hierarchical management structures did emerge, driven by the need to coordinate and control a diverse organisation and labour force. This structure was often complex, involving as it did not just individuals assigned a management role, but also control by some groups of workers over others. Some industries reorganized the division of labour through the introduction of new machinery, but in engineering pre-existing divisions were broken down into more detailed processes without necessarily introducing new machinery. New trades and skills were created to cater for these changes, thus

³⁷⁸ The literature on steam locomotives is, to say the least, extensive. A comprehensive discussion of the technical developments in locomotive technology can be found in Ken Gibbs, *The Steam Locomotive – An Engineering History*, (Stroud: Amberley Publishing, 2012)

creating new divisions of labour. Piece work can be seen as an attempt by employers to impose more direct control over the pace and quality of work, but it can also equally well be characterized as an attempt to price the work more accurately, enabling more work to be won. As Elbaum and Lazonick have argued, because British firms did not move to develop a corporate enterprise structure, they were unable to loosen control over craft unions' working practices.³⁷⁹ Losing this right to manage meant firms had less incentive to invest in newer technologies, and they continued, especially in shipbuilding and engineering, to build traditional products in a traditional way. In shipbuilding, hull construction still relied on custom and practice and the skill of the working teams in converting technical drawings into a physical entity. It was only when it came to the fitting out process that what we would recognise today as project management techniques were employed, and these were seriously constrained by the kinds of demarcation disputes such as that between Plumbers and Engineers discussed earlier (page 205). In engineering, some benefits of standardisation such as the use of British Standard Whitworth for screw threads enabled productivity and reductions in product variability, but working practices were still a constraining factor. Engineering and shipbuilding generally produced to order, which in times of strong domestic demand was advantageous and enabled them to export to a wide range of countries. At the same time, when tariff barriers increased and export markets developed their own manufacturing capabilities towards the end of the nineteenth century, the saturated nature of the British domestic market meant it was difficult for that market to substitute for the volumes of the export markets. The failure to invest and change production and management methods then began to catch up with these British firms as competitors took advantage.

³⁷⁹ Elbaum and Lazonick, p 6.

As has been seen with the Platers and Platers Helpers disputes, this lack of management control was beneficial to employers, but was at the least ambiguous for employees. The Platers were able to control the pace of work and use it to their advantage, whilst the helpers worked hard for part of the week and were then laid off for the remainder.³⁸⁰ The reliance employers placed on skilled craftsmen meant they effectively relinquished most of their authority over the methods used and numbers required. This approach, whilst advantageous in optimal economic conditions and with little in the way of productivity upside to be gained from adopting new ways of working, contained the seeds of decline, because it meant that in sub optimal economic conditions when, although this could not be foreseen at the time, the need for productivity improvements was highest and therefore when innovation should be at its peak the employer had effectively lost the ability to make changes. To push against that state of affairs risked industrial action; acquiescing in it reduced the firm to passivity in the face of change. It should be noted that after 1889 the Platers Helpers developed their own union and began to negotiate directly with employers. They won the passive support of the Boilermakers, who recognised that with the increasing complexity of work their priorities were to protect their own craft and not to worry about acting as masters over other, unskilled, workers. There were still groups in 1915 being managed and paid by other workers, rather than directly employed by the yard itself.

The increasing division of labour created more opportunities for demarcation disputes to emerge, the potential complexity of which is shown by the 300 headings

³⁸⁰ They were frequently found to be taking advantage of St Monday and St Tuesday, at least during good economic times. See Kenneth McClelland and Alistair Reed, *"Wood, Iron and Steel"* p166, in *'Divisions of Labour'* edited by Royden Harrison and Jonathon Zeitlin, University of Sussex, 1985.

in the shipwrights' claims for work vis-à-vis the joiners on the Wear.³⁸¹ These disputes had a number of root causes, with the desire to preserve jobs often outweighing wages in importance. Wages fluctuated with the state of trade, but maintaining a job was the best guarantee of being able to provide for hearth and home. This increasing division of labour inevitably led to a continuing reliance on craft skills and therefore demarcation. The structure of the work, the desire to maintain craft status at almost any cost, and the failure of engineering management to invest quickly enough in changing processes and adapting to new technology, meant that when market conditions changed post the end of WW1 the North East was not well positioned to respond.

Some social and economic historians have argued that the development of the managerial function was about the capitalist seeking to retain complete control over the means of production.³⁸² This is a perfectly valid *post-hoc* rationalisation of an economic relationship described within a conflictual model. The reality was probably a lot more prosaic, especially in an evolving sector such as engineering. Each development or advance required three elements, adaptation of existing skills, adaptation of existing processes, and adaptation of control mechanisms. These were the 'lines of control' over which management and labour either concurred or disagreed. Thus, to argue that 'capitalists' were only interested in control and profit and the 'labour aristocracy' sought to maintain craft skills at the expense of the unskilled is to ignore the technological imperative of change, as well as the imperatives of the market. In a marketplace with limited competition, and where each product, whether marine engine or battleship was a one-off, price can be dictated by

³⁸¹ Clarke, p 318.

³⁸² See for a summary of these arguments Joseph Melling "*Non-Commissioned Officers: British Employers and Their Supervisory Workers, 1880-1920*", *Social History*, Vol. 5, No. 2 (May, 1980), pp. 183-221.

the supplier. As technology advanced and as competition increased, particularly from abroad and where the barriers to entry were lower because they had learned from the 'first mover's' mistakes, increasing control of process and price became essential. Failure to grasp this either by management or the labour force inevitably led towards long term decline, although of course this could not have been foreseen by the participants at the time. This failure is symptomatic of institutional sclerosis, and it affected and ultimately condemned the engineering clusters of the North East of England.

A further level was added by the difficulty of finding a means to reach acceptable resolutions to demarcation disputes. The employers were, at best, reluctant to be involved as they saw their concern as securing and completing contracts. The parties to the dispute themselves were also often reluctant to involve the employers. Giving evidence to the 1894 Royal Commission on Labour, Mr Chandler and Mr Patterson of the Amalgamated Society of Joiners and Carpenters argued that the trades unions have never allowed the employer to 'upset the custom to suit themselves' by deploying workers to complete tasks that their skills would allow them to complete but who were not part of the agreed union.³⁸³ They recognised there were tasks that could be completed by shipwrights as well as by joiners, but neither side would accept the other side doing that work if it had by custom been theirs.

In the context of an economic environment in the 1890s where jobs could be lost very quickly with a drop in orders, it is understandable that job security was such a priority, but it seems much harder to understand it as a rational act in the context of war production. Witnesses to the Royal Commission on Labour were generally more

³⁸³ Royal Commission on Labour, 1894. Page 130 of the Minutes of Evidence, Group A, C6894.

interested in the topics of apprenticeships, hours of work and demarcation than that of wages.³⁸⁴ As we have seen with the 'Dazzle' painting dispute (page 198) there were situations where the employers were more concerned with the delivery of the contract than with observing precedents, but there were also disputes which seem to have been one group 'chancing their hand' and reviving long-running disagreements, such as the engineers and plumbers and their dispute over pipe fitting. The disputes discussed clearly indicate the ways in which demarcation served the short-term interests of different communities in seeking to preserve status and employment, usually at the expense of other communities. The unwillingness of employers to involve themselves was generally a tactical choice, as the costs would have outweighed the benefits, at least in the short term. Looking back, in the long term this zero-sum game benefitted no one other than competitive economies, resulting only in long term sclerosis and decline.

³⁸⁴ Minutes of Evidence, Group A (Mining, Iron, Engineering, Hardware, Shipbuilding, and Cognate Trades) of the Royal Commission on Labour, February 1893, C6894-vii

Chapter 4 - appendix 1

Chart 7 1894 Labour Disputes in the North East ³⁸⁵

Board of Trade No.	Place	Trades	Dispute	Began	Ended	Persons Affected	Duration in Days	Aggregate of Days Lost	Success or Otherwise for Workers	Mode of Settlement
434	Bill Quay	Apprentice Riveters	Against the introduction of new piece price list, involving a reduction of 15 percent	3/3	19/3	18	13	234	Unsuccessful	Submission
492	Jarrow	Apprentice Riveters	Against employment of apprentices brought in from another yard of the same firm	12/11	19/11	385	7	2695	Unsuccessful	Submission
441	Wallsend	Apprentice Riveters	Against reduction in piece prices	20/3	7/4	15	15	225	Part success	Negotiation
475	Tyne	Apprentice Shipyard Workers	Against reduced rate of wages arranged by Employers' Association and the Boilermaker's Society	5/9	24/9	272	17	4624	Unsuccessful	Submission
389	Stockton	Boilermakers	For advance in wages	28/5	29/5	60	2	120	Successful	Negotiation
414	Wallsend	Drillers	Piecework prices	5/6	7/6	20	2	40	Successful	Conciliation
397	North Shields	Fitters	For extra pay when repairing oil boats	8/2	16/2	10	8	80	Unsuccessful	Hands replaced
465	Hebburn	Fitters	Against refusal of extra rate while repairing an oil tank steamer	8/6	8/6	8	1	8	Unsuccessful	Hands replaced
449	Hartlepool West	Platers Helpers	Against working with men from another union	6/4	14/4	900	8	7200	Unsuccessful	Negotiation
491	Wear	Platers Helpers	For 6 men not 5 on a squad when punching and fixing shell plates above average weight	12/11	27/11	110	14	1540	Successful	Negotiation
432	Blyth	Platers Helpers	For employing 6 men instead of 4 when working bulb frames	22/2	3/3	10	9	90	Successful	Negotiation

³⁸⁵ Adapted from the 1894 report on Strikes and Lockouts by the Chief Labour Correspondent of the Board of Trade.
<https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1895-073250?accountid=12860>

454	Thornaby	Platers Helpers	For employment by platers of an additional man per squad	23/4	13/6	426	44	18744	Successful	Negotiation
453	Wallsend	Platers Helpers	For increase of shell squad by one man	18/4	23/5	382	30	11460	Successful	Arbitration
460	Thornaby	Platers Helpers	Against employment of apprentices to fill helper places when they were on strike	23/5	2/6	66	11	726	Successful	Negotiation
490	Jarrow	Holders Up	For share of work in cutting up an old ship	5/11	6/11	463	2	926	Unsuccessful	Submission
378	Tyne, Wear, Tees	Iron Founders	For advance of 3s 6d per week and 10 percent increase in piece rates	21/3	1/10	1549	138	213672	Unsuccessful	Conciliation
461	Tees	Joiners & Sawyers	For advance in wages of 3s per week	22/5	6/8	1720	66	113520	Partial success	Negotiation
426	Newcastle	Joiners	Demarcation between shipwrights and joiners	26/1		40			Unsuccessful	Work done by shipwrights
385	Newcastle	Foundry labourers	For 10percent advance of wages	15/8	27/8	6	11	66	Unsuccessful	Submission
372	Tyne, Wear, Tees	PatternMakers	For advance of 3s 6d per week in wages	2/4	26/11	295	203	59885	Unsuccessful	Negotiation
457	Blyth	Rivet Heaters	For advance in wages of 6d per day - 2s 6d to 3s - on old work	15/5	18/5	17	4	68	Successful	Negotiation
451	Hartlepool West	Riveters & Platers	For advance in piece-work rate to a rate obtaining in another yard of the firm for specific work	11/4	14/4	230	4	920	Unsuccessful	Submission
447	Newcastle	Shipbuilders	Against the employment of four joiners who went into work during a demarcation dispute with shipwrights, which was maintained by the joiners after the work was finished	31/3		80			Unsuccessful	Work done elsewhere
436	Howden	Shipwrights	Demarcation of work dispute with joiners re the latter fixing 'coamings' for cabin frames	10/3	16/3	40	6	240	Unsuccessful	Arbitration

479	Jarrow	Shipwrights	For discharge of a shipwright belonging to a Sunderland local society who had acted in opposition to trade rules	12/9	24/9	12	11	132	Successful	Negotiation (the man left)
440	Walker	Shipwrights	Demarcation, joiners having commenced certain cabin work	20/3	2/4	88	10	880	Successful	Arbitration
471	Walker	Shipwrights	Against employment of labourers only to take down staging after a launch	15/8		70	1	70	Successful	Negotiation
468	Jarrow	Shipyard Smith's Strikers	Against strikers being paid less than recognised piece rate	13/8	15/8	84	3	252	Unsuccessful	Submission
480	North Shields	Labourers (dry dock)	For extra rates of pay when engaged on oil tank vessels	12/9	15/9	12	4	48	Successful	Negotiation
380	Darlington	Ironfounders	Refusal to do work from shops on strike on Tyne and Wear	Mar	Apr	5	42	210	Success	Negotiation
						13387	1088	439247		

Chapter 4 - appendix 2

Picture 16 - Net increase & decrease of wages and unemployment 1893 to 1912 ³⁸⁶

Year.	Net Increase (+) or Decrease (—) in Rates of Wages per week.				Mean percentage of Trade Union Members Unemployed.	
	Years of Falling Wages.		Years of Rising Wages.		Periods of Declining employment.	Periods of Improving employment.
	Number affected.	Amount of Decrease per week.	Number affected.	Amount of Increase per week.		
1893	—	£ —	549,977	£ 12,426*	7.5	—
1894†	670,386	45,092	—	—	6.9	—
1895†	436,718	28,125	—	—	5.8	—
1896	—	—	607,654	26,519	—	3.3
1897	—	—	597,444	31,508	—	3.3
1898	—	—	1,015,169	80,713	—	2.8
1899	—	—	1,175,576	90,313	—	2.0
1900	—	—	1,135,786	208,588	—	2.5
1901	932,126	76,588	—	—	3.3	—
1902	887,206	72,595	—	—	4.0	—
1903	896,598	38,327	—	—	4.7	—
1904	800,658	39,230	—	—	6.0	—
1905	688,889	2,169	—	—	5.0	—
1906	—	—	1,115,160	57,897	—	3.6
1907	—	—	1,246,464	200,912	—	3.7
1908	963,333	59,171	—	—	7.8	—
1909	1,154,796	68,922	—	—	7.7	—
1910	—	—	548,938	14,534	—	4.7
1911	—	—	916,366	34,578	—	3.0
1912	—	—	1,818,240	139,404	—	3.2‡
Net weekly advance £467,173.						

* The Agreement terminating the coal dispute was signed in November, 1893. No reduction in wages took place until August, 1894.

† In these years the fall in wages was mainly confined to the mining industry (see Table on pp. 34 and 35).

‡ Omitting March, which was seriously affected by the coal strike, the percentage was 2.5.

³⁸⁶ Board of Trade, Report on Changes in Rates of Wages and Hours of Labour in the United Kingdom in 1912, c7080

Chapter 5 – Community and Representation in the North East

When in that House M.P.'s divide,
If they've a brain and cerebellum, too,
They've got to leave that brain outside,
And vote just as their leaders tell 'em to.
But then the prospect of a lot
Of dull M. P.'s in close proximity,
All thinking for themselves, is what
No man can face with equanimity.
Then let's rejoice with loud Fal la – Fal la!
That Nature always does contrive – Fal la la!
That every boy and every gal
That's born into the world alive
Is either a little Liberal
Or else a little Conservative!
Fal la la!

W.S. Gilbert, 'Iolanthe'

Political and Electoral Background

This thesis contends that the role of communities and networks was critical in the development of the North East, and that an understanding of how these relationships were constructed and defined themselves is crucial for understanding how the region's industry and society developed. A key part of this is how communities and networks engaged with and within the political process, especially after the changes to the franchise and the structure of constituencies in 1884 and 1885 enabled a much larger proportion of society to vote. While political theory and philosophy did not necessarily figure prominently in the lives of many individuals, communities and the networks and institutions which represented them keenly defended their own interests. This materially affected national politics and played an important role in shaping the development of Labour politics. It is contended that political activity in the North East therefore was shaped by community and status concerns, rather than class or other national interests.

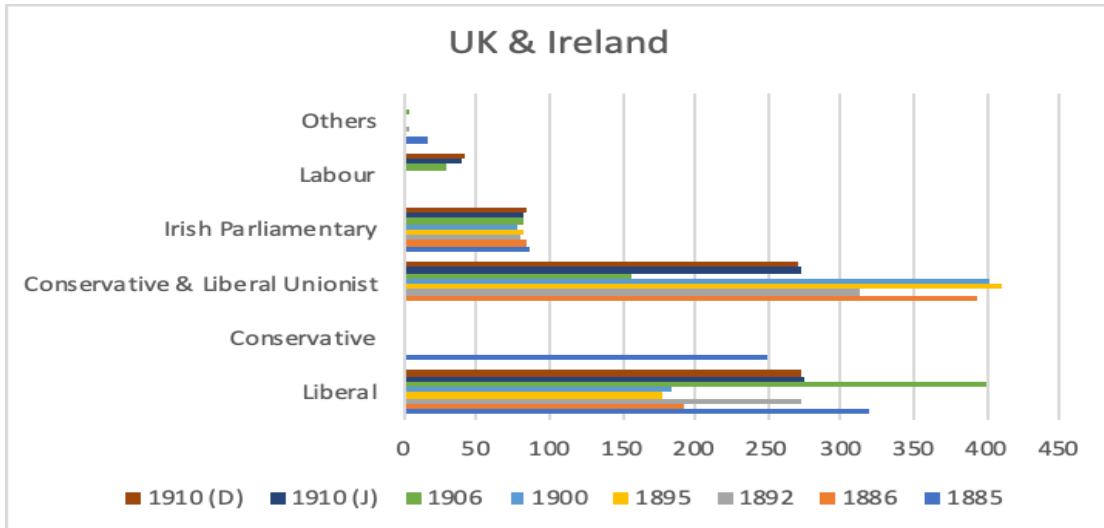
This chapter will begin with an analysis of the political landscape of the region, how this related to broader national issues, and how this affected Parliamentary election results. (Local government was an increasingly important process, but there is insufficient space to cover it here). The chapter examines the relationship between work, business, and political behaviour, focusing on how community informed that behaviour. Issues such as the eight-hour working day ran throughout the period and helped shape debates and voting behaviour across the region. Likewise, Tariff Reform and Imperial Preference and their impact on mining and shipbuilding exports affected voters of all backgrounds. It will be argued that community was a much more important influence than class consciousness, showing for example a low correlation between the economic profile of constituencies and the overt political affiliation of the returned Members of Parliament. Analysis of the constituencies, voting patterns and the Members of Parliament returned will show that community, both as a definition of local group identity and as a collective view of local interests, was an important factor in voting behaviour. This will build on arguments outlined in previous chapters that it was through the community and associated institutions that individuals and groups expressed and enacted their preferences and will, rather than these being developed and enacted by the institutions themselves. Of course, politicians frequently argue that they are expressing the 'will of the people', and the complex interrelationship between political opinion and the development and deployment of policy means that tracing a direct line between the two is difficult. The following analysis endeavours to look beyond the opinion/policy axis and look in more detail at the interactions between local economic structures, the backgrounds of those seeking to represent voters in parliament, and the political context nationally and locally.

The Wider Political Context: The Evolving National Landscape ³⁸⁷

One way to identify regional peculiarities for the period 1880 to 1910 (and this is not to claim exceptionalism on behalf of the region, merely to contrast) is to compare regional parliamentary results with national ones. This classification captures the changes in the franchise and boundaries of 1884 and 1885, and concludes with the 1910 elections, the last before the First World War. The chart below (figure 28) shows one such distinctive feature of the region, namely the consistent strength of the Liberal Party in the North East, despite national swings.³⁸⁸ Figure 28 below shows the results for each election between 1880 and 1918 for both the North East and the UK as a whole. The figures are for the number of seats won by each political party or grouping, with those highlighted in green indicating the party or grouping that held power after the election. In every election during the period, the Liberals won a significant majority of the seats across the North East, and it was not until the 1906 election that the Conservatives saw their number of seats decline.

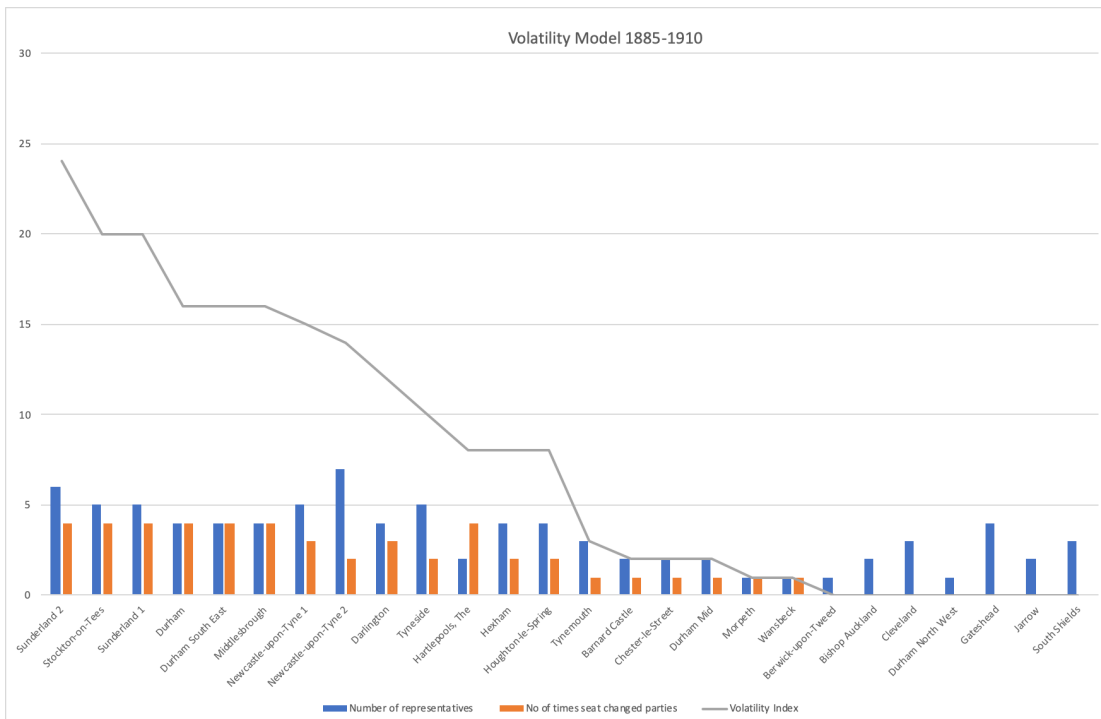
³⁸⁷ All voting information in this section is taken from J.G. Smith & S.R. Ball, (2016), *British Parliamentary Election Results, 1885-1973, with Socio-Economic Links to 1931 Census*. [data collection]. UK Data Service. SN: 8046, <http://dx.doi.org/10.5255/UKDA-SN-8046-1>; F W S Craig, "British Electoral Facts 1832-1987", Politico, 1989; with further analysis by the Author.

³⁸⁸ National data taken from F.W.S. Craig, *British Electoral Facts, 1832-1987*, (Dartmouth: Parliamentary Research Services, 1989); NE Regional results from J.G. Smith and S.R. Ball.



The consistent performance of the Liberals in the North East contrasts strongly with their varying results nationally. This can partly be explained by the relative stability of party and member representation across the North East, as the chart below shows:

Figure 29 – Volatility Model – North East



In this chart (31), changes in candidate (Number of Representatives) or political party are included, as is any candidate's changing party affiliation (No. of times seat changed parties). The chart shows that some seats were more susceptible to change than others, and factors such as voting population and economic makeup were not necessarily crucial. (Sunderland had 27,610 registered voters in 1910, Stockton-on-Tees had 11,582, and both were urban / industrial.) But before examining some of the local factors it is useful to provide an overview of national electoral issues in the period under study.

As the period opened, the Liberal and Conservative parties dominated national politics. Following the 1867 Reform Act around half the male working class had the vote, but most electoral rolls were dominated by small shopkeepers and tradesmen, who frequently took the chance to use their now secret ballots to defeat the established political classes at the polls.³⁸⁹ The 1880 general election campaign saw a large swing to the Liberal Party, and the return of Gladstone as Prime Minister.³⁹⁰ Gladstone, although himself a High Anglican, was able to command broad support across the established church, Roman Catholics and non-conformists alike. This suited a number of leaders of craft-based Trades Unions such as the Boilermakers Union, whose leader, Newcastle based Robert Knight, was a Congregationalist.³⁹¹ This broad coalition of interests was to serve the Liberals well for a considerable period and as will be shown later in this chapter was part of the reason why Liberal strength in the North East was maintained for so long.

³⁸⁹ John Belchem, *Popular Radicalism in Nineteenth Century Britain*, (London: Palgrave, 1996) p 129.

³⁹⁰ The Liberals won with a swing to them of 2.7%, and 54.7% of the popular vote. They gained 110 seats in the House of Commons, whilst the Conservatives lost 113.

³⁹¹ John Belcham, p 130.

Disraeli's Conservative Party was unable to effectively defend their home economic record. The 1870s had seen a severe depression rooted in the end of the railway boom. Other impacts came from cheaper wheat from the USA which flooded the now free trading UK, exacerbated by the worst harvest of the century in Britain in 1879.³⁹² By the end of that decade prices were falling, as were profits and employment, all having a significant impact on business and the broader economy, as can be seen in the relative changes in nominal and real wages shown in Figure 32 below.³⁹³ For many people in employment the fall in prices was beneficial as long as they could retain their earning potential. Figure 32 below categorises the period from 1873 to 1913 into three sub periods and shows the relative change in Money Wages, the Cost of Living, and Real Wages in each sub period.³⁹⁴ It shows that the second period, following the 1880 Liberal victory, between 1882 and 1899 not just the cost of living came down, but the amount of money being earned and its purchasing power went up.

This relative economic improvement from 1882 (although there were severe depressions within that period), had an impact both on industrial relations and politics, with relative stability at work, and Conservative dominance in Parliament. The third period was characterised by increasing instability at work and a breakdown of the Conservative hegemony.³⁹⁵ Whether there is a link between Conservative

³⁹² The price of wheat in Britain declined from 56s 0d a quarter in 1867–71 to 27s 3d in 1894–98. W. Fletcher, *The Great Depression of English Agriculture 1873-1896*, in P. J. Perry (ed.), *British Agriculture 1875-1914*, (London: Routledge, 1973) p. 34.

³⁹³ Original data from Feinstein, 1990, and presented in Mary Mackinnon, *Living Standards 1870-1914*, in R. Floud & D. McCloskey *The Economic History of Britain since 1700, Volume 2 1860-193*, (Cambridge: Cambridge University Press, 1994) p 272.

³⁹⁴ Real wages are wages adjusted for inflation. Money wages are the actual amount paid. Because real wages consider what can actually be purchased, in a period of inflation real wages can go down whilst money wages go up.

³⁹⁵ Original data from Feinstein, 1990, and presented in Mary Mackinnon, *Living Standards 1870-1914*, in R. Floud & D. McCloskey.

dominance and work stability is both an historical and political debate worthy of further examination.

Figure 30 – comparative economic performance 1873 - 1913

	1873-1882	1882-1899	1899-1913
Money Wages	-0.98	1.01	0.76
Cost of Living	-2.01	-1.01	1.23
Real Wages	1.03	2.03	-0.46

The Third Reform Act

The Representation of the People Act 1884, or the Third Reform Act, was one of the major achievements of Gladstone's government, and another important development in the extension of the franchise. The Act introduced the first uniform Parliamentary franchise across Britain and Ireland and brought the counties into line with the 1867 householder and lodger franchise by extending the borough householder voting rights to the counties. In 1885, the Redistribution of Seats Act redrew most constituency boundaries to make electoral districts more equal. (As Figure 34 below shows, however, this did not mean that every seat was similar). As a result, most areas returned only one Member to Parliament, although 27 seats, including Newcastle and Sunderland, continued to return 2 MPs until 1918.³⁹⁶

The growth of towns in the second half of the century had led to many suburban households of similar size and composition to those within the boundaries of the Parliamentary boroughs, being excluded from the Parliamentary franchise because they were beyond those borough boundaries and subject therefore to the

³⁹⁶ F.W.S. Craig, *British Electoral Facts, 1832-1987*, (Dartmouth, Parliamentary Research Services, 1989) p 161.

county franchise. The overall effect of this change on voter numbers across England and Wales can be seen below in figure 33.³⁹⁷

Figure 31 – Effects of the Third Reform Act

Year	Counties	Boroughs	Total	Increase	% Increase
1883	966,721	1,651,732	2,618,453		
1886	2,538,349	1,842,191	4,380,540	1,762,087	67.3%

The Act made no changes to plural voting, where voters who met the qualification and were registered to vote in more than one seat, could do so. General elections took place over several days meaning that plural voting was logistically perfectly feasible. This anomaly accounts for the discrepancies between total electorate and total votes cast figures, which in the North East potentially benefitted all parties. It has been argued that the paradox of Conservative dominance across most of England in the twenty years between 1886 and 1906 has obscured one of the fundamental developments of late nineteenth-century politics, which was that with the extension of the suffrage, class became an increasingly important factor in political allegiance.³⁹⁸ But the development of class identity alone is insufficient as an explanation, not the least because it fails to explain in the context of the North East the slow and intermittent rise of the Labour Party, the continuing strength of the Liberals and the relative stability of Conservative support. As will be shown below, class seems to have been much less important in the North East than communal and community identity. England in particular saw the consistent strength of the Conservative vote in the new suburbs, as well as rural areas, but in the North East,

³⁹⁷ Chris Cook and Brendan Keith, *British Political Facts 1830-1900*, (Basingstoke: MacMillan 1975) p 116.

³⁹⁸ James Cornford, *The Transformation of Conservatism in the Late Nineteenth Century* Victorian Studies, Vol. 7, No. 1, Symposium on Victorian Affairs (2) (Sep., 1963), p. 38 Indiana University Press <https://www.jstor.org/stable/3825601> Accessed: 09-10-2018 11:32 UTC.

despite similar urbanising developments as other parts of the country, the Liberal party still dominated. Even in Conservative landslides of 1895 and 1902 the Liberals won more seats than any other combination of parties in the North East, and the growing impact of the Labour Party had limited effect on the Liberal domination of the region until the 1918 election.

The effect of the Third Reform Act on the North East was to increase the overall number of seats within the Region from 16 to 26. The two big cities, Newcastle and Sunderland, retained their 2-seat format, with new constituencies being created by splitting Durham South into Barnard Castle and Bishop Auckland, and Durham North into Chester-le-Street, Houghton-le-Spring and Jarrow, in both cases reflecting the development of industry, especially coal mining in those areas. North of the Tyne, Northumberland South was split into Hexham and Tyneside, and south of the Tees a new constituency, Cleveland, was carved out of the old Yorkshire North Riding seat. Over the region the electorate effectively doubled between 1880 and 1885, from 130,632 to 270,379.³⁹⁹ As figure 34 below shows, the constituencies were not equal in terms of electorate, but more closely reflected population distribution than they did before the reforms.

³⁹⁹ Numbers calculated from data in J.G. Smith & S.R. Ball, *British Parliamentary Election Results, 1885-1973, with Socio-Economic Links to 1931 Census*. Please note that Morpeth's numbers are based on the 1880 electorate – between 1880 and 1895 Thomas Burt was returned unopposed so no updated numbers appear to have been taken. http://www.visionofbritain.org.uk/unit/12749934/cube/ELECTORATE_TOT.

Figure 32 – variations in electorate size

Constituency	1885 Electorate
Darlington	5,907
Durham	2,302
Gateshead	13,206
Hartlepoons (The)	8,500
Middlesbrough	13,864
Morpeth	5,458
Newcastle Upon Tyne	30,314
South Shields	11,928
Stockton-on-Tees	8,761
Sunderland	18,078
Tynemouth	6,669
Barnard Castle	9,991
Bishop Aukland	9,858
Chester-le-Street	11,830
Houghton-le-Spring	12,992
Jarrow	12,897
Durham, Mid	11,145
Durham, Northwest	9,543
Durham, Southeast	13,176
Berwick-upon-Tweed	9,691
Hexham	10,237
Tyneside	11,852
Cleveland	11,788
Wansbeck	10,392

These numbers are of those entitled to vote, and whilst not reflective of the total population they are indicative of where the development of industry (in a broad sense) was creating a substantial working population, and therefore where the £10 annual rental was becoming more commonplace.

Gladstone’s government fell in June 1885 over the issue of Home Rule. The General Election (delayed because boundaries were being redrawn and new registers prepared after the Third Reform Act) was held in late 1885. The national results over the following twenty-five years and eight elections can be found in figure 35 below, followed by figure 36 showing the results in the North East (number of MPs on the left (y) axis):

Figure 33 – National results 1885 - 1910

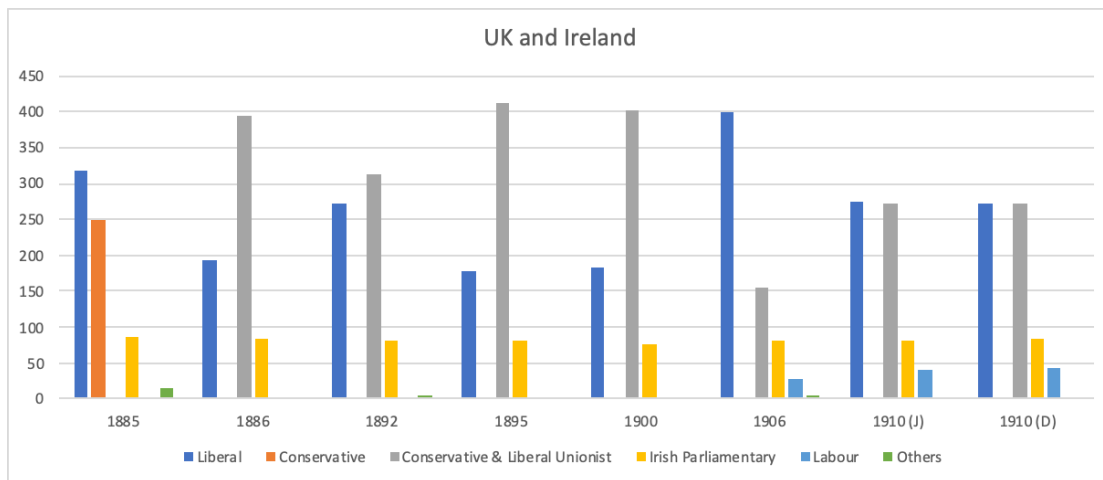
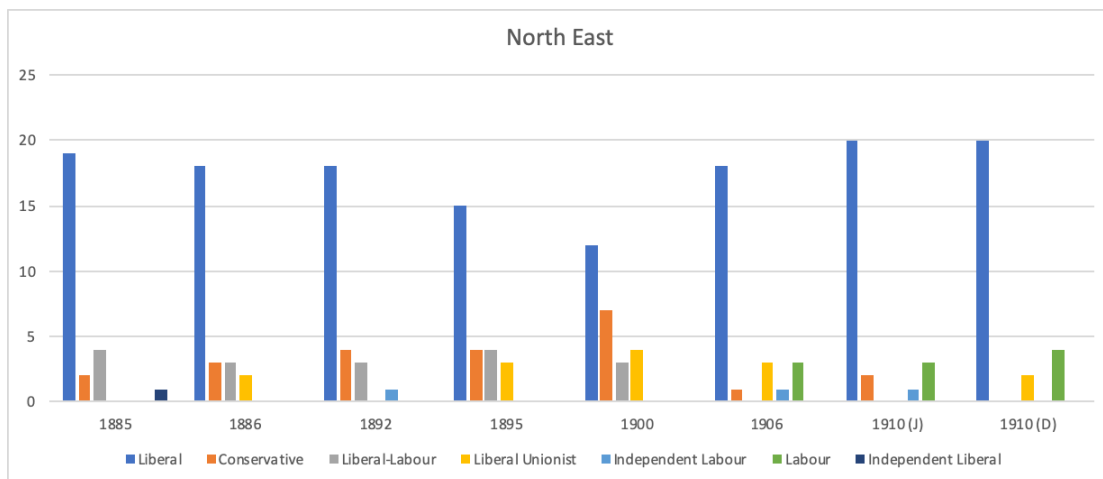


Figure 34 – North East results 1885 - 1910



As in the previous election, in 1885 the Liberals won the majority of seats in the North East, and in conjunction with the four Liberal–Labour candidates they won 23 of the 26 seats, with Joseph Cowan winning a 24th seat as an Independent.⁴⁰⁰

At the 1886 election, 23 of the 26 North East seats were won by candidates standing as Liberal (18), Liberal-Labour (3), and Liberal Unionist (2).⁴⁰¹ These latter constituencies, Durham South East and The Hartlepoons, returned to the Liberals in

⁴⁰⁰ Numbers calculated from data in J.G. Smith & S.R. Ball.

⁴⁰¹ Numbers calculated from data in J.G. Smith & S.R. Ball.

the 1892 election, both with different candidates. The national swing to the Conservatives was not replicated to the same extent in the North East.

1892 saw the Conservatives under Lord Salisbury win the largest number of seats, but not enough for an overall majority (313 won against 336)⁴⁰² The previous pattern in the North East was maintained, with the Liberals (18), and Liberal-Labour (3) winning 21 of the 26 seats.⁴⁰³ This election saw the victory of the first Independent Labour member of parliament, Havelock Wilson in Middlesbrough. Wilson, President of the National Sailors' and Fireman's Union, contested the seat as an Independent Labour candidate, having split with the local Liberal caucus, standing against a Gladstonian Liberal and a Liberal Unionist. Having secured election, however, Wilson moved quickly to realign himself with the Liberal Party and existing Liberal-Labour MPs like Thomas Burt and John Wilson.⁴⁰⁴ This is indicative of a key aspect of the relationship between voters and representatives, that it was the individual rather than the party label that was voted for, the voters making their choice based on whom they perceived would best represent their interests, rather than on a party 'ticket' of policies.

The 1895 election resulted in a win for the Conservatives, again in alliance with the Liberal Unionists, winning 411 seats against the Liberals with 177 seats.⁴⁰⁵ In the North East the pattern of voting behaviour was maintained, with the Liberals winning 15 seats, Liberal-Labour 4, and Liberal Unionists 3.⁴⁰⁶ As in 1886, it was

⁴⁰² F.W.S. Craig, p15. The total includes forty five Liberal Unionists who supported the Conservatives.

⁴⁰³ Numbers calculated from data in J.G. Smith & S.R. Ball.

⁴⁰⁴ Henry Pelling, *Social Geography of British Elections 1885-1910*, (London: Macmillan, 1967) p 327-328.

Havelock Wilson was later to become a leading light in a far right, pro war organisation, the National Party, in 1917. See Jerry White, p208

⁴⁰⁵ F.W.S. Craig, p16.

⁴⁰⁶ Numbers calculated from data in J.G. Smith & S.R. Ball.

Durham South East and The Hartlepoons which returned Liberal-Unionists, along with Darlington.

The 1900 election was referred to as the ‘Khaki’ election because it was held when it was believed that the Second Boer War had effectively been won (although it did not end until May 1902). The Conservative Party, together with their Liberal Unionist allies, won 402 seats, a majority of 134 over all the other parties.⁴⁰⁷ The Conservative victory was helped considerably by them winning 163 seats that were uncontested by other parties.⁴⁰⁸ The Labour Representation Committee put up candidates for the first time and won their first 2 seats with Keir Hardie and Richard Bell, but neither were in the North East. Labour representation in the region was to be found in the 3 Liberal-Labour members elected for Durham-Mid, Wansbeck, and Morpeth, each of them significant mining areas. Thomas Burt, MP for Morpeth, held the seat between 1874 and 1918, frequently winning in uncontested elections. Secretary of the Miner’s Association, he stayed loyal to his Liberal backers and never joined the formal Labour movement. This close relationship between the community, its institutions and their chosen Member of Parliament was a strong characteristic of North Eastern political behaviour.

⁴⁰⁷ F.W.S. Craig, p17.

⁴⁰⁸ Cook and Keith, p143; & Trevor Lloyd, “Uncontested Seats in British General Elections 1852-1910”, The Historical Journal, Viii, 2(1965), p262-263.

Election Year	Total Constituencies (UK)	Liberal (Seats uncontested in brackets)	Liberal Unionist	Conservative (Seats uncontested in brackets)	Constituencies Uncontested (Seats uncontested in brackets)
1880	416	39 (41)		62 (92)	67 (109)
1885	643	13 (14)		7 (10)	39 (43)
1886	643	39 (40)	29	86 (90)	219 (225)
1892	643	12 (13)	7	32 (34)	60 (63)
1895	643	10	19	110 (114)	185 (189)
1900	643	22	25	132 (138)	236 (243)
1906	643	27	1	10 (12)	111 (114)
1910 (J)	643	1	55	16 (10)	72 (75)
1910 (D)	643	29	52	64 (88)	158 (163)

In 1906, nationally the Liberals won a landslide as the Conservatives lost more than half their seats, including their leader's own seat in Manchester East, leaving them with a net loss of 246 seats and only 156 MPs.⁴⁰⁹ The election saw a 5.4% swing from Conservatives to Liberals in a "Liberal landslide". The Liberal's advocacy of free trade resonated with a broad audience, who were nervous at the possibility of food price rises because of the Conservative promotion of tariff reform.⁴¹⁰ The Labour Representation Committee under Keir Hardie was far more successful than at the previous election, winning 29 seats and soon after the election renamed itself as the Labour Party. In the North East the Liberals again won a majority of the seats (18), with the Labour Party (Barnard Castle, one of the two Newcastle upon Tyne seats, and one of the two Sunderland seats) and Independent Labour (Chester-le-Street, where the candidate, J.W. Taylor, a member of the ILP, joined the Labour Party on taking up his seat) winning 4 seats.⁴¹¹ The Conservatives dropped from 7 seats to 1 (Stockton-on-Tees), with the Liberal Unionists dropping from 4 seats to 3.

The first of 2 elections in 1910 was called by the Government amid a constitutional crisis caused by the House of Lords rejecting the so-called 'People's Budget'.⁴¹² The result was a hung parliament, with the Conservatives and their Liberal Unionist allies receiving the largest number of votes, 46.8% against 43.5%, but the Liberals winning the largest number of seats, returning 2 more MPs than the Conservatives, 274 against 272.⁴¹³ The Labour Party continued to gather momentum, going from 29 seats to 40. In the North East, Liberal dominance

⁴⁰⁹ F.W.S. Craig, p 18.

⁴¹⁰ <https://liberalhistory.org.uk/history/1906-election/> Accessed 15:44, 03/12/2018.

⁴¹¹ Henry Pelling, p 335.

⁴¹² See Geoffrey Lee, *The People's Budget: An Edwardian Tragedy*, (London: Shephard-Walwyn (Publishers) Ltd, 2008)

⁴¹³ F.W.S. Craig, p 19.

continued, with the party gaining 2 seats. The Conservatives retained 2 seats: Durham, where the sitting MP John Hills had returned to the Conservative fold from the Liberal Unionists, and 1 of the 2 Sunderland seats, where James Knott, owner of the Prince Steam Shipping Company held 1 of the 2 seats. The second was won by Samuel Storey, the founder of the Atlas Building Society, owner of the Newcastle Daily Journal, who stood as an Independent Tariff Reform candidate but with the support of the local Conservative association.⁴¹⁴ A second general election was called in December, the last to be held until the end of the First World War. The deadlock produced in the January General Election was not broken, with the Conservatives again winning the largest percentage of votes (46.6% against 44.2%) but not the largest number of seats (271 against 272).⁴¹⁵ The Liberal Party under Asquith formed a government with the support of the Irish Nationalists. The Labour Party, led by George Barnes, won 6.4% of the vote and 42 seats.⁴¹⁶ In the North East little on the surface changed, with the Liberals winning 20 seats in both elections, 1 seat (Durham) changing from Conservative to Liberal Unionist, although with the same Member of Parliament, and Labour gaining a fourth North East seat in the December election with the victory of Frank Goldstone in Sunderland. Both Storey and Knott had stood down from their Sunderland seats due to ill health and were replaced by Goldstone for Labour and Hamar Greenwood from the Liberals. The Conservatives continued to win seats in Sunderland up until the abolition of the constituency in 1950.

From this brief comparison of election results nationally and in the North East, several themes emerge. Firstly, the predominance of the Liberal and slow

⁴¹⁴ https://en.wikipedia.org/wiki/Sir_James_Knott,_1st_Baronet Accessed 11:31 04/12/2018.

⁴¹⁵ F.W.S. Craig, p 20.

⁴¹⁶ F.W.S. Craig, p 20.

emergence of the Labour Party, much slower indeed than in other parts of the country, despite the importance of industry and the consequent size of what could be described as the working class vote. Secondly, the close association between winning (and often losing) candidates and the voters, whether similar backgrounds, owner/worker relationships, or 'local boy made good'. Thirdly, and almost certainly a consequence of the other themes, the relative unimportance of party label and the flexibility with which it was treated by the candidates. Finally, the importance of specific 'touchstone' issues in affecting voting behaviours in the North East, such as opposition to tariff reform amongst the miners which allegedly would have constrained coal exports.

Voting Behaviour in the North East 1880-1914

Turning to a more detailed look at voting behaviour in the North East, key themes identified above will be examined, particularly about the nature of the candidates and Members of Parliament chosen by the electors. As before, this is not to claim any exceptionalism on the part of the North East (seats passing from Father to Son were common across the country, for example), but to explore the nature of community relationships.⁴¹⁷ Map 9 below shows the geographic distribution of constituencies across the North East.⁴¹⁸ In this thesis, the constituencies in the west (Cumberland, et al) are excluded. This section seeks to show that the relationships between North East communities and their political representatives, showing several similar characteristics as the relationships between those same communities and the

⁴¹⁷ There are many examples of families sitting in Parliament over generations – one example will suffice: Sir Thomas Dyke Acland, 11th Baronet, MP 1837-86; Sir Thomas Dyke Acland, 12th Baronet, MP 1882-92. Son of Thomas.; Sir Anthony Dyke Acland, 13th Baronet, MP 1885-99. Son of Thomas.; Sir Francis Dyke Acland, 14th Baronet, MP 1906-39; Richard Acland, MP 1935-55.

⁴¹⁸ Taken from Henry Pelling, p xxvii.

institutions that represented them, notably that they were essentially pragmatic and transactional. The voter/representative relationship was characterised by close local ties, whether Thomas Burt the miner in Morpeth, or Sir Christopher Furness the ship owner and businessman in The Hartlepoons, both of whom were of their community as much as they were from the community, despite their different roles.

Map 9 – Parliamentary Constituencies in the North East



Another important aspect is the continuing strength of the Liberal Party across the North East. There is no single factor that explains this, but the prevalence of miners is an important one. Miners had many reasons to support the Liberals, including hostility to landowners and other rentiers, the power of non-Conformity in mining villages, and the importance of exports to mining and the industry's consequent fear of tariffs. The miner's opposition to a legally imposed eight-hour day also aligned them with the Liberals, but this was an opposition that was not shared by other industrial groups. This might be part of the reason why the embryonic Labour Party found a footing amongst engineers in Newcastle and Iron workers in Consett during the 1890s, but not amongst the mining community even after the Miner's Federation joined the Labour Party in 1909. It can be argued that this is

further evidence of the pragmatic relationships at the heart of voting behaviour in the North East.

Prior to the 1884 Reform Act and the 1885 Redistribution Act, the North East was represented by 24 parliamentary seats, of which 16 were 2-seat constituencies. From the 1885 election, the region had 26 seats, of which only Newcastle and Sunderland were two-seat constituencies. As can be seen in figures 35 and 35 on page 252, the Liberals appear to have dominated the region right up until the end of the First World War. But this is only part of the story. Voter turnout is one of the usual measures of political engagement, and figure 37 below shows that average turnout across the region only once dropped below 76% (74.7% in 1886) during the period, compared to a national figure of 78.9% (UK) and 79.4% (England) over the same period.⁴¹⁹ There is though significant variance within that headline figure, both geographically and politically.

Figure 35 – Average Turnout 1880 - 1910

	1880	1885	1886	1892	1895	1900	1906	1910 (J)	1910 (D)
Seats	24	26	26	26	26	26	26	26	26
Seats not contested	3	1	11	1	1	4	4	2	6
Average Turnout		79.4%	74.7%	79.7%	80.2%	76.9%	80.9%	86.1%	81.6%
Highest Turnout	100.0%	91.5%	87.7%	93.9%	92.2%	89.6%	93.2%	95.1%	92.7%
	Darlington (L)*	Durham (L)	Darlington (L)	Darlington (L)	Darlington (LU)	Stockton-on-Tees (C)	Darlington (LU)	Darlington (L)	Darlington (LU)
Lowest Turnout	59.9%	57.6%	66.8%	67.3%	60.8%	68.6%	72.6%	76.1%	72.1%
	South Shields	Jarrow (L)	Wansbeck (Lib-Lab)	South Shields (L)	Morpeth (Lib-Lab)	Chester-le-Street (L) & Morpeth (Lib-Lab)	South Shields (L)	South Shields (L)	Tyneside (L)
	* Only 1 candidate stood								

In terms of voter turnout, the area south of the River Wear stands out for consistently higher numbers, whereas industrial and mining areas along and around the River Tyne stand out for consistently lower turnout. When the details of the highest turnout seats are examined, some trends appear:

⁴¹⁹ Figures calculated from base data in F W S Craig, p 69-71.

Figure 36 – Highest Turnouts 1880 - 1910

	1880	1885	1886	1892	1895	1900	1906	1910 (J)	1910 (D)
Darlington	Theodore Fry (L)	Theodore Fry (L)	Theodore Fry (L)	Theodore Fry (L)	Arthur Pease (LU)	Herbert Pease (LU)	Herbert Pease (LU)	Ignaz Trebitsch-Lincoln (L)	Herbert Pease (LU)
Durham	Farrer Herschell (L) Thomas Charles Thompson (L)	Thomas Milvain (C)	Thomas Milvain (C)	Matthew Fowler (L)	Matthew Fowler (L)	Hon. Arthur Elliot (LU)	John Waller Hills (LU)	John Waller Hills (C)	John Waller Hills (LU)
Stockton-on-Tees		Joseph Dodds (L)	Joseph Dodds (L)	Thomas Wrightson (C)	Jonathan Samuel (L)	Sir Robert Ropner (C)	Sir Robert Ropner (C)	Jonathan Samuel (L)	Jonathan Samuel (L)

The key factors were firstly, the stability of representation and relative lack of volatility; and secondly, the contests in Darlington were between wings of the Liberal party, the contests in Durham were between wings of the Liberal party and the Conservatives, who were frequently supported by the Liberal Unionists (manifested by in the willingness of John Hills to stand as both a Conservative and a Liberal Unionist). Stockton-on-Tees looks like a more evenly balanced contest between the two main parties. One possible explanation is that it was primarily the candidate that was being voted for, rather than the party ‘ticket’. There does appear to be a close linkage between the candidate, the size of their local business presence (or in other seats their relationship with influential unions) and their ability to hold the seat. Theodore Fry, for example, although born in Bristol was an influential local businessman as director of the Bearpark Coal and Coke Co, director of Shildon and Weardale Waterworks and head of Fry Janson and Co, Darlington iron manufacturers. He was also married to the granddaughter of the railway pioneer Edward Pease, who had been instrumental in developing the Stockton and Darlington Railway and was a leading Quaker. Edward Pease’s grandson, Joseph, was the Chairman of the North Eastern Railway, which maintained a large locomotive works in Darlington and was one of the town’s main employers. Joseph was the member for Barnard Castle, where his collieries were situated, but lost his seat in 1906 to Arthur Henderson for Labour. Stockton-on-Tees, which was more working class than Darlington with a large iron, steel, and shipbuilding presence, was Liberal until 1892 when the owner of a local engineering firm in Thornaby, Thomas

Wrightson, stood for the Conservatives and won. He held the seat until 1895, when a Welsh born local councillor won the seat for the Liberals with the help of votes from the Welsh steel workers who had moved into the area from South Wales. The Conservatives won the seat back in 1900 and 1906 through Sir Robert Ropner, a Prussian born ship and shipyard owner who employed some 1500 local workers.⁴²⁰ It is possible therefore to argue that one of the key factors in voting behaviour in these industrial towns was the local impact and presence of the candidate, rather than their attachment to party or to political programme. The candidate represented the constituency based on their 'business' relationship with a large number of voters, which was sufficient in the voters' eyes to trust them to act in their interests. These relationships were pragmatic rather than ideological, probably based on a combination of deference and calculation that a candidate with local interests would best look after the voters' interest and were another manifestation of the ways in which institutions (in this case political parties) were influenced by their supporters, even if not their members. Sir Christopher Furness, standing in The Hartlepoons in the 1900 election held an open-air meeting in West Hartlepool at the beginning of the campaign, and told the crowd that it was not as Chairman of the Steel Works Company he was asking the workmen to vote for him, it was because he represented the principles that would be of most benefit to them.⁴²¹ This employer/politician/employee/voter relationship was, as will be shown below, replicated elsewhere in the North East, and it can be argued represented a classic class and power relationship. At the same time, this underestimates the case of both

⁴²⁰ Henry Pelling, p 329.

⁴²¹ Daily Gazette for Middlesbrough, "*The Bishop Auckland Campaign.*" 28 Sept. 1900. British Library Newspapers, <https://link.gale.com/apps/doc/R3211530502/BNCN?u=unn&sid=BNCN&xid=eea0516f>. Accessed 7 Oct. 2020.

Furness and the Hartlepool electorate. Furness was a self-made man, beginning his career as a buyer in Thomas Furness and Company, a firm owned by his older brother Thomas and a wholesale provision merchant based in Hartlepool. Christopher grew his ship owning and shipbuilding businesses, and through a series of mergers, his firm developed into one of the main employers in Hartlepool. Furness was therefore not only an employer but an exemplar of what might be achieved, and therefore from the voters' perspective was someone who could represent them and their interests in Parliament because he was one of them. There is an essential pragmatism and rationality about this relationship between voter and representative. Furness first won the seat in 1892, taking it from Thomas Richardson (who, as a Liberal Unionist won it back in 1895 and held it until Furness secured it in 1900). Richardson was the son of the owner of Richardson's Marine Engine works in Hartlepool, like Furness therefore having a direct economic interest in the constituency.

Looking at the lowest turnout constituencies (figure 39 below) similar trends emerge even more strongly.

Figure 37 – Lowest Turnouts 1880 - 1910

	1880	1885	1886	1892	1895	1900	1906	1910 (J)	1910 (D)
South Shields	James Cochran Stevenson (L)	James Cochran Stevenson (L)	James Cochran Stevenson (L)	James Cochran Stevenson (L)	William Robson (L)	William Robson (L)	Sir William Robson (L)	Sir William Robson (L)	Russell Rea (L)
Jarrow		Charles Palmer (L)	Charles Palmer (L)	Sir Charles Palmer, Bt (L)	Sir Charles Palmer, Bt (L)	Sir Charles Palmer, Bt (L)	Sir Charles Palmer, Bt (L)	Godfrey Mark Palmer (L)	Godfrey Mark Palmer (L)
Wansbeck		Charles Fenwick (Lib-Lab)	Charles Fenwick (Lib-Lab)	Charles Fenwick (Lib-Lab)	Charles Fenwick (Lib-Lab)	Charles Fenwick (Lib-Lab)	Charles Fenwick (Lib)	Charles Fenwick (Lib)	Charles Fenwick (Lib)
Morpeth	Thomas Burt (L)	Thomas Burt (Lib-Lab)	Thomas Burt (Lib-Lab)	Thomas Burt (Lib-Lab)	Thomas Burt (Lib-Lab)	Thomas Burt (Lib-Lab)	Thomas Burt (L)	Thomas Burt (L)	Thomas Burt (L)
Chester-le-Street		James Joicey (L)	James Joicey (L)	James Joicey (L)	Sir James Joicey, Bt (L)	Sir James Joicey, Bt (L)	John Wilkinson Taylor (Lab)	John Wilkinson Taylor (Lab)	John Wilkinson Taylor (Lab)
Tyneside		Albert Grey (L)	Wentworth Beaumont (L)	Jack Pease (L)	Jack Pease (L)	Hugh Smith (LU)	J.M.Robertson (L)	J.M.Robertson (L)	J.M.Robertson (L)

Not only is the winning parliamentarian very consistent (Jarrow being a family affair), candidates like Burt and Fenwick were able to switch notional party allegiance without penalty at the ballot box, and seats such as South Shields retained party and candidate loyalty. From this analysis turnout does not seem to have been any kind of direct indicator as to voting behaviour. The mining villages that emerged in the late

nineteenth century across the Great Northern Coalfield in Durham and Northumberland were often self-contained communities separate from the industrial developments and urban expansion along the banks of the Rivers Tyne, Wear, Derwent, and Tees. Was this a factor in explaining voter behaviour? The seats described above were mostly urban or semi-urban, and apart from Jarrow and Morpeth had relatively few mines. Houghton-le-Spring and Chester-le-Street, both to the south of the Tyne, were primarily mining areas.

Figure 38 – Chester-le-Street and Houghton-le-Spring 1880 - 1910

	1880	1885	1886	1892	1895	1900	1906	1910 (J)	1910 (D)
Chester-le-Street		James Joicey (L)	James Joicey (L)	James Joicey (L)	Sir James Joicey, Bt (L)	Sir James Joicey, Bt (L)	John Wilkinson Taylor (Lab)	John Wilkinson Taylor (Lab)	John Wilkinson Taylor (Lab)
Houghton-le-Spring		John Wilson (Lib-Lab)	Nicholas Wood (C)	Henry Fenwick (L)	Robert Cameron (L)	Robert Cameron (L)	Robert Cameron (L)	Robert Cameron (L)	Robert Cameron (L)

Mining expanded in Houghton-le-Spring significantly over the period and turned the constituency from a mainly rural and farming area into a large coalfield, but apart from the 1886 Conservative victory the seat was a Liberal stronghold throughout the period. James Joicey was the biggest mine owner in the country by the time he was raised to the Peerage in 1906, and in the ensuing bye-election the Miner's candidate, John Taylor of the ILP, won. He joined the Labour Party on taking his seat. Other mining seats in Durham such as Mid-Durham, which surrounded Durham City, and Durham North West, which extended along the River Derwent into the Pennines, consistently returned Liberal or Liberal-Labour candidates, some of whom would have been identified as radicals, but who could be sure of Liberal votes from the miners. Durham South East had little industry at the beginning of the period, but the mining area in the northern part of the constituency grew rapidly. These three constituencies give some other indications of the relationships between industry, land, and voting.

Figure 39 – Durham Mid, North West, & South East 1885 - 1910

	1880	1885	1886	1892	1895	1900	1906	1910 (J)	1910 (D)
Durham Mid		William Crawford (Lib-Lab)	William Crawford (Lib-Lab)	John Wilson (Lib-Lab)	John Wilson (Lib-Lab)	John Wilson (Lib-Lab)	John Wilson (L)	John Wilson (L)	John Wilson (L)
Durham North West		Llewellyn Atherley-Jones (L)	Llewellyn Atherley-Jones (L)	Llewellyn Atherley-Jones (L)	Llewellyn Atherley-Jones (L)	Llewellyn Atherley-Jones (L)	Llewellyn Atherley-Jones (L)	Llewellyn Atherley-Jones (L)	Llewellyn Atherley-Jones (L)
Durham South East		Sir Henry Havelock-Allan, Bt (LU)	Sir Henry Havelock-Allan, Bt (LU)	Joseph Richardson (L)	Sir Henry Havelock-Allan, Bt (LU)	Frederick Lambton (LU)	Viscount Lambton (LU)	Evan Hayward (L)	Evan Hayward (L)

Durham North West contained mining villages and the Consett ironworks, and Atherley-Jones, a radical barrister, was regularly supported by the large Irish contingent of workers in Consett and by the miners.⁴²² Institutionally, this relationship between voter and candidate was clearly manifested in seats such as Mid-Durham, primarily a mining area, first represented by William Crawford, a leader of the Durham Miner's Association. John Wilson, who succeeded him in 1892, had won Houghton-le-Spring in 1885 but lost it in 1886. Wilson, described on the 1900 nomination papers as a Miner's Agent, was General Secretary of the Durham Miner's Association from 1896, and was able to use the local miners' lodges to organise the vote. Even where the lodge was run by a Conservative, the local Liberal Associations were able to provide support.⁴²³

Durham South East, despite some mining in the north, was dominated by landowning interests, whether General Sir Henry Havelock or Viscount Lambton, both of whom owned substantial land in the constituency. In all three, therefore, there was a pattern of voting behaviour that reflected the primary interests of the leading networks, interest groups and commercial clusters in the area, rather than a strict alignment to party manifesto or policy. The North East did, therefore, whilst not ignoring national political trends during this period, march to its own beat.

⁴²² Henry Pelling, p 336.

⁴²³ Northern Echo, "The General Election." 4 Oct. 1900. British Library Newspapers, <https://link.gale.com/apps/doc/BA3200281117/BNCN?u=unn&sid=BNCN&xid=73fec492>. Accessed 7 Oct. 2020.

In common with most of the region, Newcastle was a predominantly nonconformist City (albeit with a significant, mainly Irish, Catholic minority), with a substantial middle class, as would be expected in the region's administrative and commercial centre. There is little doubt that local popularity and familiarity were significant factors in voting patterns. Joseph Cowan, proprietor of the *Newcastle Daily Chronicle*, despite coming into conflict with both the local and national Liberal party establishments, was still elected as a Liberal MP. In 1892, Alderman C F Hammond, a Conservative, won the first of the two Newcastle seats ahead of John Morley, the Liberal Leader, who was not a local. 1895 and 1900 saw the Conservatives win both seats, until a return to the Liberals in 1906, with Liberal and Labour candidates running together to win the two seats. In the 1900 election, W.R. Plumber and George Renwick won for the Conservatives, both being able to point to their local upbringing and connections in contrast to their Liberal opponents, Captain Lambton, and Mr Storey.⁴²⁴

Figure 40 – Newcastle upon Tyne 1880 - 1910

	1880	1885	1886	1892	1895	1900	1906	1910 (J)	1910 (D)
Newcastle-upon-Tyne	Joseph Cowen (L) Ashton Wentworth Dilke (L)	Joseph Cowen (Ind L) John Morley (L)	John Morley (L) James Craig (L)	John Morley (L) Sir Charles Hamond (C)	Sir Charles Hamond (C) William Cruddas (C)	Sir Walter Plummer (C) George Renwick (C)	Walter Hudson (Lab) Thomas Cairns (L)	Walter Hudson (Lab) Edward Shortt (L)	Walter Hudson (Lab) Edward Shortt (L)

The Middlesbrough seat was only once held by the Conservatives, when Sir Samuel Alexander Sadler defeated the incumbent, J Havelock Wilson, in the 1900 election. Both could demonstrate local connections, Wilson having grown up and worked in Sunderland, and Sadler as the owner of Sadler and Company Limited, Teesside's first oil and chemicals company. He was also a colliery owner and had interests in several colliery companies in County Durham. Comment after the

⁴²⁴ Newcastle Courant [1803], "The General Election." 29 Sept. 1900. British Library Newspapers, <https://link.gale.com/apps/doc/BA3206563452/BNCN?u=unn&sid=BNCN&xid=5085a5ec>. Accessed 8 Oct. 2020.

election put Wilson's defeat down to Sadler's winning the Catholic and temperance votes, but primarily down to an acceptance by many Liberal voters that the Unionists were going to win and therefore they should put their faith in a 'local man'.⁴²⁵

What might be the explanations behind these patterns of voting behaviour? It is worth considering that common economic conditions have not always, or even often, led to a common class consciousness, with an identification of interests between groups with different work and status situations, for example between craft and manual workers. The "work situation" (the social relations that emerge because of the work the individual engages in) is an important factor in the different development of political class consciousness between groups with the same economic and status situation (how the individual is placed in the social hierarchy).⁴²⁶ As discussed above in Chapter 1 class and community are not the same, class being only a potential identifier and the social relations emerging from the "work situation" and into the actual community may actively override and discourage the development of a specifically class consciousness. For example, the fact that Platers and Platers' Helpers were both nominally working class did not mean that their class or community interests were aligned. Their perceptions of their work situation and economic and social interests overrode any other nominally 'political' interests others may have thought they ought to have had, and their focus was on the immediate horizon, not in changing the world. It has been argued that the fact that Northumberland and Durham miners were working a seven-hour day at the coalface a long time before the rest of the country's miners had the same benefit

⁴²⁵ Northern Echo, "The General Election." 4 Oct. 1900. British Library Newspapers, <https://link.gale.com/apps/doc/BA3200281117/BNCN?u=unn&sid=BNCN&xid=73fec492>. Accessed 7 Oct. 2020

⁴²⁶ Cornford, 'The Transformation of Conservatism in the Late Nineteenth Century', *Victorian Studies*, Vol. 7, No. 1, Symposium on Victorian Affairs (2) p. 38 Indiana University Press p38.

was one reason for their relative conservatism and their reluctance to join the Miner's Federation of Great Britain and support a legally enforceable eight hour day.⁴²⁷

Varieties of "work situation" may therefore have resulted in differing attitudes and traditions within each occupational subgroup, whether 'manual' workers, who in class terms may generally be referred to as working class, and among the 'non-manual' workers who might be referred to as the lower middle class. Within the broad category of the working class, therefore, work situations as experienced by craft workers were fundamentally different to those experienced by labourers, and this would then be further reflected in differing 'status' situations. Demarcation disputes are an excellent example of work and status situation overcoming any theoretical notions of class solidarity. This argument can be extended to help an understanding of political behaviour. Cornford quotes Talcott Parsons who wrote "...it may be the question is not so much ... for *what* he is voting as it is *with whom* he is associating himself in voting".⁴²⁸ Thus, voting behaviour was as much determined by an individual's membership of work and social situations and the norms imposed there as it was by any external political drive such as class solidarity.

Biagini and Reid have argued that a lot of British historians have found the existence of working-class liberalism 'embarrassing', mainly because it deviates from the idea of the 'embourgeoisement of the 'labour aristocracy'. They argue that popular politics needs to be assessed within its own political context, rather than being measured against what 'should' have happened.⁴²⁹ Thus, the constituencies

⁴²⁷ Henry Pelling, p319; John Wilson, MP, Secretary of the Durham Miners Federation, Q14211 to 14432; and Mr William Straker, of the Northumberland Miner's Mutual Confident Association, Q14030 to 14210, both in evidence to the Departmental Committee 'on the probable economic effect of a limit of eight hours to the working day of coal miners', Part II, C3506, 1907.

⁴²⁸ Cornford p 41.

⁴²⁹ E.F. Biagini and A J Reid, "*Currents of Radicalism, Popular Radicalism, organised labour and party politics in Britain 1850-1914*", (Cambridge: Cambridge University Press, 1991) p 4-5.

of Jarrow and Sunderland pose a challenge to those arguing in terms of voting behaviour reflecting narrow class interests:

Figure 41 – Jarrow & Sunderland 1880 - 1910

	1880	1885	1886	1892	1895	1900	1906	1910 (J)	1910 (D)
Jarrow		Charles Palmer (L)	Charles Palmer (L)	Sir Charles Palmer, Bt (L)	Sir Charles Palmer, Bt (L)	Sir Charles Palmer, Bt (L)	Sir Charles Palmer, Bt (L)	Godfrey Mark Palmer (L)	Godfrey Mark Palmer (L)
Sunderland	Sir Edward Gourley (L) Sir Henry Havelock-Allan, Bt (L)	Sir Edward Gourley (L) Samuel Storey (L)	Sir Edward Gourley (L) Samuel Storey (L)	Sir Edward Gourley (L) Samuel Storey (L)	Theodore Doxford (C) Sir Edward Gourley (L)	Theodore Doxford (C) John Stapylton Grey Pemberton (C)	James Stuart (L) Thomas Summerbell (Lab)	Samuel Storey (Ind C) James Knott (C)	Hamar Greenwood (L) Frank Goldstone (Lab)

Jarrow and Sunderland had very similar social and industrial structures, with a strong dependence on ship building and associated engineering industries. The second two-seat constituency, Sunderland, was, like Newcastle, also strongly nonconformist, with a large industrial population of miners, shipbuilders, engineers, and dock workers. It too seems to follow a similar pattern to Newcastle, with a series of high-profile Liberal MPs with a decline and resurgence of the Conservatives at the same time as the Labour Party emerges. Sir Edward Gourley was a Sunderland born ship owner and businessman who was an early investor in steam ships. Theodore Doxford was another locally born man, working at his father's ship building yard on the River Wear. He was the first Conservative to be elected for Sunderland in forty years and was a founding member and second President of the North-East Coast Institution of Engineers and Shipbuilders. Samuel Storey, although born in Newcastle, had moved to the Sunderland area at the age of seventeen, and went on to found the Atlas Building Society, and was an active Town Councillor before becoming MP. He also invested in building houses in Monkwearmouth and East Boldon, as well as being a founder of the *Sunderland Echo*, so like Gourley and Storey his local connections were strong. Summerbell was a local typographer and local councillor, Sir James Knott was a ship owner, and Goldstone was a locally born teacher. The only two representatives to fall outside this local nexus were Hamar

Greenwood, a Canadian lawyer, and John Stapylton Grey Pemberton, an Eton and Oxford educated lawyer, academic and magistrate. This may well indicate the start of the breakup of a more direct relationship between voters and representatives, with political parties starting to establish their role as intermediaries between the two.

Both Jarrow and Sunderland had seen significant expansion in the period under review, yet Jarrow consistently voted for the founder of the town's biggest employer, and, following his death, one of his sons from his third marriage. [There was a brief interregnum between 1907 and 1910 when Pete Curran, the Labour candidate won a bye-election in 1907, despite his vote dropping 5.7% from the previous election. It was the only election between 1885 and 1918 when a member of the Palmer family did not stand.

Sunderland, however, had less consistent voting patterns, generally reflecting national trends and electing a Labour Representation Committee member in 1906, Thomas Summerbell. The most important point is that standing under a Liberal banner did not of itself guarantee that an MP was representing a Liberal manifesto or was even in agreement with Liberal policy. The most blatant example of this was Joseph Cowen, who was first elected as one of the two Newcastle MPs in 1874, succeeding his father who had been a Liberal MP since 1865. Joseph Cowen last stood in 1885 but did not take his seat on the grounds of ill health. By this point he was not only an 'Independent Liberal' he was in dispute with the party leadership, the Newcastle Liberal Association, and his fellow Liberal MPs. Another example would be the moorland constituency of Barnard Castle, which was represented, as noted above, by Sir Joseph Pease, chairman of LNER and owner of several mines in the area. At his death in 1903 his election agent, an official of the Society of Ironworkers, Arthur Henderson, stood as a Labour candidate apparently at the insistence of the

Ironworkers even though he was in broad agreement with Liberal beliefs.⁴³⁰ The Liberals put up their own candidate, but Henderson still won mainly because his background as a Union official meant that voters had confidence that he would be an effective representative of their interests.⁴³¹ Party label again seems less important.

It can be seen therefore that one basis of general voting behaviour in the North East was community and status much more than class or broader, national themes. Developing this idea further by examining a number of variables together helps to show this more clearly. The charts below consider a number of these variables, including the predominant economic geography of the constituency, as well as the major religious makeup. The economic geography categorises the constituencies into their primary economic drivers. This is not to say that, certainly during the period under review, that any of them had only one economic driver. The vast extent of the Great Northern Coalfield for example meant that coal could potentially be mined almost anywhere in the Region, as map 10 below shows.

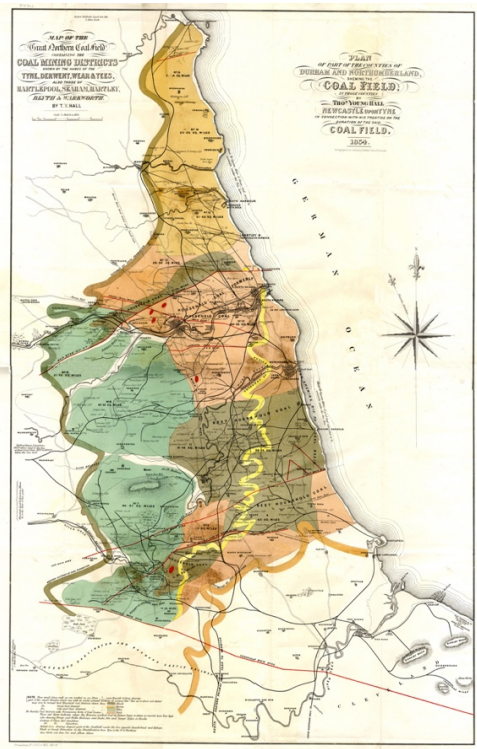
⁴³⁰ Henry Pelling, p337.

⁴³¹ The Teesdale Mercury observed: "Mr Henderson had very little support in Barnard Castle. Indeed, he has said that he left the ground for the aristocratic candidates".

Henderson's support came largely from the colliery districts and was strengthened by his standing in the church. Methodism was strong in Teesdale, and Henderson spent his weekends preaching throughout the dale. Joseph Pease's son, Jack, also an MP, commented that: "Arthur Henderson is a power in the chapels and the chapel counts for a great deal in the constituency".

The Teesdale Mercury commented after the result: "The result of the contest in the Barnard Castle Parliamentary Division was certainly a great surprise to the inhabitants at the head of the constituency, but it was no source of wonderment whatever to those who had personally and very carefully watched the campaign in the colliery districts." <http://www.teesdalemercury.co.uk/teesdale-news/feature,1689.html>.

Map 10 – Northumberland and Durham Coalfield 1854 by Thomas Young Hall⁴³²



That did not mean that coal mining was economically or geologically viable across the whole coalfield, so mining and agriculture often coexisted. The religious makeup likewise is not to suggest rigorous boundaries, more a reflection of the prevalent denomination, and does show a general theme of Methodism in mining areas, and general non conformism in the more urban areas. Initial religious categorisation is based on the work of Henry Pelling.⁴³³

Figure 44 below shows the winning party at each general election between 1885 and 1910 (December). Across the period under study the winning party at each election is recorded and colour coded, with the two rightmost columns providing a summary of the economic geography and religious makeup of each constituency. There is little correlation between economic geography and voting patterns. Party is not obviously linked with either of the dimensions of economy and

⁴³² <https://mininginstitute.org.uk/education/archive-teaching-unit/a-general-maps-of-the-coalfield/>.

⁴³³ Henry Pelling, p 316-345.

religion. Durham North West and Jarrow were both Liberal throughout the period, yet one was Industrial / Urban and the other Mining / Industrial. The two constituencies with the largest Catholic population, Jarrow, and Gateshead, also both voted consistently Liberal.⁴³⁴ Both Barnard Castle and Chester-le-Street swung towards Labour in the last three elections, and they were both mining economies, whereas Wansbeck and Morpeth, again both strong mining areas, swung back to the Liberals over the same timescale. Wansbeck and Morpeth though were dominated by the mines, and the mining votes were content to gain representation without the need for a new party, especially as the Liberals were opposed, like the miners, to legislation to limit working hours. Barnard Castle and Chester-le-Street, although strongly mining areas had other industries (iron workers in Barnard Castle for example, who as was shown above with the choice of Arthur Henderson were a small but influential group that were powerful enough to affect candidature.

⁴³⁴ The issue of Home Rule and the effect on voting cannot be ignored in these two constituencies, and Liberal support for it was consistent through the period under study.

and organisations in their constituencies. Figure 45 below categorises the members into five broad categories (where evidence exists).

Figure 43 - Constituency Analysis by Economic Geography, Religious Makeup, & MP categorisation

Constituency	1885		1886		1892		1895		1900		1906		1910 (Jan)		1910 (Dec)		Economic Geography	Religious Makeup *
	MP	Party	MP	Party	MP	Party	MP	Party	MP	Party	MP	Party	MP	Party	MP	Party		
Barnard Castle	Sir Joseph Pease, Bt	Liberal	Sir Joseph Pease, Bt	Liberal	Sir Joseph Pease, Bt	Liberal	Sir Joseph Pease, Bt	Liberal	Sir Joseph Pease, Bt	Liberal	Arthur Henderson	Labour	Arthur Henderson	Labour	Arthur Henderson	Labour	Mining	Non-conformist
Berwick-upon-Tweed	Sir Edward Grey, Bt	Liberal	Sir Edward Grey, Bt	Liberal	Sir Edward Grey, Bt	Liberal	Sir Edward Grey, Bt	Liberal	Sir Edward Grey, Bt	Liberal	Sir Edward Grey	Liberal	Sir Edward Grey	Liberal	Sir Edward Grey	Liberal	Agricultural	Non-conformist
Bishop Auckland	James Mellor Paulton	Liberal	James Mellor Paulton	Liberal	James Mellor Paulton	Liberal	James Mellor Paulton	Liberal	James Mellor Paulton	Liberal	James Mellor Paulton	Liberal	Sir Henry Havelock-Allan	Liberal	Sir Henry Havelock-Allan	Liberal	Mining & Agricultural	Anglican
Chester-le-Street	James Joicey	Liberal	James Joicey	Liberal	James Joicey	Liberal	Sir James Joicey, Bt	Liberal	Sir James Joicey, Bt	Liberal	John Wilkinson Taylor	Independent Labour > Labour	John Wilkinson Taylor	Labour	John Wilkinson Taylor	Labour	Mining	
Cleveland	Henry Fell Pease	Liberal	Henry Fell Pease	Liberal	Henry Fell Pease	Liberal	Henry Fell Pease	Liberal	Alfred Pease	Liberal	Herbert Samuel	Liberal	Herbert Samuel	Liberal	Herbert Samuel	Liberal	Agricultural & Mining	Methodist / Primitive Methodist
Darlington	Theodore Fry	Liberal	Theodore Fry	Liberal	Theodore Fry	Liberal	Arthur Pease	Liberal Unionist	Herbert Pease	Liberal Unionist	Herbert Pease	Liberal Unionist	Ignaz Trebitsch-Lincoln	Liberal	Herbert Pease	Liberal Unionist	Industrial / Urban	Non-conformist
Durham	Thomas Milvain	Conservative	Thomas Milvain	Conservative	Matthew Fowler	Liberal	Matthew Fowler	Liberal	Hon. Arthur Elliot	Liberal Unionist	John Waller Hills	Liberal Unionist	John Waller Hills	Conservative	John Waller Hills	Liberal Unionist	Urban	Anglican
Durham Mid	William Crawford	Liberal-Labour	William Crawford	Liberal-Labour	John Wilson	Liberal-Labour	John Wilson	Liberal-Labour	John Wilson	Liberal-Labour	John Wilson	Liberal	John Wilson	Liberal	John Wilson	Liberal	Mining	Methodist / Primitive Methodist
Durham North West	Llewellyn Atherley-Jones	Liberal	Llewellyn Atherley-Jones	Liberal	Llewellyn Atherley-Jones	Liberal	Llewellyn Atherley-Jones	Liberal	Llewellyn Atherley-Jones	Liberal	Llewellyn Atherley-Jones	Liberal	Llewellyn Atherley-Jones	Liberal	Llewellyn Atherley-Jones	Liberal	Mining & Ironworks	
Durham South East	Sir Henry Havelock-Allan, Bt	Liberal	Havelock-Allan, Bt	Liberal Unionist	Joseph Richardson	Liberal	Sir Henry Havelock-Allan, Bt	Liberal Unionist	Frederick Lambton	Liberal Unionist	Viscount Lambton	Liberal Unionist	Evan Hayward	Liberal	Evan Hayward	Liberal	Agricultural	
Gateshead	Hon. Walter James	Liberal	Walter James	Liberal	Hon. Walter James	Liberal	Sir William Allen	Liberal	Sir William Allen	Liberal	John Johnson	Liberal	Harold Eveston	Liberal	Sir Harold Eveston	Liberal	Industrial / Mining	Non-conformist / Catholic
Hartlepool, The	Thomas Richardson	Liberal	Thomas Richardson	Liberal Unionist	Christopher Furness	Liberal	Sir Thomas Richardson	Liberal Unionist	Christopher Furness	Liberal	Sir Christopher Furness	Liberal	Sir Christopher Furness	Liberal	Stephen Furness	Liberal	Industrial / Urban	Non-conformist
Hesham	Miles MacInnes	Liberal	Miles MacInnes	Liberal	Nathaniel Clayton	Conservative	Wentworth Beaumont	Liberal	Wentworth Beaumont	Liberal	Wentworth Beaumont	Liberal	Richard Dunning	Liberal	Richard Dunning	Liberal	Agricultural	
Houghton-le-Spring	John Wilson	Liberal-Labour	Nicholas Wood	Conservative	Henry Fenwick	Liberal	Robert Cameron	Liberal	Robert Cameron	Liberal	Robert Cameron	Liberal	Robert Cameron	Liberal	Robert Cameron	Liberal	Mining	Methodist / Primitive Methodist
Jarrow	Charles Palmer	Liberal	Charles Palmer	Liberal	Sir Charles Palmer, Bt	Liberal	Sir Charles Palmer, Bt	Liberal	Sir Charles Palmer, Bt	Liberal	Sir Charles Palmer, Bt	Liberal	Godfrey Mark Palmer	Liberal	Godfrey Mark Palmer	Liberal	Industrial / Urban	Non-conformist / Catholic
Middlesbrough	Isaac Wilson	Liberal	Isaac Wilson	Liberal	Havelock Wilson	Independent Labour	Havelock Wilson	Liberal-Labour	Samuel Sadler	Conservative	Havelock Wilson	Liberal	Perry Williams	Liberal	Perry Williams	Liberal	Industrial / Urban	
Morpeth	Thomas Burt	Liberal-Labour	Thomas Burt	Liberal-Labour	Thomas Burt	Liberal-Labour	Thomas Burt	Liberal-Labour	Thomas Burt	Liberal-Labour	Thomas Burt	Liberal	Thomas Burt	Liberal	Thomas Burt	Liberal	Mining & Agricultural	
Newcastle-upon-Tyne 1	Joseph Cowen	Independent Liberal	John Morley	Liberal	John Morley	Liberal	Sir Charles Hammond	Conservative	Sir Walter Plummer	Conservative	Walter Hudson	Labour	Walter Hudson	Labour	Walter Hudson	Labour	Industrial / Urban	Non-conformist
Newcastle-upon-Tyne 2	John Morley	Liberal	James Craig	Liberal	Sir Charles Hammond	Conservative	William Cruddas	Conservative	George Fenwick	Conservative	Thomas Cairns	Liberal	Edward Shortt	Liberal	Edward Shortt	Liberal	Industrial / Urban	Non-conformist
South Shields	James Cochran Stevenson	Liberal	James Cochran Stevenson	Liberal	James Cochran Stevenson	Liberal	William Robson	Liberal	William Robson	Liberal	Sir William Robson	Liberal	Sir William Robson	Liberal	Russell Rea	Liberal	Industrial / Urban	Non-conformist
Stockton-on-Tees	Joseph Dadds	Liberal	Joseph Dadds	Liberal	Thomas Wighams	Conservative	Samuel Theodore Doxford	Liberal	Sir Robert Roper	Conservative	Samuel Storey	Liberal	Jonathan Samuel	Liberal	Jonathan Samuel	Liberal	Industrial / Urban	Non-conformist
Sunderland 1	Sir Edward Gosley	Liberal	Sir Edward Gosley	Liberal	Sir Edward Gosley	Liberal	Samuel Storey	Liberal	Samuel Storey	Liberal	James Stuart	Conservative	Samuel Storey	Independent Conservative	Samuel Storey	Liberal	Industrial / Urban	Non-conformist
Sunderland 2	Samuel Storey	Liberal	Samuel Storey	Liberal	Samuel Storey	Liberal	Samuel Storey	Liberal	John Shapton Grey	Conservative	Thomas Summerbell	Labour	James Knott	Conservative	Frank Goldstone	Labour	Industrial / Urban	Non-conformist
Tynemouth	Richard Donkin	Conservative	Richard Donkin	Conservative	Richard Donkin	Conservative	Richard Donkin	Conservative	Richard Donkin	Conservative	Herbert Craig	Liberal	Herbert James Craig	Liberal	Herbert Craig	Liberal	Industrial / Urban	Non-conformist
Tyneside	Albert Grey	Liberal	Wentworth Beaumont	Liberal	Jack Pease	Liberal	Jack Pease	Liberal	Hugh Smith	Liberal Unionist	J.M. Robertson	Liberal	J. M. Robertson	Liberal	J. M. Robertson	Liberal	Urban	Non-conformist
Wansbeck	Charles Fenwick	Liberal-Labour	Charles Fenwick	Liberal-Labour	Charles Fenwick	Liberal-Labour	Charles Fenwick	Liberal-Labour	Charles Fenwick	Liberal-Labour	Charles Fenwick	Liberal	Charles Fenwick	Liberal	Charles Fenwick	Liberal	Mining	
Liberal	19	0	18	0	18	0	15	0	12	0	18	0	20	0	20	0	Mine Owner	
Conservative	2	0	3	0	4	0	4	0	7	0	1	0	2	0	0	0	Landowner	
Liberal-Labour	4	0	3	0	3	0	4	0	3	0	0	0	0	0	0	0	Industrialist / Businessman	
Liberal Unionist	0	0	2	0	0	0	3	0	4	0	3	0	0	0	2	0	Lawyer / Journalist / Independent Means	
Independent Liberal	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Trades Unionist	
Independent Labour					1						3		3					
Independent Labour > Labour											1							
Independent Conservative													1					
	26	0	26	0	26	0	26	0	26	0	26	0	26	0	26	0		

* Based on Pelling Social Geography of British Elections 1850-1910

It is very important to note with this latter analysis that Members of Parliament were not paid until after the passing of the 1911 Parliament Act, so the cohort from which candidates were selected was generally limited, shown by the presence of lawyers and journalists, able to carry on their careers as well as being MPs, and land, mine, and business owners with independent means of support. Given this constraint, the frequency of mine owners and Trade Unionists in mining constituencies, and of industrialists and businessmen in industrial constituencies is

striking. It can also be seen, reflecting the point made earlier in connection with Sunderland that as the period progressed, and especially by the 1910 elections, the local connection between voter and representatives was starting to become less important, with, for example, no mine owners after the 1900 election, and an increasing number of lawyers and journalists.

Parliamentary Votes

Another way of examining the relationship between constituency, representative, and issue is to look at voting behaviour by those representatives on major issues. An examination of voting on divisions in the House of Commons on three major bills uncovers a number of interesting facets.⁴³⁵ The three bills chosen are the Eight Hours Bill, the Workmen's Compensation Act (1887) Extension bill, and the Licensing Bill.⁴³⁶ Each of these reflect both large national themes and areas of local concern. The Eight Hours Bill had, in various forms, been debated in the House of Commons since 1804, but it was finally passed in December 1908. There were many elements to the debate, but they can be summarised as follows – firstly whether it was the role of parliament to interfere in the hours that employees worked, secondly whether restricting working hours would result in higher or lower output, and thirdly the fact that different mining districts operated different rules, and that setting a single standard across them all would create as many losers as winners. The Workmen's Compensation Act (1887) Extension bill (1900) was a simpler affair, in that it aimed to extend the coverage of the original act to Agricultural workers. The Licensing Bill (1908) was a more social issue. The Liberal Government argued for

⁴³⁵ Important to note that in each case the division vote is on the Third Reading of the Bill, technically the point at which the HoC approves a bill. This is not necessarily the point at which the deep divisions are surfaced during a Bill's passage, so these are *indicative* of attitudes. An opportunity therefore exists to explore this area in much more detail through examination of the individual MPs' contributions (or otherwise) to the debates.

⁴³⁶ Voting details were taken from <https://api.parliament.uk/historic-hansard/index.html>

limiting licenses with the aim of closing a third of all public houses in England and Wales. The Licensing Bill also contained other measures including a reduction in Sunday opening hours and a ban on the employment of women in pubs. It might be expected that constituencies with mining representatives would be in favour of the Eight Hours Bill, and with mine owning representatives to be against. With the Workmen's Compensation Act (1887) Extension bill it would be expected that agricultural constituency representatives would be in favour, and with the Licensing Bill constituencies with strong Methodist / non-conformist views would be in favour.

Figure 44 – Voting on the Eight Hours Bill 1897, 1901, 1908

EIGHT HOURS BILL											
(Elected in the 1895 General Election)				(Elected in the 1900 General Election)				(Elected in the 1906 General Election)			
1897				1901				1908			
Constituency	MP	Party	Vote	MP	Party	Vote	MP	Party	Vote	Economic Geography	Religious Makeup *
Barnard Castle	Sir Joseph Pease, Bt	Liberal	NOE	Sir Joseph Pease, Bt	Liberal	NOE	Henderson, Arthur	Labour	Did not vote	Mining	Non-conformist
Berwick-upon-Tweed	Sir Edward Grey, Bt	Liberal	Did not vote	Sir Edward Grey, Bt	Liberal	Did not vote	Grey, Rt Hon. Sir Edward	Liberal	Did not vote	Agricultural	Non conformist
Bishop Auckland	James Mellor Paulton	Liberal	NOE	James Mellor Paulton	Liberal	NOE	Paulton, James Mellor	Liberal	NOE	Mining & Agricultural	Anglican
Chester-le-Street	Sir James Joicey, Bt	Liberal	NOE	Sir James Joicey, Bt	Liberal	NOE	Taylor, John Wilkinson	Independent Labour > Labour	AYE	Mining	
Cleveland	Henry Fell Pease	Liberal	AYE	Alfred Pease	Liberal	Did not vote	Samuel, Herbert	Liberal	AYE	Agricultural & Mining	Methodist / Primitive Methodist
Darlington	Arthur Pease	Liberal Unionist	Did not vote	Herbert Pease	Liberal Unionist	Did not vote	Pease, Herbert	Liberal Unionist	NOE	Industrial / Urban	Non conformist
Durham	Matthew Fowler	Liberal	Did not vote	Hon. Arthur Elliot	Liberal Unionist	Did not vote	Hills, John Waller	Liberal Unionist	Did not vote	Urban	Anglican
Durham Mid	John Wilson	Liberal-Labour	NOE	John Wilson	Liberal-Labour	NOE	Wilson, John	Liberal	AYE	Mining	Methodist / Primitive Methodist
Durham North West	Llewellyn Atherley-Jones	Liberal	Did not vote	Llewellyn Atherley-Jones	Liberal	Did not vote	Atherley-Jones, Llewellyn	Liberal	Did not vote	Mining & Ironworks	
Durham South East	Sir Henry Havelock-Allan, Bt	Liberal Unionist	NOE	Frederick Lambton	Liberal Unionist	NOE	Lambton, Viscount	Liberal Unionist	NOE	Agricultural	
Gateshead	Sir William Allan	Liberal	AYE	Sir William Allan	Liberal	Did not vote	Johnson, John	Liberal	AYE	Industrial / Mining	Non-conformist / Catholic
Hartlepool, The	Sir Thomas Richardson	Liberal Unionist	Did not vote	Christopher Furness	Liberal	Did not vote	Furness, Sir Christopher	Liberal	NOE	Industrial / Urban	Non conformist
Hexham	Wentworth Beaumont	Liberal	Did not vote	Wentworth Beaumont	Liberal	NOE	Beaumont, Wentworth	Liberal	Did not vote	Agricultural	
Houghton-le-Spring	Robert Cameron	Liberal	NOE	Robert Cameron	Liberal	Did not vote	Cameron, Robert	Liberal	AYE	Mining	Methodist / Primitive Methodist
Jarrow	Sir Charles Palmer, Bt	Liberal	NOE	Sir Charles Palmer, Bt	Liberal	Did not vote	Palmer, Sir Charles	Liberal	Did not vote	Industrial / Urban	Non-conformist / Catholic
Middlesbrough	Havelock Wilson	Liberal-Labour	Did not vote	Samuel Sadler	Conservative	Did not vote	Wilson, Havelock	Liberal	Did not vote	Industrial / Urban	
Morpeth	Thomas Burt	Liberal-Labour	NOE	Thomas Burt	Liberal-Labour	NOE	Burt, Thomas	Liberal	AYE	Mining & Agricultural	
Newcastle-upon-Tyne	Sir Charles Hamond	Conservative	Did not vote	Sir Walter Plummer	Conservative	NOE	Hudson, Walter	Labour	AYE	Industrial / Urban	Non conformist
	William Cruddas	Conservative	Did not vote	George Renwick	Conservative	NOE	Cairns, Thomas	Liberal	Did not vote	Industrial / Urban	Non conformist
South Shields	William Robson	Liberal	Did not vote	William Robson	Liberal	Did not vote	Robson, Sir William	Liberal	Did not vote	Industrial / Urban	Non conformist
Stockton-on-Tees	Jonathan Samuel	Liberal	AYE	Sir Robert Ropner	Conservative	NOE	Ropner, Sir Robert	Conservative	NOE	Industrial / Urban	Non conformist
Sunderland	Theodore Doxford	Conservative	NOE	Theodore Doxford	Conservative	NOE	Stuart, James	Liberal	Did not vote	Industrial / Urban	Non conformist
	Sir Edward Gourley	Liberal	AYE	John Stapylton Grey Pemberton	Conservative	Did not vote	Summerbell, Thomas	Labour	AYE	Industrial / Urban	Non conformist
Tynemouth	Richard Donkin	Conservative	NOE	Frederick Leverton Harris	Conservative	NOE	Craig, Herbert	Liberal	Did not vote	Industrial / Urban	Non conformist
Tyneside	Jack Pease	Liberal	Did not vote	Hugh Smith	Liberal Unionist	Did not vote	Robertson, J.M.	Liberal	AYE	Urban	Non conformist
Wansbeck	Charles Fenwick	Liberal-Labour	NOE	Charles Fenwick	Liberal-Labour	NOE (Teller)	Fenwick, Charles	Liberal	AYE	Mining	

In the final 1908 vote 10 North East members voted Aye, 5 voted Noe, 11 did not vote. The 5 Noes all had mine owning interests and in party terms were Liberals, Liberal Unionists as well as Conservatives. Most of the Ayes had miners as voters.

Figure 45 – Voting on the 1908 Licensing Bill

LICENSING BILL 1908					
(Elected in 1906 General Election)					
Constituency	MP	Party	Vote	Economic Geography	Religious Makeup *
Barnard Castle	Arthur Henderson	Labour	AYE	Mining	Non-conformist
Berwick-upon-Tweed	Rt Hon. Sir Edward Grey	Liberal	AYE	Agricultural	Non conformist
Bishop Auckland	Paulton, James Mellor	Liberal	AYE	Mining & Agricultural	Anglican
Chester-le-Street	John Wilkinson Taylor	Independent	AYE	Mining	
Cleveland	Herbert Samuel	Liberal	AYE	Agricultural & Mining	Methodist / Primitive Methodist
Darlington	Herbert Pease	Liberal Union	Did not vote	Industrial / Urban	Non conformist
Durham	John Waller Hills	Liberal Union	NOE	Urban	Anglican
Durham Mid	John Wilson	Liberal	AYE	Mining	Methodist / Primitive Methodist
Durham North West	Llewellyn Atherley-Jones	Liberal	AYE	Mining & Ironworks	
Durham South East	Viscount Lambton	Liberal Union	NOE	Agricultural	
Gateshead	John Johnson	Liberal	AYE	Industrial / Mining	Non-conformist / Catholic
Hartlepoons, The	Sir Christopher Furness	Liberal	AYE	Industrial / Urban	Non conformist
Hexham	Richard Durning Holt *	Liberal	AYE	Agricultural	
Houghton-le-Spring	Robert Cameron	Liberal	AYE	Mining	Methodist / Primitive Methodist
Jarrow	Sir Charles Palmer	Liberal	Did not vote	Industrial / Urban	Non-conformist / Catholic
Middlesbrough	Havelock Wilson	Liberal	Did not vote	Industrial / Urban	
Morpeth	Thomas Burt	Liberal	AYE	Mining & Agricultural	
Newcastle-upon-Tyne	Walter Hudson	Labour	AYE	Industrial / Urban	Non conformist
	Thomas Cairns	Liberal	Did not vote	Industrial / Urban	Non conformist
South Shields	Sir William Robson	Liberal	AYE	Industrial / Urban	Non conformist
Stockton-on-Tees	Sir Robert Ropner	Conservative	Did not vote	Industrial / Urban	Non conformist
Sunderland	James Stuart	Liberal	AYE	Industrial / Urban	Non conformist
	Thomas Summerbell	Labour	AYE	Industrial / Urban	Non conformist
Tynemouth	Herbert Craig	Liberal	AYE	Industrial / Urban	Non conformist
Tyneside	J.M. Robertson	Liberal	Did not vote	Urban	Non conformist
Wansbeck	Charles Fenwick	Liberal	AYE	Mining	
	* Elected in 1907				

17 voted Aye across party lines, the two Noes were Liberal Unionists in mainly Anglican rather than non-conformist areas.

Figure 46 – Voting on The Workmen’s Compensation Act (1887) Extension bill

WORKMEN'S COMPENSATION ACT (1897) EXTENSION BILL. 1900					
(Elected in the 1895 General Election)					
Constituency	MP	Party	Vote	Economic Geography	Religious Makeup *
Barnard Castle	Sir Joseph Pease, Bt	Liberal	Did not vote	Mining	Non-conformist
Berwick-upon-Tweed	Sir Edward Grey, Bt	Liberal	NOE	Agricultural	Non conformist
Bishop Auckland	James Mellor Paulton	Liberal	Did not vote	Mining & Agricultural	Anglican
Chester-le-Street	Sir James Joicey, Bt	Liberal	Did not vote	Mining	
Cleveland	Henry Fell Pease	Liberal	Did not vote	Agricultural & Mining	Methodist / Primitive Methodist
Darlington	Arthur Pease	Liberal Unionist	AYE	Industrial / Urban	Non conformist
Durham	Arthur Elliot *	Liberal	AYE	Urban	Anglican
Durham Mid	John Wilson	Liberal-Labor	NOE	Mining	Methodist / Primitive Methodist
Durham North West	Llewellyn Atherley-Jones	Liberal	Did not vote	Mining & Ironworks	
Durham South East	J Richardson	Liberal Unionist	NOE	Agricultural	
Gateshead	Sir William Allan	Liberal	NOE	Industrial / Mining	Non-conformist / Catholic
Hartlepoons, The	Sir Thomas Richardson	Liberal Unionist		Industrial / Urban	Non conformist
Hexham	Wentworth Beaumont	Liberal	Did not vote	Agricultural	
Houghton-le-Spring	Robert Cameron	Liberal	NOE	Mining	Methodist / Primitive Methodist
Jarrow	Sir Charles Palmer, Bt	Liberal	Did not vote	Industrial / Urban	Non-conformist / Catholic
Middlesbrough	Havelock Wilson	Liberal-Labor	Did not vote	Industrial / Urban	
Morpeth	Thomas Burt	Liberal-Labor	NOE	Mining & Agricultural	
Newcastle-upon-Tyne	Sir Charles Hamond	Conservative	Did not vote	Industrial / Urban	Non conformist
	William Cruddas	Conservative	Did not vote	Industrial / Urban	Non conformist
South Shields	William Robson	Liberal	Did not vote	Industrial / Urban	Non conformist
Stockton-on-Tees	Jonathan Samuel	Liberal	NOE	Industrial / Urban	Non conformist
Sunderland	Theodore Doxford	Conservative	AYE	Industrial / Urban	Non conformist
	Sir Edward Gourley	Liberal	NOE	Industrial / Urban	Non conformist
Tynemouth	Richard Donkin	Conservative	AYE	Industrial / Urban	Non conformist
Tyneside	Jack Pease	Liberal	Did not vote	Urban	Non conformist
Wansbeck	Charles Fenwick	Liberal-Labor	NOE	Mining	
	* Elected in 1898				

The four Ayes were 2 Conservatives, 1 Liberal and 1 Liberal Unionist. Intriguingly those areas with an agricultural economic geography either did not vote or voted Noe.

This supports the hypothesis that voting behaviour was less about class consciousness than it was about a pragmatic choice of someone who was perceived to have an empathetic relationship with the major economic interests in the area. Perhaps the most interesting aspect of all these votes is how many did not vote, an area for future analysis.

The Stockton example

The 1900 election in Stockton saw Liberal Alderman Jonathon Samuel defend his seat against Conservative Colonel Sir Robert Ropner. In his campaign speeches, Samuel focussed on three themes. Firstly, his relationship with the voters; speaking at shipyards in Thornaby he noted:

” ...he was one like themselves. He was proud of having sprung from the ranks – (cheers) – and as he would show them had especially looked after the interests of Labour in Parliament”.⁴³⁷

He challenged his opponent to point to any time he had voted against the interests “...of the working men of Stockton and Thornaby, or even the commercial classes.”⁴³⁸ He then went on to reference the efforts he and J.A. Pease (Tyneside MP) had gone to amend the Workmen’s Compensation Act to address the anomaly that shipyard workers ceased to be covered by the Act once the ship was launched. It is noticeable in these speeches that he made little reference to the Boer War, which his opponent, Ropner, was supporting. The Northern Echo was clearly in

⁴³⁷ Northern Echo, “*Liberal Campaign in Stockton.*” 25 Sept. 1900. British Library Newspapers, <https://link.gale.com/apps/doc/BA3200280977/BNCN?u=unn&sid=BNCN&xid=c359cb16>. Accessed 8 Oct. 2020.

⁴³⁸ Northern Echo, 25 Sept. 1900 *ibid.*

favour of Samuel, reporting him to ‘...have the very best of meetings’.⁴³⁹ The paper was keen to point out mistakes made by Ropner, especially with reference to the Workmen’s Compensation Act.⁴⁴⁰ Intriguingly, in the same edition, Samuel is reported as remarking at a meeting in Thornaby that ...”did the people of Stockton and Thornaby imagine it was possible that a man who was not a native of this country could have a greater love of it than he could...”. Ropner was born in 1838 in Magdeburg, Saxony, in the Kingdom of Prussia. Furthermore, showing the importance of those local connections Samuel gave a “...stinging indictment of the contemptible and corrupt methods of Col. Ropner’s supporters in appealing for votes on the score of the money he has given to the two towns and their various organisations.”⁴⁴¹ Local links and association with the voters could be used both ways, negatively as well as positively in the search for victory. In the final count, Col Ropner won the contest with a majority of 389.⁴⁴²

The Stockton example above clearly shows the importance of the sense of ‘connection’ between voter and representative, and the primacy of it, even in an emotive election such as the Khaki election of 1900 where sentiment for or against the war ran very high.⁴⁴³ But it can also be seen in the regular return of Trade Unionists in Durham-Mid, in the retention by Sir Edward Grey of the rural seat of Berwick-upon-Tweed, and the monopoly the Palmer family had on the seat of Jarrow. These were pragmatic voting choices, almost transactional, based more on

⁴³⁹ Northern Echo, “*Election Notes.*” 26 Sept. 1900. British Library Newspapers, <https://link.gale.com/apps/doc/BA3200280992/BNCN?u=unn&sid=BNCN&xid=15da7756>. Accessed 8 Oct. 2020.

⁴⁴⁰ Northern Echo, “*The Colonel’s Slip*”, “*Election Notes.*” 26 Sept. 1900 Ibid.

⁴⁴¹ Northern Echo, “*A home truth*” “*Election Notes.*” 26 Sept. 1900 Ibid.

⁴⁴² Colonel Ropner 5,262; Alderman Samuel 4,873. “THE GENERAL ELECTION.” Northern Echo, 3 Oct. 1900. British Library Newspapers, <https://link.gale.com/apps/doc/BA3200281101/BNCN?u=unn&sid=BNCN&xid=5e02b647>. Accessed 8 Oct. 2020.

⁴⁴³ For more detail on this see Guy Hinton (2015) “*Newcastle and The Boer War: Regional Reactions to An Imperial War*”, Northern History, 52:2, 272-294, DOI:

10.1179/0078172X15Z.00000000092 <http://dx.doi.org/10.1179/0078172X15Z.00000000092>.

the perception of who would best represent community interests in parliament than on party loyalty, or ideology.

The nature and composition of the Liberal party in the North East, and the economic and social geography of the constituencies seem to have been important factors in defining voter behaviour in the period under discussion. Following their heavy defeat in 1895 the Liberals tried to find ways of reunifying the party but were unable to do so. The Liberal party machinery, particularly the National Liberal Federation (originally founded by Joseph Chamberlain in 1877 to pursue a more radical agenda and attempt to recreate the success of his Birmingham Caucus on a national scale) remained under the control of the Gladstone wing of the party.⁴⁴⁴ Gladstone used the annual NLF meetings as a platform to consolidate various Liberal causes, particularly at the 1891 Newcastle meeting, out of which emerged the radical 'Newcastle' programme.⁴⁴⁵ The programme was the culmination of years of debate across the party, and described as a 'catch all of demands' it was intended to create a set of principles which all Liberals could support, a manifesto for Government that all parts of the party could sign up to.⁴⁴⁶ Focussing on the extension of religious and political liberties; community self-government; removal of vested interest which conflicted with wider community interests, and social reform to improve the lot of the working classes.⁴⁴⁷ The Newcastle programme retained the principle of Irish Home Rule but linked it with Welsh and Scottish disestablishment, reductions in factory work hours, free education, land reform, the provision of a local

⁴⁴⁴ <https://liberalhistory.org.uk/history/the-newcastle-programme/>.

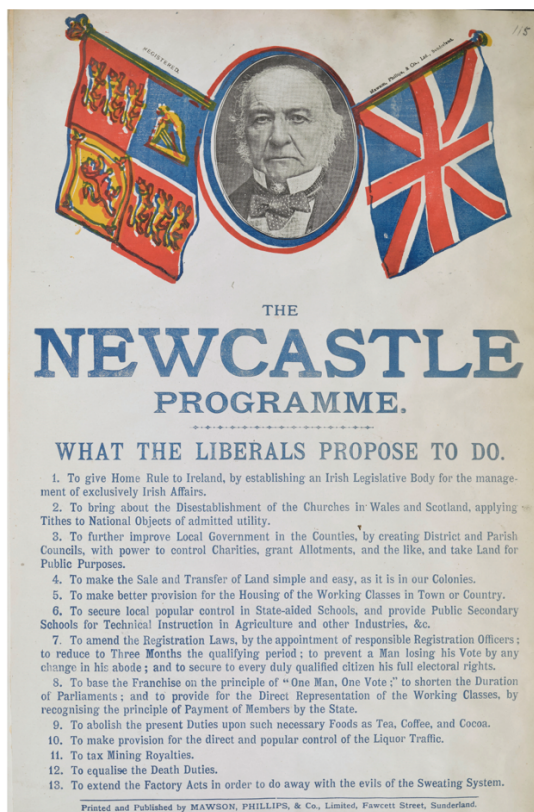
⁴⁴⁵ The programme became known as the 'Newcastle Programme' because it was at the 1891 meeting held in Newcastle that the programme was adopted.

⁴⁴⁶ John Belcham, *Popular Radicalism in Nineteenth Century Britain*, (London: Palgrave, 1996) p 142.

⁴⁴⁷ John Belcham, p 142.

veto on drink sales; employers' liability for workers' accidents, reform of the House of Lords, and the removal of duties on basic foods. These principles of radical liberalism, for open government, minimal or no intervention by Government at home or abroad, and for personal freedom and local community-based democracy can be found as part of many progressive political platforms well into the twentieth century, all of them mixed with a healthy dose of pragmatism and preference for change through constitutional, rather than revolutionary means.

Figure 47 – Newcastle Programme Poster ⁴⁴⁸



It has been argued that Gladstonian standards and themes of sound finance, well managed government, and self-help (understood in a local communal, as well

⁴⁴⁸ Image found in Naomi Lloyd-Jones, The 1892 general election in England: Home Rule, the Newcastle programme and positive Unionism, *Historical Research*, Volume 93, Issue 259, February 2020, Pages 73–104, <https://doi.org/10.1093/hisres/htz009> and ©British Library Board (General Reference Collection, 1899.r.49, vol. i, fo. 115).

as purely individual, framework) chimed closely with long-standing popular radical values of independence and suspicion of central government that would have been a common place amongst voters.⁴⁴⁹ Whether Gladstone was fully behind the details of the Newcastle programme is contested – Roy Jenkins for example argued that he neither the interests nor the energy for the programme and that he saw it as a means to secure his main interest, Home Rule.⁴⁵⁰ In 1892 the Liberals won but had to rely on Irish support to form a government, and they were unable to enact much of the programme, not helped by strong opposition in the Lords. The programme was dropped by the 1895 election, and the Liberals were out of government for another ten years. A programme designed to appeal to what instinctively looked like sectional interests failed to get a strong endorsement nationally at the ballot box in 1892 and failed to make a significant impact in the North East either. The problems with the Newcastle programme and its failure to gather support at elections lay in the failure to address issues that were pertinent to the industrial working-class voter. The National Liberal Federation (NLF) failed to adopt a resolution supporting the eight hour working day, a principle much debated across industry (see discussion in chapter 3 on its implementation at the Scotia Works in Sunderland). The NLF was on the one hand more concerned with issues such as disestablishment that were at the heart of mid-century Radical orthodoxy, and on the other hand strongly influenced by powerful industrial interests and class prejudice.⁴⁵¹ In fact, the eight hour day became one of the key reasons for the emerging gap between the old Radicals, the

⁴⁴⁹ Robert Grey, Review of: *'Class, Politics and Historical 'Revisionism' Liberty, Retrenchment and Reform: Popular Liberalism in the Age of Gladstone, 1860-1880* by Eugenio F. Biagini; *Currents of Radicalism: Popular Radicalism, Organized Labour and Party Politics in Britain, 1850-1914* by Eugenio F. Biagini and Alastair J. Reid; *Social History*, Vol. 19, No. 2 (May, 1994), p. 213; <https://www.jstor.org/stable/4286197> Accessed: 08-11-2018 15:26.

⁴⁵⁰ Roy Jenkins *'Gladstone'*, (London: Pan MacMillan, 2002), p. 581.

⁴⁵¹ Paul Adelman, *Victorian Radicalism, The Middle Class Experience 1830-1914*, London: Longman, 1984) p 131.

Whig tendency in the Liberal Party, and the emerging labour movement. John Morley, despite being a Newcastle MP was strongly opposed to the idea. Morley resisted pressure from labour leaders in the North East to support a maximum working day of eight hours enforced by law on the grounds that it would interfere in natural economic processes and would be "thrusting an Act of Parliament like a ramrod into all the delicate and complex machinery of British industry". He also believed that it would be wrong to enable the government to interfere in the number of hours a working man would choose to work. This unwillingness to even consider any proactive moves to restrict working hours was politically difficult in Newcastle, not the least because the Northumberland Miners had already been working an eight hour day for a number of years, and there was an instinctive dislike amongst the craft unions of restrictions on how much work their members could do. This was due to the control over work processes that they maintained, and which enabled them to have significant control over production and worker numbers. In the 1892 General Election, Morley kept his seat but came second to the Unionist candidate, Sir Charles Hamond, who was supported by the Eight Hours League and the Social Democratic Federation. Morley was appointed to the government as Chief Secretary for Ireland and at the ensuing by-election Hardie and other socialists advised working men to vote for the Unionist candidate (who supported an Eight Hours Bill for miners). Morley though carried the Newcastle Irish vote, and he comfortably kept his seat.

It is clear from this episode that it was self-interest and a degree of personal loyalty, not policy that played an important part in defining the voting behaviour of voters, at least in Newcastle. The ability to capture a block vote like the Irish was more relevant than developing policy to address specific local issues. It has been

argued that in another constituency, Jarrow, the Liberal Party's success was due to a de facto alliance between capital and labour interests which was underscored by a common and agreed view of the mutual benefits to both sides that could be derived from successful industrial / capitalist enterprises, and it is in these perceptions of interests that the reasons for the tenacious hold of the Liberals in the North East may be found.⁴⁵² It might also be argued that this represented a 'culture of consolidation', resigning themselves to the idea that capitalism could not be beaten.⁴⁵³ As a result of this de facto alliance many trades union officials were aligned to the Liberal banner, whilst at the same time leading industrialists such as Sir Charles Mark Palmer, Sir William Allan and James Joicey were supporters and Members of Parliament.⁴⁵⁴ So, was this simple deference, or mismatch between the great political issues of the day such as Ireland, disestablishment, or foreign policy and the emerging expectations of what politics meant to the newly enfranchised working class voter? In the case of Jarrow and Palmer, a more complex picture emerges, rather as it did with Cowan, Morley, and Newcastle. Jarrow as an urban district owed its existence to the huge Palmer's industrial complex, which contained not just shipbuilding but also the iron and steel works to make the component plates. It also had a number of mines, and it was from the districts around these mines in Hebburn, Boldon and Felling that opposition to Palmer emerged.⁴⁵⁵ In the 1892 election a

⁴⁵² A. W. Purdue (1982) *Jarrow Politics, 1885–1914: The Challenge to Liberal Hegemony*, Northern History, 18:1, p182.

⁴⁵³ This phrase is quoted by Rohan McWilliam in *Radicalism and Popular Culture* in E F Biagini and A J Read (eds) *Currents of Radicalism* Cambridge University Press, 1991, p 63. It was coined by G Stedman Jones in *Languages of Class: studies in English working class history, 1832-1982*, Cambridge, 1983, p 237.

⁴⁵⁴ In 1874 Palmer was elected as a Liberal MP for North Durham and held the seat until the 1885 general election when he was elected for the new Jarrow constituency, which he held until his death in 1907. Joicey was Liberal MP for Chester-le-Street from 1885 to 1906. He was Chairman of the family mining company James Joicey & Co Limited, which operated several collieries in the West Durham coalfield including pits at Beamish and Tanfield.

⁴⁵⁵ Purdue, p 184.

London barrister, Dillon Lewis, stood against Palmer, polling 2,416 votes against Palmer's 7,343 on a turnout of 68.6%. Havelock Wilson, who had won the Middlesbrough seat as Independent Labour in the same election, noted that Palmer was the 'most popular man in the North of England' and that '...any carpetbagger...was assured of a very warm time if he attempted to [beat] Sir Charles.'⁴⁵⁶ Over the next few elections Palmer was challenged by a series of candidates who were unable to overcome the solid support for him from the skilled workers in the shipbuilding and associated trades where their Liberalism or occasional Liberal-Labourism was deeply entrenched, as was their opposition to socialism. The divisions across the constituency though were not that simple. There was the shipbuilding / mining split as well as an intra Irish split between the Catholics of Jarrow and the Protestants of Hebburn.⁴⁵⁷ Palmer never voted against Home Rule so maintained the Catholic support. The Labour Candidate in 1906, Pete Curran, was not helped by rumours that he was not only an atheist but also separated from his wife and living with another woman.⁴⁵⁸ This lack of empathy with the nuances of the local electorate was an error that hampered a number of LRC candidates in their ability to gain seats. Curran in fact won the seat in a by election in 1907, when the Irish Nationalist and Conservative candidates split the Liberal vote enabling him to emerge as a winner, with 33% of the votes, and the Nationalist and Conservative taking 42.5% between them, although he lost it in 1910 (January) to Sir Charles' youngest son, Godfrey Mark Palmer, also a Liberal. Was it a failure by the Labour Party to hold onto the seat, or was a return to a more natural state of affairs? Whilst leading shipbuilding unions such as the Boilermakers and the Shipwrights had joined

⁴⁵⁶ Purdue, p 185.

⁴⁵⁷ There is still an Orange Lodge in the centre of Hebburn.

⁴⁵⁸ Curran had in fact married his second wife in 1898.

the Labour Representation Committee, they had failed to bring their members with them.⁴⁵⁹ The skilled workers in Jarrow and along the southern banks of the Tyne had done as they had done before and voted for a local industrialist who they believed would best represent their interests in Parliament. Popular liberalism came to represent a feeling of self-assertion and independence, perhaps amounting to pride, that had as foundations a cultural network of chapels, schools, trade unions, mutual associations, and other examples of collective self-help. There is also the possibility that 'liberalism', whilst it had some overtly political aspects to it, was actually a constantly moving and developing social construction, able to succeed with both wage earners and enterprise owners. There is the other possibility that it was in fact a studied and careful cultivation of popular political support. But that latter possibility implies a consistent policy relationship between national and local organisations which, as has been shown, simply did not exist in the North East. Much more likely is that it was not the 'big' political or moral issues that determined North Eastern voters' choices, it was a calculation of self-interest, and the decision as to which individual, mine owner, miner, Baronet or Barrister would best represent their interests in Parliament. One of the clearest examples of this pragmatism is the increase in vote for the Conservatives and their tariff policies in the 1910 elections following a decline in shipbuilding between 1906 and 1909.⁴⁶⁰

⁴⁵⁹ Purdue, p 197.

⁴⁶⁰ "There are those who regard it as a paradox to say that Tariff Reform will stimulate home industry. It seems to me a truism. Only by Tariff Reform can you hope to retain colonial preference; only by Tariff Reform can you hope to modify commercial treaties in your favour. Only by Tariff Reform can you secure from unfair competition the home producer in the home market. It will do him no injury in neutral markets, it may give him valuable aid in protected markets. Is it credible, then, that it will not keep capital here that would otherwise go abroad? Is it credible that, if it does, the demand for labour will not increase?" The Conservative Manifesto, January 1910. <http://www.conservativemanifesto.com/1910/jan/january-1910-conservative-manifesto.shtml> Accessed 23 September 2020 15:08.

It is clear then that at a general level voting behaviour in national elections was determined as much by community loyalty as by any other factor. Local knowledge and presence, relationships with leading representatives of networks and groups, whether religious, commercial or Trade Union were as important as support for specific manifesto commitments. Being able or being considered to be able to represent the interests of the constituency or more specifically the communities that voted in that constituency, was the overriding factor. National issues, especially the subject of Ireland, influenced particular groups in specific ways, but were usually not significant enough to make a fundamental change. Candidates were able to shift their party labels, sometimes two or three times, and still retain their seat. In some industrialised areas business owners saw being a Member of Parliament as part of their responsibility to their employees, as well as an opportunity to lobby for their own interests. Thus, national politics as practiced in the North East was a mainly pragmatic exercise of influence and authority, driven less by class or any other kind of awareness than by enlightened self-interest, which, as outlined in the initial research questions, is good example of a process through which individual and community interests were served. As was seen earlier with Industrial disputes, with the use of Joint Stock companies to retain and maintain family and familial control, and with the control of working processes by craft unions, the overriding factor in decision making was self-interest at an individual and community level, not institutionally driven collective consciousness. Political behaviour reflects many aspects of community and individual life, choices reflecting not just individual ideologies but also collective (family, peer group, neighbourhood) attitudes. In one sense the analysis in this chapter is not surprising in that the choices of candidate seem to have been closely related to the economic, social and religious make up of

each constituency. In another sense it is surprising, at least for the first two thirds of the period, that those relationships were quite so untrammelled by ideology and were almost transactional in their nature, especially in a region where the potential for a more collective, possibly class aligned approach might have existed. This is surely down to the complex and diverse nature of the communities that made up the region, communities whose main priority was the maintenance (and improvement) of their own positions without necessarily worrying about other groups. As Granovetter argues, what seems at first to be nonrational behaviour can be seen as rational when the full social situation (in this context the communities) is considered.⁴⁶¹ Rational actors indeed.

⁴⁶¹ Granovetter, *ibid*, p 506

Chapter 6 - Community and Social Construction

“How I envy those clerks who go by to their offices in the morning! There's the day's work cut out for them; no question of mood and feeling; they have just to work at something, and when the evening comes, they have earned their wages, and they are free to rest and enjoy themselves.”

George Gissing, *New Grub Street*, 1891

One of the major underlying themes of this thesis has been about the primacy of community as a means of the collective expression of needs, wants and aspirations. Whether expressed through a desire to maintain employment, control of a company, craft status, voting behaviour or even demarcation disputes, the expression of community through institutional actions or other means was the defining characteristic of collective behaviour. These manifestations also took physical form in ways that communities clustered together. This clustering was driven by, as clustering theory suggests, not just the agglomeration benefits that employers could gain (availability of resources, exchanges of knowledge), but also by the agglomeration benefits that the communities and the individuals within them could gain. These came in the form of employment opportunity information, flexible working, and the ability (for craft workers at least) to exercise control over the supply of labour through the apprenticeship process. Clustering's physical manifestation is the subject of this chapter, which will show the relationships between housing, industry and communities, as well as the ways in which these factors interacted.

The dynamism that drove the region's success owed much to a cultural and social context which encouraged innovation and enterprise. The Newcastle works of Robert Stephenson and Company and those of William Armstrong epitomise that dynamism and its cultural and social context. Funded partly by the Pease family of Darlington Quaker bankers, Stephenson's owed its success not just to the controlling partners but also to the contributions of workers on the shop floor. Two men who

joined the firm as workers moved through the ranks to become important managers: George Crow who was the first foreman and subsequently the works manager; and William Wheallans from the drawing office, who became partner in the firm in 1855. George Stephenson had been a colliery workman, but by 1850 his son Robert had an annual income of some £30,000 and was a Tory MP for Whitby. When he died in 1859, he was buried in Westminster Abbey.⁴⁶² William Armstrong had started his working life as a solicitor, but he built a successful business building hydraulic cranes. He then branched out, first developing the breech loading gun, then naval guns, armaments, and ordnance, and thence to ship and warship building.

Organisations such as the Mining Institute and the Literary and Philosophical Society acted as meeting points for business owners, entrepreneurs, scientists, and others to discuss trends, developments, and opportunities.⁴⁶³ Examples of organisational experiment in the region abound. The consumer co-operative movement developed new retail outlets based on the active membership of the working classes. The Co-operative stores provided opportunity for individual development, one example serving as an exemplar of many. The 1911 Jubilee Souvenir History of the Cramlington Co-operative Society has several chapters outlining changes in personnel across the stores, with the story of Mr R Turnbull standing out. He had started as an apprentice in the Newgate Street Co-operative store and in 1901 he rose to become a departmental manager. As the Souvenir tells it, "things went on well, and the Committee were satisfied with the success of the

⁴⁶² Norman McCord, op cit, p55-56; and https://www.gracesguide.co.uk/Robert_Stephenson_and_Co.

⁴⁶³ The 'Lit and Phil' was founded in 1793 as a "conversation club" by the Reverend William Turner and others. Women were able to visit the library from 1804, a library containing works in French, Spanish, German and Latin. The members discussed a wide range of issues, but religion and politics were not allowed. George Stephenson demonstrated his miners' safety lamp there in 1815, and in 1873 Joseph Swan demonstrated his electric lightbulb.

Department.” In 1909 Mr Turnbull left to take over the role of Manager of the Newcastle upon Tyne Co-operative Bakery.⁴⁶⁴

Housing in the North East

However, this economic dynamism was not reflected in the housing conditions for much of the population in Newcastle, as Figure 50 below shows.⁴⁶⁵

Figure 48 – Overcrowding in Newcastle 1891 - 1911

	Population				Families				% of population Over 2 per room
	In 1 Room		In 2 Rooms		In 1 Room		In 2 Rooms		
	No.	%	No.	%	No.	%	No.	%	
1891	15851	8.5	51607	27.7	5016	13.2	11520	30.4	32.9
1901	12821	6.0	51432	23.9	4249	9.5	11796	26.4	30.5
1911	13709	5.3	58494	22.8	4581	8.3	13087	23.7	31.6

Even in 1911, there were still 4,581 families living in a single room in Newcastle. In 1850, housing conditions in those areas of the North East that had seen the most substantial growth in economic activity and population were as bad as could be found anywhere in the country. In Newcastle-upon-Tyne there were 140 families in thirty-four houses in Blenheim Street, which each consisted of four rooms above ground and two cellars.⁴⁶⁶

The expansion of industry and consequential housing developments can clearly be seen in these maps of Newcastle from 1864, 1899, and 1921, and the 1914 map of Sunderland.⁴⁶⁷

⁴⁶⁴ W. Simpson, 'Jubilee Souvenir. A Short History of the Cramlington District Co-operative Society Limited'. Manchester 1912, p 134.

⁴⁶⁵ Adapted from Bill Lancaster (ed) *Working Class Housing on Tyneside 1850-1939*, (Whitley Bay: Bewick Press, 1994), p 20.

⁴⁶⁶ First Report of the Royal Commission on The Housing of the Working Classes, 1884-85 [C.4402] [C.4402-I] [C.4402-II] p8. <https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1884-061415?accountid=12860>

⁴⁶⁷ (1864) Northumberland XCVII (includes: Gateshead; Newcastle upon Tyne; W...Surveyed: 1858, Published: 1864; (1899) Durham II.SE (includes: Gateshead; Moot Hall Precincts; Newcastle...Revised: 1894 to 1895, Published: 1899; Durham II (includes: Newburn; Newcastle upon Tyne.)Revised: 1913 to 1914, Published: 1921. Durham VIII (includes: Boldon; Sunderland.) Revised: 1913 to 1914, Published: 1921. All from <https://maps.nls.uk/>, accessed 18/03/2021.

Map 11 Newcastle 1864



Map 12 Newcastle 1899



Map 13 Newcastle 1921



Map 14 Sunderland 1914



These conditions were not exclusive to urban areas, as rural, mining and fishing communities also suffered badly. In some urban areas there were practical constraints on the enlargement of the housing stock, for example Newcastle's Town Moor put a limit on expansion northwards from the river. Gateshead was surrounded by landed estates, and a lot of the land along the banks of the Tyne through Felling, Hebburn, Jarrow and through to South Shields was owned by the Dean and Chapter

of Durham Cathedral, who were often constrained in their ability or willingness to let or lease land.⁴⁶⁸ Compounding these issues was the fact that several big employers, Hawthorn's and Stephenson's in Newcastle for example, were based right in the heart of the city, and with little or no public transport this meant that their workers had to live within close proximity of their workplaces, putting more pressure on the limited housing stock.

By 1891 34% of the population of County Durham were living at a density of more than two per room, and in Northumberland the number was 38%. Gateshead at 40.8%, Newcastle 32.9% and Sunderland at 32.9% were all significantly worse than London at under 20%.⁴⁶⁹ These conditions were not exclusive to urban areas as older mining communities where little had been invested in the housing stock often had overcrowding as bad if not worse than the towns. It was in newer pits and pit villages that investment in better housing and sanitation was more likely to be found, one factor encouraging miners to move between pits.

Mining Communities

Communities in the North East had developed around coal pits as mining activity increased during the sixteenth and seventeenth centuries, concentrated around Tyneside and the Washington area of Wearside. Coal mining continued to grow throughout the nineteenth and early twentieth century. Towns such as Ashington in Northumberland and Hetton-le-Hole and Spennymoor in Durham had coal mines at their core.⁴⁷⁰ These developments contributed to the population increase, as many rural villages grew into small colliery towns as new pits were

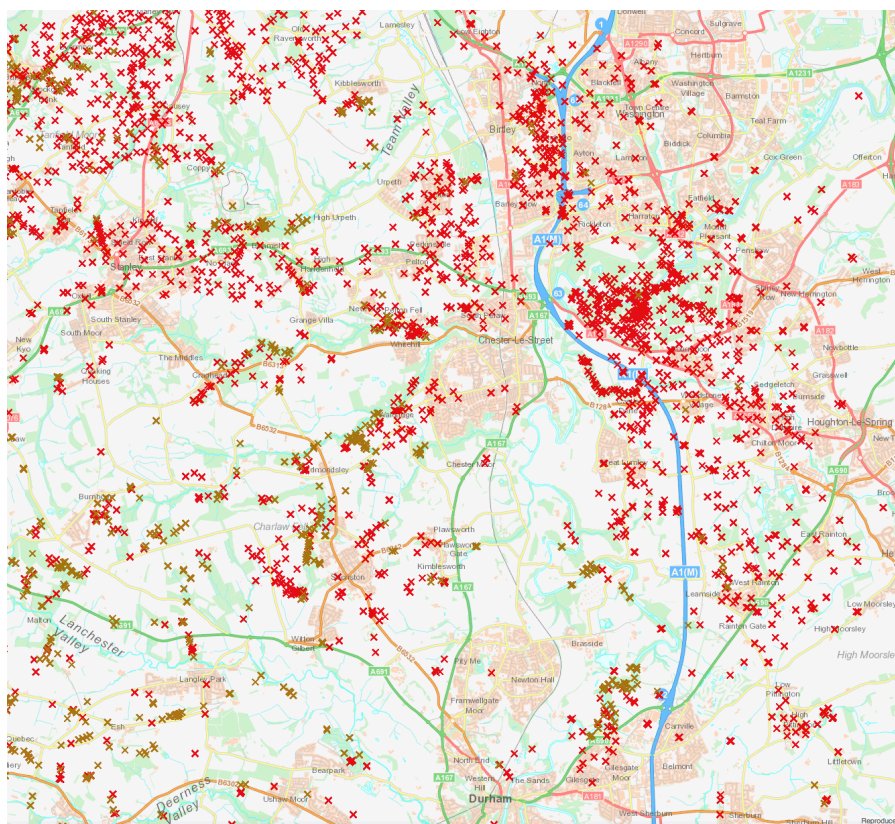
⁴⁶⁸ Norman McCord, p 160

⁴⁶⁹ Norman McCord, p 160

⁴⁷⁰ For a comprehensive list of coal and other mines in the North East see the Durham Mining Museum website <http://www.dmm.org.uk/mindex.htm>.

sunk. In 1787, there were around 7,000 miners employed in North East coal mines, and by 1810 this number had only increased to 10,000. Just over a hundred years later, in 1919, there were 223,000 coal miners working in the region and 154,000 of these were in the county of Durham.⁴⁷¹ Map 16 below shows the extraordinary number of mine workings in one small part of the region, the twelve or so miles between Stanley and Houghton-le-Spring

Map 15 - Overlay of known 18th and 19th century mine workings on OS Map of North Durham ⁴⁷²



As examples of how mining villages developed, Seaton Delaval and Thornley can stand in for many others. Lying in east Northumberland, Seaton Delaval was built on land owned by Lord Hastings, who ruled that only three shops would be allowed in the village, a tailor, butcher, and a grocer / draper. When the first miner-

⁴⁷¹ See <http://englandsnortheast.co.uk/CoalMiningandRailways.html>.

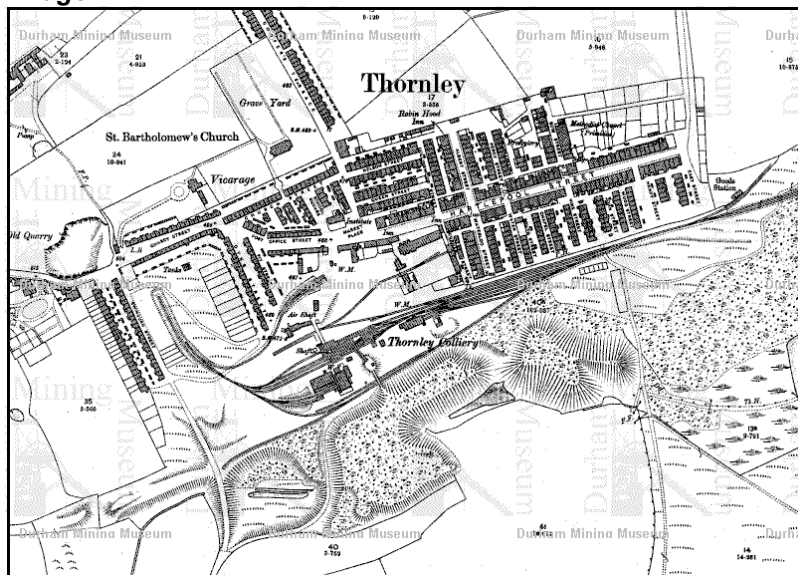
⁴⁷² <http://mapapps2.bgs.ac.uk/coalauthority/home.html> (June 15th 2018)

owned Co-operative Store was opened in 1863, these limitations meant that it had to be built in the nearby village of Seaton Terrace.⁴⁷³ Thornley, a village about five miles east of Durham and five miles west of Peterlee, developed its own infrastructure as the nearest town was another Colliery, Shotton.

Map 16 - Thornley



Map 17 - 1897 Ordnance Survey - relationship between the colliery and the surrounding village.⁴⁷⁴



An Inn, a marketplace, and a Primitive Methodist Chapel are all within the boundaries of the village. This relative isolation, combined with the danger and insecurity (declines in demand, or problems with the mine usually meant closure and

⁴⁷³ Alan Metcalfe, p13-14.

⁴⁷⁴ <http://www.dmm.org.uk/maps/t002os2.htm>.

loss of work and housing) inherent in the work meant that a strong sense of community developed in these villages. Geoffrey Salaman argued that this sense of community was in fact an 'occupational community', because it "...maintained close knit networks of kin, friends, neighbours and workmates".⁴⁷⁵ At a time when there was a gradual reduction in the working week, particularly for those in skilled and semi-skilled occupations, there was a concomitant rise in available free time and with it the desire to use it. Robert Knight wrote:

"What is wanted for every working man is a well-regulated home, that should be his greatest attention...A life of work, and nothing but work, is no life for a man, we should have 'Leisure to live, leisure to love, leisure to taste our freedom'".⁴⁷⁶

These activities often cut across class and other loyalties. Importantly, it meant that members of that community met each other in both work and leisure situations. Obviously, this was more likely in (relatively) remote pit villages, but does this model reflect what happened in the newer industrial communities developing across the North East? The 1884 Royal Commission into Working Class Housing took evidence from John Price, Managing Director of Newcastle Industrial Dwellings.⁴⁷⁷ Asked about the demand for working class housing in Newcastle itself, he noted that the poorest were being driven to live in the suburbs because the rents

⁴⁷⁵ Graeme Salaman, *Community and Occupation – an exploration of work / leisure relationships*, (Cambridge: Cambridge University Press, 1974) p 42.

⁴⁷⁶ Robert Knight, General Secretary of the Boilermakers Union, in the Boilermakers, Annual Report, 1883, p xiii. Quoted in Keith McClelland, 'Time to Work, time to live', p 207, in Patrick Joyce (ed), 'The Historical Meanings of Work', Cambridge, 1987.

⁴⁷⁷ Newcastle Improved Industrial Dwellings Ltd was formed by James Hall, philanthropist and businessman, owner of Hall Bros Steamship Co. The buildings were opened in September 1870 as a block of 40 tenements in New Road opposite the Ragged Schools. The original building was four stories in height and the extensions six. Shops were included and eventually 108 separate flats, and there was also a social recreation room, including a library. The architect, John Johnstone had worked with Sir George Gilbert Scott, and also designed Gateshead Town Hall and Leazes Park synagogue in Newcastle. The flats had no internal sanitation but there were two WCs on each landing and communal washhouses for laundry in the courtyards. Tenants of the Dwellings were offered electric light as early as 1904, but they chose to keep gas. T&W Archives DT.NID & <https://historicengland.org.uk/listing/the-list/list-entry/1242024>.

were 'advanced' in the City. Many houses had been demolished to make way for warehouses and offices, and few replacement houses had been built. He went on to point out that many workmen lived in the city because "they cannot get houses near to their work at the several shipyards which they go to. The shipbuilders are now providing house-accommodation as far as their facilities will allow."⁴⁷⁸ Looking at the developments around Byker and Walker (including R.W. Hawthorn at St Peter's Basin) in 1898 (map 19 below), by this point housing development was mirroring the location of work. To the north of the map there is a clear cluster of housing to the south east of the LNER railway marshalling yards at Heaton.⁴⁷⁹ There was also a developing cluster around St. Peter's, and several houses along the line of the railway as it curves around the north bank of the Tyne, reflecting the number of shipyards and other works along the river.

⁴⁷⁸ First Report of the Royal Commission on The Housing of the Working Classes, 1884-85 [C.4402] [C.4402-I] [C.4402-II] p239.

⁴⁷⁹ <https://maps.nls.uk/view/101099387>.

Map 18 – Clustering around St Peter's and Heaton 1898



Marshalling Yards ex St Peter's Basin industry Shipyards banks of the Tyne and the Wear

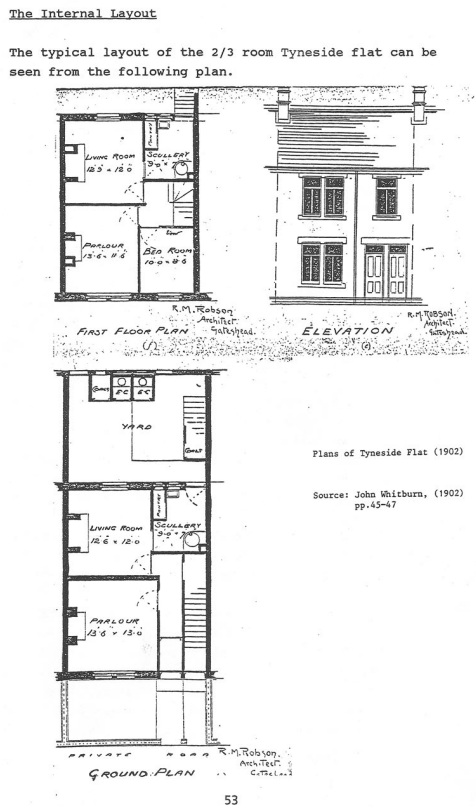
in the latter part of the century was associated with the development of housing and public transport, although it is problematic to argue which was the primary pulling factor. The question that arises, therefore, is what sort of housing and what kind of public transport, and for whom?

Tyneside flats and other housing

A lot of the housing developments were what are colloquially known as Tyneside flats, a terraced building with two front doors, one to an upstairs flat, one to a downstairs flat. Two basic variants have been identified, the first being a two-room

ground floor flat with a three-room flat above, the second a three-room ground floor with a four-room flat above.⁴⁸⁰

Picture 17 – A Tyneside Flat



Generally, these flats were terraced, the terrace sometimes containing both flats and houses, and capable in structure of including corner shops and public houses. This construction could contribute towards the development of a community, as it meant that a series of terraces could contain a range of shops (often owned by local landlords) catering for a lot of practical needs. Rent for these flats would have been a key determinant of who lived there. The Royal Commission on The Housing of the Working Classes called the Reverend William Ephraim Houldey, Vicar of St John’s in Elswick, Newcastle, to give evidence. In response to questions from the Marquess of Salisbury, Rev Houldey said that Tyneside flats in his parish would be

⁴⁸⁰ Kit Pearce, *Newcastle’s Tyneside Flats 1830-1900. By-Law Housing or Cultural Phenomena?* in Bill Lancaster (Ed), *Working Class Housing on Tyneside 1850-1939*, (Whitley Bay: Bewick Press, 1994) p 49-53.

let by the year at about £14 to £16. The perceptive Marquess went on to point out that at those levels of rent tenants would be more likely to be engineers and mechanics, rather than manual workers.⁴⁸¹

Rents at that level would have needed a weekly wage of around 30/-, something that Houldey said was received and often exceeded by workers at Stephenson's and Hawthorn's. The relatively low cost of construction of Tyneside and other terraced housing made them an attractive development opportunity, and towns such as North Shields, Whitley Bay, and Tynemouth saw large changes in population in the final twenty years of the nineteenth century as new housing developed alongside the rail and tramways. The existence of heavy fines for lateness meant that there was little incentive to move away from proximity to work, until a reliable means of transport was available. As wages, at least for skilled workers, rose, and improvements in transport were made there were increasing incentives for the better paid to move away from the crowded town centres and out towards the newly developing suburbs. Part of that incentive would have been the opportunity to, if not join the middle class, at least to emulate them.⁴⁸²

It has been argued that the design of Tyneside flats 'represented a compromise between middle class terraced housing and working-class housing...a concrete expression of the cultural hegemony of the dominant middle classes.'⁴⁸³ That there are similarities can be seen from these two pictures:⁴⁸⁴

⁴⁸¹ First Report of the Royal Commission on The Housing of the Working Classes, 1884-1885, C-4402, 1885, Q7490, p 243, <https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1884-061415?accountid=12860>.

⁴⁸² For a detailed analysis of how this manifested in two other industrial cities, Leeds and Liverpool, see Colin Pooley, "Residential Differentiation in Victorian Cities – A Reassessment", *Transactions of the Institute of British Geographers*, Vol 9, No 2 (1984) pp131-144. <http://www.jstor.org/stable/622165>

⁴⁸³ Pearce, p73.

⁴⁸⁴ Pictures from the Newcastle City Library Photograph Collection.

Picture 18 Heaton



Picture 19 Chapman Street Newcastle



The external differences are minimal – in Picture 18 the middle-class housing in Heaton has bay windows top and bottom, and a wider pavement outside than the Tyneside flats in Picture 19, also in Heaton but closer to the railway. Both terraces

have the same two-front-door configuration with a four-stack chimney for each terraced unit, so the differences would have been reflected in the sorts of families who occupied them, and their relative proximity to their employment and other services. As was shown earlier in the section on the R.W. Hawthorn workers, similar occupations tended towards proximity, and clearly for those workers proximity to the railway was an important factor both in choice of home and work location. For labourers and the lower skilled, proximity to employment was more important, as Figure 61 in the appendix for Panmore Street, Elswick shows.⁴⁸⁵ This street, across the road from the eastern end of Armstrong's is primarily a journeyman's residential area, with only one labourer listed.

Figure 49 – Housing in Newcastle 1871 and 1881

	Area in Statute Acres	Houses: 1871: Inhabited:	Houses: 1871: Uninhabited	Houses: 1871: Building	Houses: 1881: Inhabited:	Houses: 1881: Uninhabited	Houses: 1881: Building	Population: Persons: 1871	Population: Persons: 1881
[5] Newcastle upon Tyne PLU,	7,107	16,955	693	177	20,916	1,743	134	131,198	150,252
Westgate SubD	2,768	7,038	204	71	8,426	258	33	54,733	66,358
St Andrew SubD	1,440	2,613	143	11	2,666	145	6	18,611	18,731
St Nicholas SubD	131	1,462	49	16	1,329	135	4	13,005	10,028
All Saints SubD	210	3,490	246	5	3,259	610	7	27,872	24,424
Byker SubD	2,558	2,352	51	74	5,236	595	84	16,977	30,711

As Figure 53 above shows, house building in the parishes around Newcastle between 1871 and 1881 was at a rate that was nowhere near to matching demand – the results are clear to see in the population density per house as shown below in Figure 54:⁴⁸⁶

Figure 50 – Average density per house – Jarrow and Elswick 1881

1881	Population	Houses	Vacant	Under Construction	Average Density*
Jarrow	45429	5923	330	29	8.16
Elswick	34642	4486	148	6	7.99

⁴⁸⁵ Data from **Census of England and Wales, 1881**, Extracts from 1881 data from CHCC (<http://www.data-archive.ac.uk/>) and (<http://www.esds.ac.uk/>)

⁴⁸⁶ <http://www.visionofbritain.org.uk/index.jsp> , various data cubes.

* There was a lot of variation within this average, with houses often being occupied by one large family and one or two lodgers

It is likely that the construction industry, which was really a collection of small builders, was incapable of adjusting to meet the demands of the situation, but more importantly it is unlikely that many of the working men who moved to the towns, even with earnings that were high by previous standards, could have afforded to rent a new house built on an urban site.⁴⁸⁷

In 1839 Richard Grainger bought 544 acres of the Elswick Estate for a new town development.⁴⁸⁸ He paid £114,100 for the Elswick estate to the west of Newcastle with the intention to build a railway terminus surrounded by factories and houses. Buying the estate almost bankrupted him and by 1841 his creditors were chasing the debt, but he was saved from bankruptcy by his colleague, the Newcastle Town Clerk, John Clayton, who persuaded Grainger's creditors to accept gradual repayment. The riverside section of the Elswick estate was sold to William Armstrong, on which land he built his armaments factory. Grainger did eventually build several streets of terraced houses in the area for the workers at Armstrong's factory and named several of them using the forenames of his thirteen children. These streets and the others around the Elswick hills leading down to the Armstrong Works were freehold, as was most of the land on the North bank of the Tyne, unlike houses in Jarrow and the southern bank which were leasehold.⁴⁸⁹ Some employers (Armstrong in Elswick and Palmer in Jarrow) did build some accommodation for their workers, but in the main it was the 'spec builder' who provided most of the houses. John Price confirmed this in his evidence in 1884 when asked about who was

⁴⁸⁷ N. McCord, D. J. Rowe *'Industrialisation and urban growth in North-East England'* International Review of Social History (1977): p46.

⁴⁸⁸ Kit Pearce, p 62.

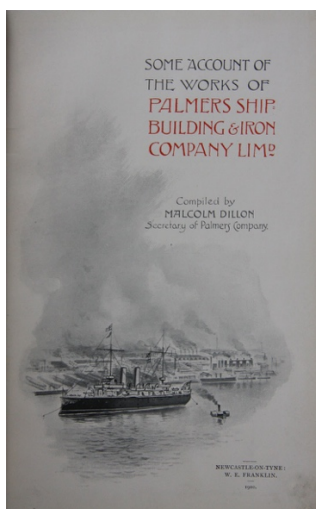
⁴⁸⁹ Pearce, p 62.

building houses in the suburbs. “They are being built principally by speculative builders, though some are built by employers of labour”.⁴⁹⁰

The 1886 Royal Commission on Depression of Trade and Industry gave some flavour of the problems in Jarrow. John Price, the Works Manager at Palmer’s, was asked about the nature of the workers’ houses in Jarrow. He pointed out that most of the houses were leasehold or rented, and that the ground landlord did little or nothing to help the town: “He builds nothing but his own fortune I think.” Price also pointed out that the ground landlord had profited enormously from the expansion of shipbuilding over the past thirty-five years, yet he had still asked for a rise in ground rent of 100%, which in the end was settled at a rise of 50%. This ground rent was charged not only on the Palmer’s site but also on the houses built in the area for workers and tradespeople of the town.⁴⁹¹

A history of Palmer’s, written in 1900 by Malcolm Dillon, the Company Secretary, discussed a novel approach to the question of worker housing:

Picture 20 – History of Palmer’s



⁴⁹⁰ Royal Commission on The Housing of the Working Classes, C-4402, 1885, Q7383, p 240, <https://parlipapers.proquest.com/parlipapers/docview/t70.d75.1884-061415?accountid=12860>.

⁴⁹¹ R.C. 1886 [C4797] Mr. J Price, Q 11,138, p153.

He wrote that nearly half of the town belonged to the workmen themselves, with building funded through a building society started at the works, shares in which were taken up by workers. There was a positive response, and in due course, they were able to acquire houses of their own. Dillon wrote that whole streets were built by the thriftier and more enterprising men, many of whom became considerable property owners. In the seventies and eighties, Jarrow claimed that it had more working men as property owners than any similar town in the United Kingdom.⁴⁹²

Spatial Distribution

As noted in chapter 3, the St Peter's workers who signed the petition requesting a change in the railway timetable lived in a variety of locations, all but one of which was served by the North Eastern Railway. Figure 55 below shows the number of workers in each location, ordered by distance from St Peter's.

Figure 51 – R W Hawthorn workers' homes

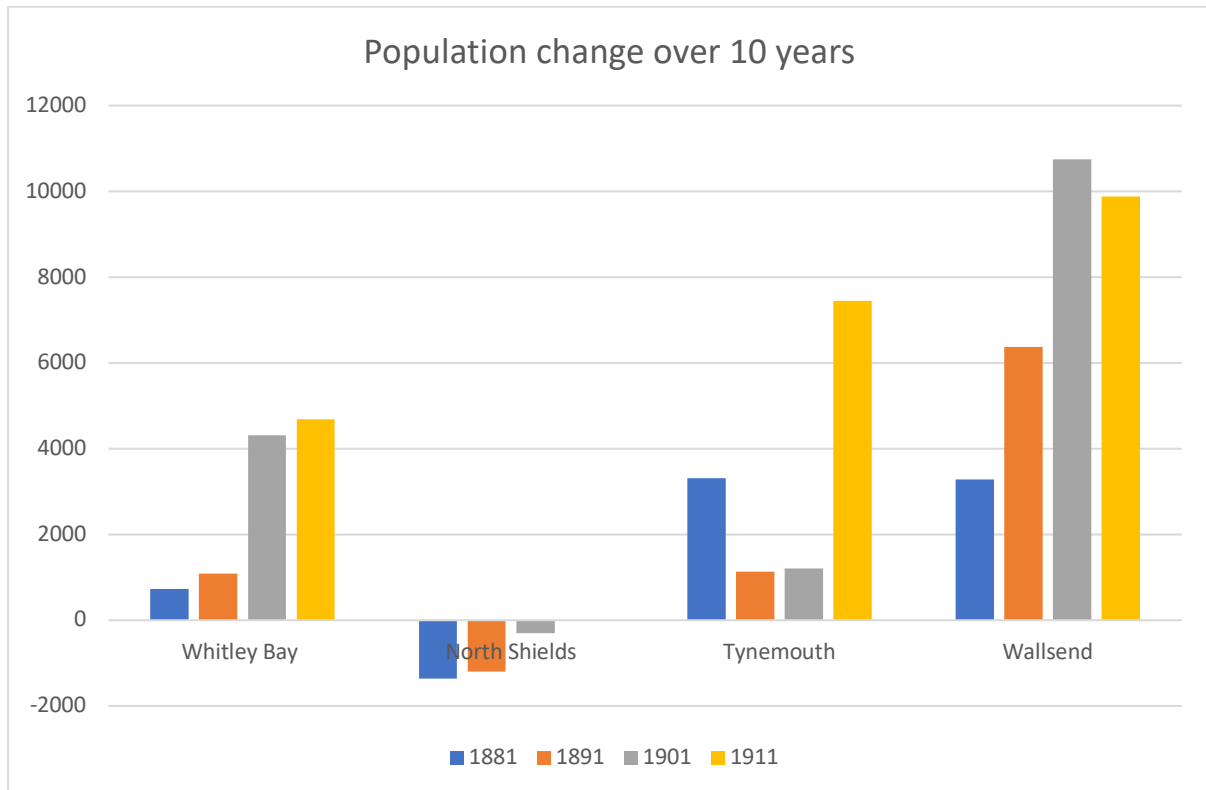
Location	Number
Whitley Bay	14
Monkseaton	1
Cullercoats	1
Tynemouth	2
North Shields	8
Percy Main	1
Wallsend	8
Walker	3
Hebburn	1

Whilst the railway provided the means to travel from home to work, did these locations have any characteristics in common? Figure 56 below shows the changes

⁴⁹² https://www.gracesguide.co.uk/Palmers_Shipbuilding_and_Iron_Company_by_Malcolm_Dillon, accessed 11/03/2021. It should be noted that this piece of information doesn't appear in other works on Palmer's or on Jarrow and does appear to be slightly at odds with John Price's evidence.

in population over ten-year periods for four areas – Whitley Bay, North Shields, Tynemouth, and Wallsend, where most of these workers lived.⁴⁹³

Figure 52 – Population Change – Whitley Bay, North Shields, Tynemouth, & Wallsend



Whitley Bay is described in an 1887 *Gazetteer* as a township and village with a railway station on the coast, 2½ miles North of North Shields, with a population of 1350, and a ‘pleasant place with handsome seaside terraces.’⁴⁹⁴ As can be seen in figure 56 above, the area saw rapid population growth in the period between 1880

⁴⁹³ Monkseaton and Cullercoats come under the Whitley Bay data set. The data is calculated from GB Historical GIS / University of Portsmouth, Whitley Ch/CP through time | Population Statistics | Population Change, A Vision of Britain through Time.

URL: http://www.visionofbritain.org.uk/unit/10330269/cube/POP_CHANGE

URL: http://www.visionofbritain.org.uk/unit/10327910/cube/TOT_POP

URL: http://www.visionofbritain.org.uk/unit/10329206/cube/TOT_POP

URL: http://www.visionofbritain.org.uk/unit/10551924/cube/TOT_POP

Accessed 12 March 2021 11:15

⁴⁹⁴ John Bartholomew, *Gazetteer of the British Isles* (1887), p838.

https://www.google.co.uk/books/edition/Gazetteer_of_the_British_Isles/h3hOAAQAAIAJ?hl=en&gbpv=1&printsec=frontcover Accessed 25/03/2021

and 1910, with a lot of this expansion coming with the development of terraced streets.⁴⁹⁵

The two maps (20 and 21) below show the scale of these changes.⁴⁹⁶ There is a significant expansion of terraced housing to the north and the east of the railway station, and the infilling of the gap between Whitley Bay and Cullercoats.

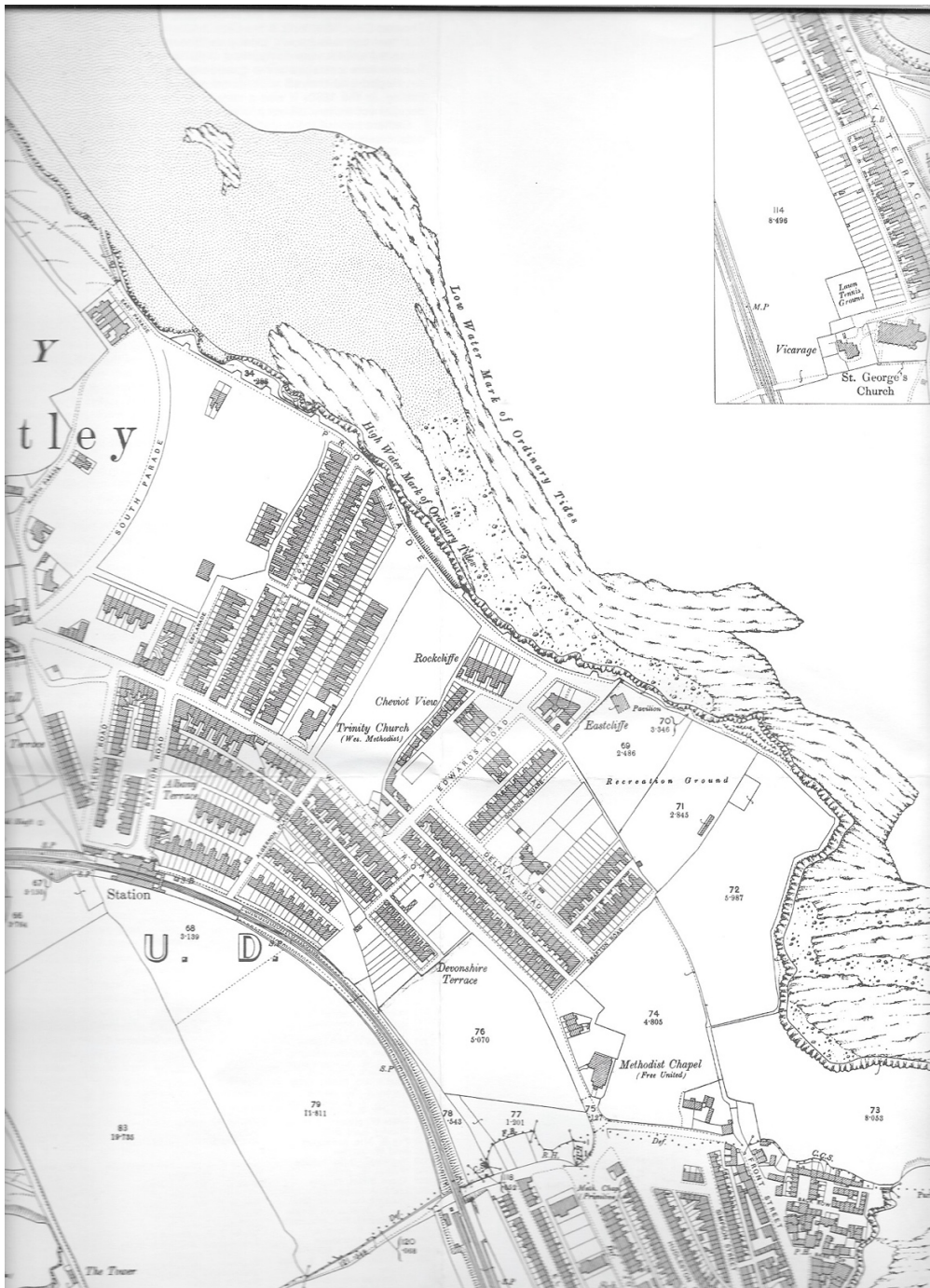
⁴⁹⁵ GB Historical GIS / University of Portsmouth, Whitley Ch/CP through time | Population Statistics | Population Change, A Vision of Britain through Time.

URL: http://www.visionofbritain.org.uk/unit/10330269/cube/POP_CHANGE

Date accessed: 03rd October 2018

⁴⁹⁶ From Ordnance Survey Maps of Whitley Bay and Cullercoats (Northumberland Sheet 89.04), 1897 and 1919, editions published by Alan Godfrey, Gateshead, 1989

Map 19 - Whitley Bay in 1897



Map 20 - Whitley Bay in 1919

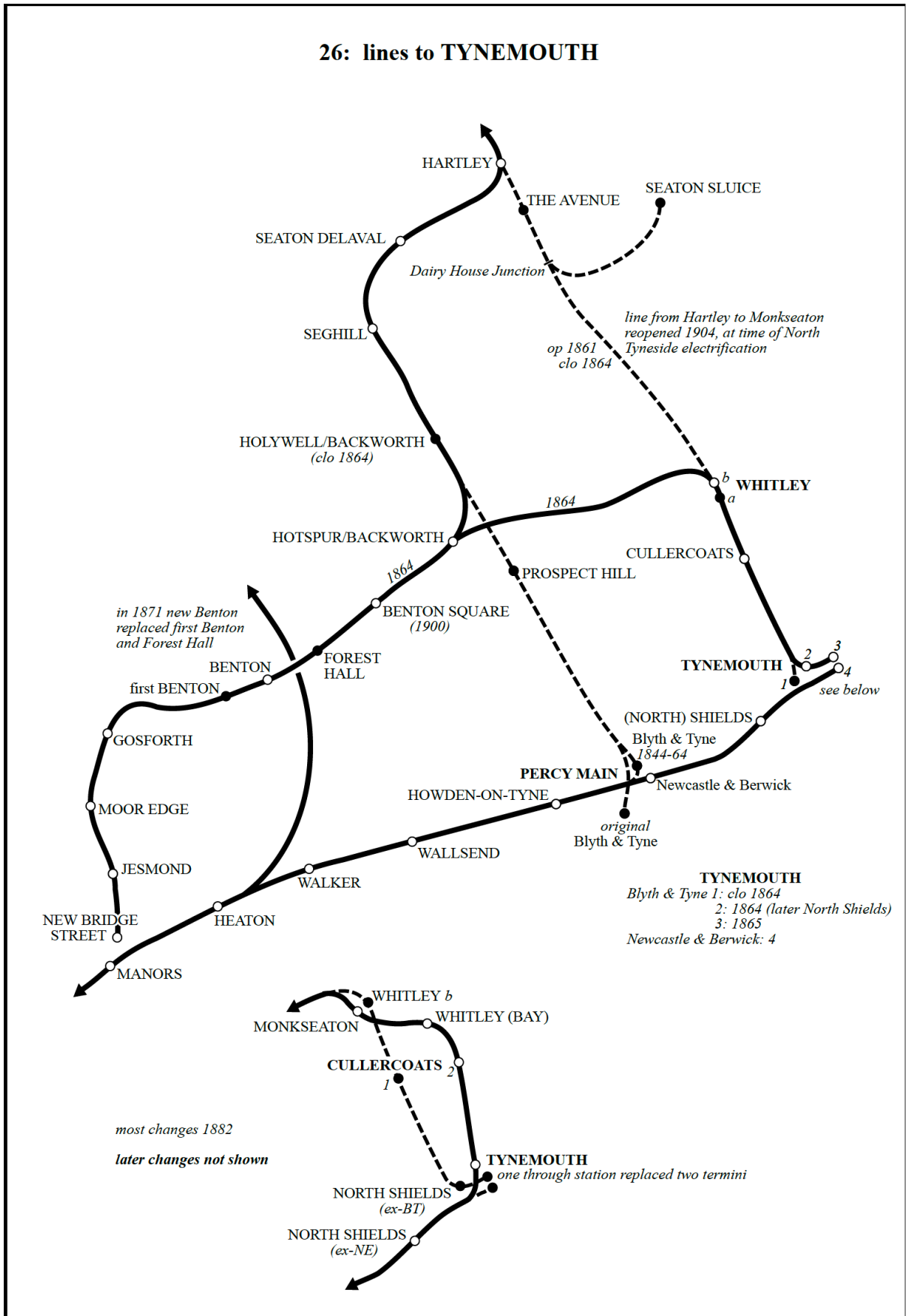


This infilling development together with improved transport links would have changed the character of the town enormously over that period, not just with the influx of new residents but also the development of peripheral services and consequent employment in areas such as shopping, transport, leisure, and other activities. By 1914, Whitley Bay had a police station that consisted of one Inspector,

three Sergeants and ten Constables, a good indication of the town's population.⁴⁹⁷

The improved transport links can be seen in map 22 below:

⁴⁹⁷ Kelly's Directory of Northumberland, 1914 - Page 528.
<http://specialcollections.le.ac.uk/digital/collection/p16445coll4/id/55948/rec/5> accessed 25/03/2021



The most significant development was the creation of a single through station at Tynemouth in 1882 which enabled trains to travel to and from Whitley Bay without the need to change.⁴⁹⁸

The next most popular residence for the St Peter's workers was North Shields, described in the same *Gazetteer* as a seaport, market town, and township with a railway station located at the mouth of the River Tyne, opposite South Shields. Unlike Whitley Bay, the population of North Shields declined over the last twenty years of the nineteenth century, largely driven by the development of better housing in Whitley Bay and Cullercoats. (See Figure 56 above.) One explanation for the differing rates of growth may lay in resistance to what might be perceived as a lower class of housing by existing residents, with local government and the local economy under the influence of middle class commuters and villa dwellers.⁴⁹⁹

Tynemouth, often conflated with North Shields through their proximity, was described by the gazetteer as a parliamentary and municipal Borough and township, and watering-place, located on the northern side of the mouth of the River Tyne, opposite South Shields.⁵⁰⁰ The leap in population at the turn of the century (see figure 57 above) was driven by the town's development as a resort and by the building of a number of middle class terraced houses just to the north of the station. Tynemouth benefitted as well from being the location of a popular private school, as well as the Priory and Castle.

⁴⁹⁸ Michael Quick, *Railway Passenger Stations in Great Britain, A Chronology*, 5th Edition, (Railway and Canal Historical Society, 2019) p 566

⁴⁹⁹ John K. Walton, 'The Demand for Working-Class Seaside Holidays in Victorian England' *The Economic History Review*, New Series, Vol. 34, No. 2 (May, 1981), p 251

⁵⁰⁰ John Bartholomew, *Gazetteer of the British Isles* (1887), p800

Wallsend, much closer to St Peter’s Basin, had a similar number of the petitioners as North Shields. The *Gazetteer* described it as a town and parish with a railway station, sited on the River Tyne, at the end of the Roman wall, four miles north east of Newcastle. Population change here had been significant, as shown in Figure 56 above, again driven by the building of many Tyneside flats and other terraced housing around the area of the town hall and down towards the river. The growth of engineering, ship building and ship repairing yards encouraged the influx of workers. Comparing the proportion of the working population who were sole proprietors or self-employed (those who employed no-one else) between Wallsend and Tynemouth gives a good indication of the differing social makeup of the two areas. Figure 57 below shows that, except in the 1911 census, the number of sole proprietors in Tynemouth was generally around twice that of Wallsend. The 1911 numbers may be partly explained by the fact that Whitley Bay was split out of the Tynemouth numbers.⁵⁰¹

Figure 53 – Sole proprietors in Wallsend & Tynemouth 1881 & 1891

	1881					1891				
	Population	Own account male	Own account female	Population	Own account male	Own account female				
Wallsend	32873	426	1.30%	191	0.6%	42275	412	1.0%	407	1.0%
Tynemouth	45621	1051	2.30%	751	1.6%	44968	916	2.0%	733	1.6%
	1901					1911				
	Population	Own account male	Own account female	Population	Own account male	Own account female				
Wallsend	34254	243	0.7%	279	0.8%	40734	288	0.7%	292	0.72%
Tynemouth	49623	845	1.7%	894	1.8%	58816	319	0.5%	219	0.37%

The significance of this data is in the clear difference in occupational and therefore status distribution between the two towns, and the way in which clustering can therefore be seen as a social as well as an economic phenomenon.

⁵⁰¹ Data from R Bennett, H Smith, C Van Lieshout, P Montebruno, & G Newton, (2019). *The British Business Census of Entrepreneurs 1851-1911* (BBCE): User Guide. <https://doi.org/10.17863/CAM.47126>. Analysis by the author.

R.W. Hawthorn workers and social distribution

Unusually, we know the names and addresses of several of the workers at R W Hawthorn and Co at the St Peter's Basin works in 1907. This comes from correspondence with the North Eastern Railway after changes to their afternoon timetable. The train for Tynemouth and the coast had been moved to depart at 5.03pm, which meant that workers could no longer work a full day and catch that train. A petition was signed by 39 workmen and sent to the E.F. Wilkinson, the District Passenger Agent at Central Station by W. Blackett, the Workshop Manager on September 13th 1907 requesting that the 5.03pm train leaving St Peter's Station was moved to depart at 5.10pm. North Eastern Railways appear to have rejected the request straight away, (no copy of their response is kept in the file), prompting a second letter from W. Blackett suggesting that the 5.03pm train is held at the station for an additional 3 minutes so that it departs at 5.06pm. No subsequent correspondence is filed. The station was situated close to the works, but it would still have been quite a rush to get from the works to the station in 6 minutes or less. A transcribed list of the signatories (presumably those affected by the change in train times) together with a description of their housing and the distance from there to their local train station is shown below in Figure 58.

Figure 54 – R W Hawthorn workers and their addresses

Name	Address	Town	Housing	Distance to Station
J Harbottle	6 Linskill Street	North Shields	Tyneside Flats	<900 yards
J H Robson	30 Station Road	Whitley Bay	Commercial, Flats	<100 yards
R Lowery	Northumberland Square	Whitley Bay	Tyneside Flats	
W Wilson	6 Alexander Terrace	Whitley Bay	Older Terraced	<150 yards
E Jones	11 Belford Terrace	North Shields	Tyneside Flats	<1000 yards

E J Green	19 Stormont Street	North Shields	Tyneside Flats	<500 yards
J Walker	18 Grafton Road	Whitley Bay	Tyneside Flats	<600 yards
J A Moss	19 Gerald Street	Wallsend	Back to Back Terraced	<200 yards
W Niven	6 Ventor Gardens	Whitley Bay	Terraced	<800 yards
J Parry	18 Bamborough Terrace	North Shields	Tyneside Flats	<1000 yards
J Dodd	76 Cambridge Avenue	Whitley Bay	Tyneside Flats	<400 yards
H Layton	1 Burnfoot Terrace	Whitley Bay	Mixed Terraced	<300 yards
G O Fleming	12 Belford Terrace	North Shields	Tyneside Flats	<900 yards
J Williamson	59 Park Road	Wallsend	Mixed Terraced	<400 yards
G Turner	4 Queens Road	Monkseaton	Semi Detached	<850 yards
J Morley	16 Gordon Square	Whitley Bay	Mixed Terraced	<400 yards
A Cayford	2 Unions Street	Wallsend	Tyneside Flats	<400 yards
W Keith	7 Lovaine Row	Tynemouth	Older Terraced	<500 yards
E Redman	6 Bellevue Street	Cullercoats	(New houses)	<150 yards
J Stevens	45 North Road	Wallsend	Tyneside Flats	<800 yards
J Kempester	North Road	Wallsend	Tyneside Flats	<800 yards
J Wren	17 Henry Street	North Shields	Older Terraced	<900 yards
W Dunn	78 Park Road	Wallsend	Mixed Terraced	<400 yards
S Millar	86 Percy Street	Tynemouth	Older Terraced	<250 yards
W Pybus	6 Laburnum Avenue	Whitley Bay	Terraced	<300 yards
W McIntosh	73 Trevor Terrace	North Shields	Tyneside Flats	<1000 yards
J Calvert	1 Rochdale Street	Wallsend	Older Terraced	<800 yards
R Mason	31 Elsdon Terrace	Percy Main	Tyneside Flats	<500 yards
G Dobson	24 Ellison Street	Hebburn	(New houses)	<900 yards
W B Martin	1 Tinrel Street	Wallsend	[Street Not Found]	
J Spencer	Quarry Inn	Whitley Bay	Public House	<600 yards
J Weightman	69 West Percy Street	North Shields	Older Terraced	<300 yards
J Pybus	6 Laburnum Avenue	Whitley Bay	Terraced	<300 yards
R Walton	7 Calidonia Street	Walker	(New houses)	<400 yards
G Watkins	6 Alexandra Street	Whitley Bay	Older Terraced	<150 yards
E Gray	30 Clifton Terrace	Whitley Bay	Tyneside Flats	<200 yards
J Flanagan ⁵⁰²	Western Glower	Walker	Terraced	<300 yards
H Sowerby	Byker Street	Walker	Terraced	<800 yards
G Lee	25 Jesmond Terrace	Whitley Bay	Tyneside Flats	<200 yards

In terms of distance from the St Peter's Works, this group breaks down as:

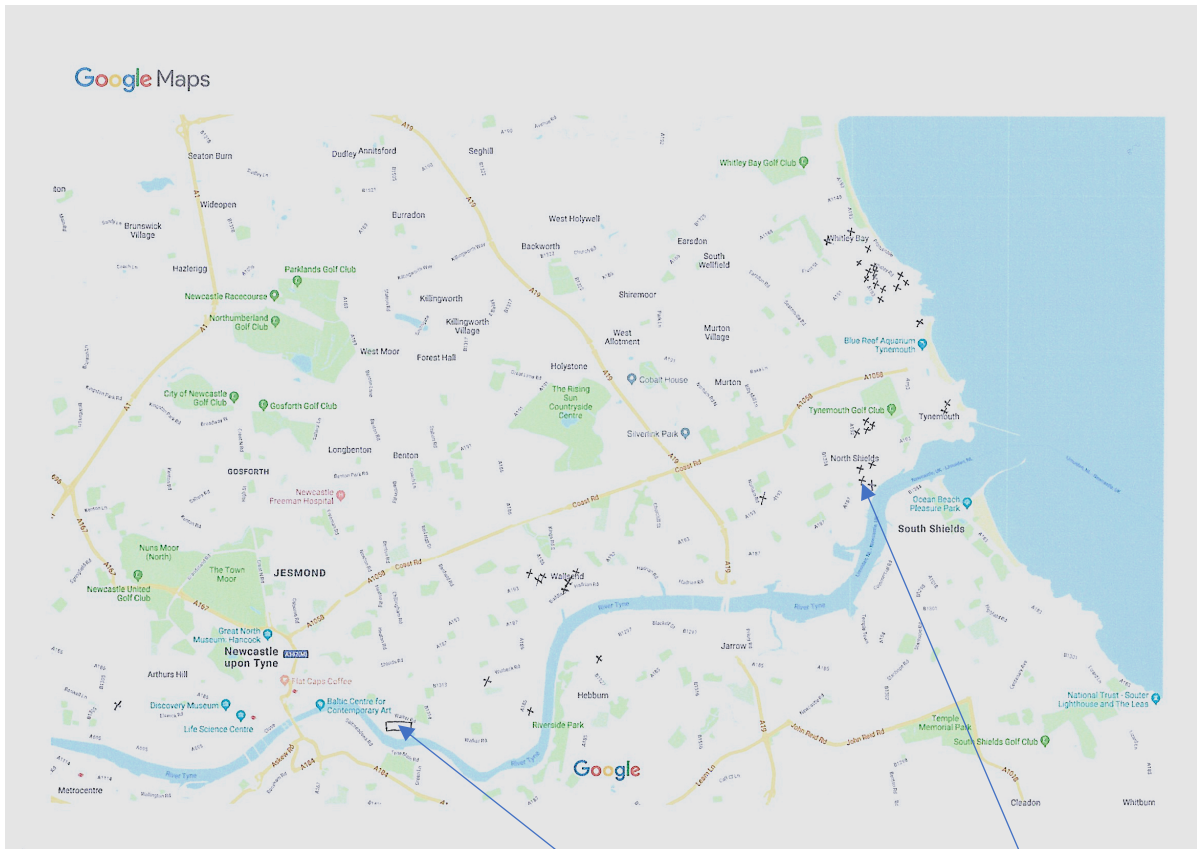
Figure 55 – Distance from St Peter's Works

Location (furthest first)	Number
Whitley Bay	14
Monkseaton	1
Cullercoats	1
Tynemouth	2
North Shields	8
Percy Main	1
Wallsend	8
Walker	3

⁵⁰² This may well be the same Flanagan identified in the 'Parsons of Wallsend Fitters' letter, especially as his address was close to the Parson's site.

Mapping the addresses begins to show clear indications of three recurring themes. Firstly, worker clustering - as these workers have moved away from the lower standard of housing available near St Peter's Basin and have taken advantage of the railway system to move to further away, and cluster towards the coast. Secondly, the experience of travelling together would have, in Rinaldi's argument (see above p175) created and 'shared a cultural homogeneity which lubricated social relations among economic actors'. The line they used would have also carried workers to other major shipyards and engineering firms out as far as Armstrong's in Elswick to the west of Newcastle, something that could have facilitated the conversations outlined in the 'Parsons of Wallsend Fitters' letter discussed earlier. That experience may well also have provided a means to generate and reinforce consensual views and travelling to and from the same place of work would have engendered a sense of community, something reflected in their collective response to the timetable changes. Finally, that these workers sought to travel home from work at just after 5.00pm and were supported in this by their employer, is indicative of the importance the employer placed on recognising their expectations and the balance of power therein.

Map 22 – Location of each R W Hawthorn worker's home



St Peter's Works

Each x marks the address of a signatory

therefore work became self-perpetuating.⁵⁰⁴ This is a topic that would benefit from further research, but the apparent clustering effect shown by the St Peter's workmen seems to indicate this is a distinct possibility. For the St Peter's workforce living along the coast using the Workmen's tickets in 1905, the prices were as below in Figure 60 (Whitley and Elswick):⁵⁰⁵

Figure 56 – Prices for Workmen's Railway Tickets - 1905

WORKMEN'S TICKETS. TYNESIDE DISTRICT.
COMPARISON WITH ORDINARY RETURN TICKETS.

Between	Third class ordinary return fare.	Workmen's Tickets.			
		Price per set of six tickets.	Cost per double journey.		
			If six tickets used.	If five tickets used.	If four tickets used.
Bedlington and North Seaton	s. d. 0 4	s. d. 1 3	d. 2½	d. 3	d. 3½
Scotswood and Newcastle (Central)	0 6	1 3	2½	3	3½
Newcastle (Central) and Leamington	0 7	1 6	3	3½	4½
Newcastle (Central) and Walker	0 6	1 9	3½	4½	5½
Newcastle (Manors) and Willington Quay	0 9	2 0	4	4½	6
Monkwearmouth and Hebburn	1 2	2 0	4	4½	6
Newcastle (Central) and Cullercoats, via Wallsend	1 0	2 3	4½	5½	6½
Whitley and Elswick	1 5	2 3	4½	5½	6½
Jarrow and Scotswood	1 3	2 6	5	6	7½
Tyne Dock and Elswick	1 2	2 6	5	6	7½
Hebburn and Blaydon	1 3	2 9	5½	6½	8½
Sunderland and Elswick	2 0	2 9	5½	6½	8½
South Shields and Blaydon	1 5	3 0	6	7½	9

The cost of a journey between Cullercoats and St Peter's would have been fourpence ha'penny a day, or 2s 3d a week, which was a small proportion, given that a typical engineering worker's weekly wage would have been around 35s 8d in 1906.

The 1905 Select Committee on Workmen's Trains took evidence from a number of regional railway companies. The Committee noted that most railway companies had interpreted the Cheap Trains Act as meaning that eight o'clock was the latest hour at which they could be compelled to timetable the arrival of working

⁵⁰⁴ Patrick Joyce, *Work Society and Politics – The culture of the factory in late Victorian England*, (London: Methuen, 1980) p 56.

⁵⁰⁵ Report from the Select Committee on Workmen's Trains, together with the proceedings of the committee, minutes of evidence, and appendix. 1905 p17
<http://parlipapers.proquest.com/parlipapers/docview/t70.d75.1905-005362?accountid=12860>

men's trains, and the evidence to the committee showed that in some cases they hesitated to enforce the running of trains up to that hour. Phillip Burt of the North Eastern Railway asserted that the busiest trains on Tyneside were those running at 6 o'clock in the morning.⁵⁰⁶ In the 1880s workers entered the Engine Works, 'drew their boards' from the time office and commenced at 6.00am.

Apart from the city centres with the prevalence of shop workers, banking and other clerks, most of the movement to work was not from suburbs into a centre, it was from urban to industrial area, bounded by the availability of work, of accommodation and of the means to travel. Works, factories, ship building yards, and supporting industries lay along the line from North Shields to Newcastle and the workmen travelled in both directions. "The Armstrong Works, for instance, are at Elswick on the west side of Newcastle. The workmen travel from North Shields to Newcastle as well as in the opposite direction."⁵⁰⁷ By 1905, there were around one hundred and seventy workmen's trains running daily in the North East.⁵⁰⁸ Two trains that were timetabled to arrive at Newcastle from North Shields in the morning before 6.00am, the first train from North Shields which arrived at 5.30am, the second at 5.48am.⁵⁰⁹

⁵⁰⁶ Report from the Select Committee on Workmen's Trains, together with the proceedings of the committee, minutes of evidence, and appendix. 1905, Phillip Burt, Q 284 p 16

⁵⁰⁷ Phillip Burt, *ibid* p 19

⁵⁰⁸ Compare this with the evidence of Mr. Robert Millar, the general manager of the Caledonian Railway Company to the same committee, in which he said "The necessity for keeping such a number of spare carriages is due to the very large number of repairs required for and done to these workmen's carriages. During a period of five weeks ending 3rd September last, there were 235 carriages repaired, the repairs required being directly the result of abuse by the workmen passengers. 'The number of repairs during those five weeks is the normal state of things; it is nothing unusual. The repairs include the following: seventy-three window straps out or removed and fifty-seven check straps cut or removed. 'These are thick straps for keeping the door from banging back on to the carriage, they check the opening of the door. Then thirty-six window glasses smashed partly or entirely, as well as rack nettings, window lifts and side glasses or side windows smashed.'" *Ibid* p3

⁵⁰⁹ Phillip Burt, *ibid* p 18

Community

The importance of community has been discussed earlier, specifically in the context of shared experiences of work, and that being carried over into shared activities outside work. The period under discussion saw three non-work activities developing in importance across the North East – sport, religion, and non-denominational community groups such as Co-operative Societies. Each performed an important role in building and sustaining a sense of community amongst members, cutting across, and at times reinforcing status boundaries. The boundary between work and leisure, at least for the better paid craft workers and the growing clerking class inevitably became more visible with the gradual reduction in the working week, but this did not immediately reduce the sense of community still retained by those groups who worked alongside each other. Teams and clubs often emerged from within a works or department within a works – The Elswick Rowing Club (pictured below) and The Elswick Leather Works Football Club, to name but two from Newcastle’s West End.⁵¹⁰ The Elswick Rowing Club picture is important because the group of rowers seems to have been socially mixed. According to a 1948 publication by Vickers Armstrong, ‘Elswick 1847-1947’ in which this photograph appears, not only are Sir William Armstrong (top of the stairs, second left), Sir Andrew Noble (bottom of the stairs with mutton chop whiskers) present, but amongst the rowers, most of whom are named only by the surnames is one George Buckham (bearded man in the centre). Buckham was a great example of what could be achieved with a technical education and apprenticeship.⁵¹¹

⁵¹⁰ Picture of Elswick Rowing Club c1889 from Tyne & Wear Archives & Museums - <https://www.flickr.com/photos/29295370@N07/17057381489/>

⁵¹¹ Buckham started his career at the Elswick Works of Sir W. G. Armstrong, Mitchell and Company, also taking a course of technical education at the Elswick Mechanics’ Institute. After spending a number of years in the

Picture 21 – Elswick Rowing Club - 1889



The notion that changes to working practices, such as the development of the factory system combined with urbanisation, created a leisure vacuum where exhausted workers had little or no time for sport has been rebuffed by a number of historians, most notably Richard Holt.⁵¹² Rowing had been an enormously popular sport in the region for many years, with local rowers competing around the country. The popularity of the sport is best shown by the death of the most famous Newcastle oarsman, Harry Clasper. His funeral procession in July 1870 along the River Tyne from the Ouseburn to St Mary's Church in Whickham (the route of many of his races)

reconstituted firm of Sir W. G. Armstrong, Whitworth and Company as a draughtsman, he left Newcastle in 1895 to become chief of the ordnance designing staff of Messrs. Vickers, Sons and Maxim. He received his knighthood in 1917 as a reward for his services in the development of armaments. (Grace's Guide, https://www.gracesguide.co.uk/George_Thomas_Buckham).

⁵¹² Richard Holt, *Sport and the British : A Modern History*, (Oxford: Clarendon, 1989)

was watched by tens of thousands of people lining the riverbank on both sides.⁵¹³ There were strong sporting cultures in many urban areas, something that has subsequently been reinforced by local studies such as Alan Metcalfe's work on leisure in Northumberland mining villages.⁵¹⁴

For some communities, for example those in rural areas such as coal and lead mining villages, the space required for recreation was available in reasonable proximity, albeit often only with the approval of the mine owners, thus enabling a wide range of opportunities for recreation, whether running, cycling, team games, flower, or vegetable cultivation. For those in urban environments, space was less available, so recreation depended not just on time but on the ability to find and to travel to the recreational area. Teams and clubs often therefore emerged from within a works or department within a works, as seen above with the Elswick Rowing Club.

Other social developments contributed to developing community cohesion. The development of independent working-class organisations provided both social interaction and the consequent opportunity for increased political influence. The Co-operative movement in the North East grew from 95 societies in 1881, to 122 in 1891, and 129 in 1901, with total membership growing from 62,436 in 1881, to 130,589 in 1891, and to 210,445 by 1901.⁵¹⁵ Whilst the primary function of the Societies was commercial, there was inevitably a social and underlying political element to membership, and especially given the opportunities membership offered for socialising and discussing issues. Particularly important in this context was the role that Co-operatives took in education. Records of Co-operative committee

⁵¹³ <http://www.nerowing.com/rowhist/clasper.html>.

⁵¹⁴ Alan Metcalfe, *Leisure and Recreation in a Victorian Mining Community, The social economy of leisure in north-east England, 1820-1914*.

⁵¹⁵ Figures extracted from the 1882, 1892, and 1902 CWS Annuals, held by the CWS Archives.

meetings frequently record the presence of a talk or lecture on a topic of interest to Co-operators, and local societies often took it upon themselves to expand that beyond active committee members. For example, the Cramlington Co-operative Society had by 1901 established an Education Committee funded by an annual subscription of 1d per member. The 1911 Jubilee Souvenir records that: “many lectures have been given, not merely on Co-operation, but on a great variety of subjects, ... and interest has been shown in them by young and old.”⁵¹⁶ By 1910 the Cramlington Society was offering courses on topics such as Bookkeeping in conjunction with the Co-operative Union.

It cannot be assumed, though, that the Societies were, despite their Co-operative credentials, inherently Liberal or radical, as the example of the Cramlington Society’s Draper’s department shows. The 1887 coal workers’ strike had seen the miners out of work for seventeen weeks, and consequently all businesses suffered declines in trade. The Society agreed that the best way of helping their members who had been thrown out of work as a consequence of the strike was to sell goods at the lowest possible prices. A resolution was passed that the Society should sell all goods at cost price plus working expenses only.⁵¹⁷ The Jubilee Souvenir goes on to note that the scheme was not nearly so satisfactory as hoped, and after a series of complaints the scheme was replaced with one that provided in addition a small profit margin. For those members still in need of assistance, the Society provided small parcels of groceries.⁵¹⁸ The overall fall in sales led to an inquiry by the Society into the working expenses of the various departments, and the first remedial action taken

⁵¹⁶ Cramlington District Co-operative Society Limited, “*Jubilee Souvenir 1861-1911*”, p 176, Author’s own collection.

⁵¹⁷ Cramlington Jubilee Souvenir, p119.

⁵¹⁸ Cramlington Jubilee Souvenir, p120.

was to reduce all salaries by the equivalent of two days a week. Even this proved insufficient, and a special Committee of Inquiry was set up to report on how expenses could be further reduced. Most departments were found to be paying above the going market rate for wages, the drapery department in particular, with the result that they recommended that “a cheaper form of labour should be employed...from [this time] we may date the introduction of female labour into these departments.”⁵¹⁹ The author of the Souvenir (W. Simpson, Secretary of the Society) finished this section wondering whether the departments had benefitted from this change, commenting that ‘time alone will decide with what modifications, if any, this kind of labour should be continued, and upon what basis it will be maintained.’⁵²⁰ In this case the agglomeration benefits that accrued to the Co-op’s customers who were in financial difficulty through the decision to sell at cost plus expenses would have strengthened the ties between the two sides. The uncovering of the high wage rates within the Co-op and the subsequent reduction in those rates reduced the market disparity at the cost of changing the patterns of employment. So, the agglomerative effect was to create both winners and losers.

The maps of the Tyne and the Wear shown earlier in this chapter demonstrate that the clustering of workers and industry (and industry with industry) was a common phenomenon across the region, with housing and industrial development in an almost symbiotic relationship. Clustering theory suggests that its consequences should have been seen in agglomerative benefits, and evidence of this can be found in the flexible working arrangements apparent at the Scotia Works and in the way that information about employment opportunities was used by both sides, recruiting,

⁵¹⁹ Cramlington Jubilee Souvenir, p121.

⁵²⁰ Cramlington Jubilee Souvenir, p121.

and moving jobs, as in the way that R.W. Hawthorn recruited the Parson's Fitters (see chapter 3). The emerging picture therefore is a nuanced one in which both owners and workers were more able and willing to make choices about how they wished to work and how they wished to organise their businesses. At the same time, however, these choices were also constrained by the pressures arising from the increasing complexity of working processes and consequent changes in the division of labour. As work became more complex and increasingly became compartmentalised between specific tasks, the division of labour between craft and non-craft skills became bigger. This compartmentalisation is reflected in the variety and location of housing, and their proximity to work, as craft workers could afford to live in better quality accommodation, and often further from work as they could afford to travel. This would further reinforce the agglomeration benefits as information about work opportunities, as well as admission to apprenticeships, could increasingly be constrained within like-minded 'occupational communities'. Of course, the proximate availability of relevant skills and knowledge was also of advantage to employers, as well as the supply of relevant skills became more settled. In circumstances of surplus labour, it would have reduced competition and helped to restrain wages. Overall, though, the agglomeration benefits were limited for business by the restraints on employment imposed by the apprenticeship system and demarcation constraints on working patterns.

What this chapter has illustrated is the close relationship between clustering as a business phenomenon and the associated clustering of housing and supporting infrastructure, including shops and public transport. Of note is the way that housing began to reflect relationships within the working environment, especially the clustering of similar trades and the dispersion of skilled workers to the coast. Finally,

it should be noted that these phenomena were not limited to engineering and shipbuilding workers. The emerging office worker, clerks, and the like, were subject to similar gradations of housing and travel in Newcastle.⁵²¹

It can be seen from the evidence presented here that there was a considerable amount of clustering of industry, as well as housing, along the Rivers Tyne and Wear. The railway naturally both echoed and enabled that clustering, allowing workers to live at a greater distance from their work than might have been the case before its construction, and enabling the development of towns away from the bigger city centres. This clustering effect allowed the development of communities of similar backgrounds and working experiences outside the shipyard, factory and engineering shop environment, facilitating the sharing of knowledge about work openings, conditions and terms, and therefore the ability of workers to take opportunities to move between locations and minimise their chances of going without work. Clustering provided external agglomeration benefits for workers in the form of knowledge sharing, and therefore supported them having the ability to exercise a degree of control over the supply of labour. The rigidity of the apprenticeship process further enabled that control, something that whilst providing short term job protection delayed the longer term benefits that might have been accrued from adapting to newer working processes and technology.

The Trades Unions were often in the position of being engaged to find workers to fill vacancies, and employers were willing to use both the Unions and other, informal, means to fill skills gaps. The statistical data from the Scotia works

⁵²¹ Barke, Michael, "The Middle Class Journey to Work, 1850 – 1913" *Journal of Transport History*. Sep 1991, Vol. 12 Issue 2, p107-134. There is much that can be done to combine Barke's methodology and data set with that of the industrial worker to develop a more complete picture.

indicates strongly that variations in employed numbers, both for craft workers and for labourers, was directly related to the amount of work available; when combined with the clustering of businesses close to and in near proximity to the works that could utilise both labourers and craft workers, this makes a compelling case for workers and employers taking a pragmatic approach to continuing employment. The role of institutions, therefore, was reduced to reflecting and adapting to the needs of their members, any sclerotic effect therefore being a consequence of their activities, not of the institutions themselves.

Chapter 6 - appendix

Figure 57 - Occupations of residents of Panmore Street, Elswick ⁵²²

Job	Number
Artizan, Mechanic (undefined)	1
Baker	2
Blacksmith	6
BOARDER	3
Boiler Maker	1
Brick, Tile—Maker, Burner, Dealer	1
Butcher, Meat Salesman	1
Cabman, Flyman, Coachman (not Domestic)	1
Carman, Carrier, Carter, Drayman	5
Carpenter, Joiner	6
Chemist, Druggist	1
Coachmaker	1
Coal Merchant, Dealer	3
Coal Miner	9
Commercial Clerk	4
Commercial Traveller	1
Cooper, Hoop Maker, Bender	1
Domestic Indoor Servant	7
Draper, Linen Draper, Mercer	1
Engine and Machine Maker	10
Engine Driver, Stoker, Fireman (not railway, marine)	5
Factory Labourer (undefined)	1
File Maker	1
Fitter, Turner (Engine and Machine)	13
Furrier, Skinner	1
Gas Works Service	1
General Labourer	12
Goldsmith, Silversmith, Jeweller	1
Grocer. Tea, Coffee, Chocolate Maker, Dealer	1
Gunsmith, Gun Manufacturer	1
Inn, Hotel Servant	1
Iron Manufacture	30
Lead, Leaden Goods—Manufacturer, Worker, Dealer	4
Life, House, Ship &c., Insurance Service	1
Mason	3
Messenger, Porter, Watchman (not Railway or Government)	3
Metal Refiner, Worker, Turner, Dealer	1
Milkseller, Dairyman	6
Milliner, Dressmaker, Staymaker	8
Omnibus, Coach, Cab, Owner—Livery Stable Keeper	1
Other Railway Officials and Servants	1
Others	1
Painter, Glazier 47	4
Paviour	1
Photographer	1
Plumber	1
Printer	1
Provision Curer, Dealer	2
Publisher, Bookseller, Librarian	1
Railway Guard	4
Sawyer	1
Schoolmaster	3
Shoe, Boot—Maker, Dealer	3
Slater, Tiler	1
Subordinate Medical Service	1
Tailor	3
Tin, Tin Plate, Tin Goods—Manufacturer, Worker, Dealer	1
VISITOR	2
Washing and Bathing Service	2
Grand Total	194

⁵²² Data from the 1881 Census. 1881 Census Vol. III. Ages, condition as to marriage, occupations and birthplaces of the people. BPP 1883 LXXX.1 (C.3722). Dataset from <http://www.data-archive.ac.uk/> Accessed 19th April 2012 09:37.

Summary & Conclusions

At the start of this thesis five questions that influenced the research that led to the writing of the subsequent chapters were outlined. They were:

- How far did the socio-economic structures and institutions of the North East as an industrial district act as a stimulant to its growth and decline?
- How far were social relationships an underpinning factor of economic success as well as long term decline?
- What were the processes through which individual and collective interests were expressed, and interests maintained?
- How did employer / employee relations work in reality?
- How did the changing nature of work as the Region developed affect the ways in which society organised, and the ways in which politics happened?

As research progressed it became clear that there were a number of areas that would provide significant contributions to the understanding of the Shipbuilding and Engineering industries in the North East, as well as ways in which social construction and politics were influenced by and influenced these industries. Of particular note is the evidence from the Scotia Works, indicating a more flexible and pragmatic approach to employment, at least for some craft workers, than has previously been understood. The ways in which clustering manifested itself have been demonstrated in both Newcastle and Sunderland in Chapters 3 and 6, both in terms of industry and housing. This has been expanded further in Chapter 6 with the evidence showing how at least one

group of workers at R.W. Hawthorn clustered themselves by moving into the newly built suburbs along the coast, an action facilitated by the growth of public transport.

Chapter 1 began with the idea that there was value to be found in creating dialogue between business history and the history of the everyday, an aim that is at the heart of this thesis.⁵²³ As argued there this thesis can be considered as a 'meso history' or even as an example of an 'Alltagsgeschichte' because it has focussed on continuity and change occurring as a result of the actions of individuals and groups.⁵²⁴ It has also attempted to contribute to the 'great historical question' of decline as it went on to contextualise the North East as an industrial district and posit the idea that to understand fully the arc of growth and decline in shipbuilding and engineering industries it is necessary to look at the institutions that represented the economic actors that constituted the district. Those institutions reflected the choices that individuals and communities made to concentrate on what were the short term returns of dividends, control, continued employment, and maintenance of status. There were constraints on all sides, social, political and financial, and parties made their decisions as rational actors based on what they knew at the time. They could not know that this would be at the expense of long term success. These choices were entirely rational at the time they were made, but their effect was to have a

⁵²³ Andrew Popp, '*Histories of Business and the Everyday*', *Enterprise and Society*, Vol 21 Number 3, p622-637 *ibid*

⁵²⁴ A major inspiration for this thesis is the work of Edward L Ayers, especially "*In the Presence of Mine Enemies*" (Norton & Company, New York, 2003) in which he explores the relationship between two communities, one in Pennsylvania and one in Virginia in the run up to, and during the American Civil War. This is done through letters, diary entries, photographs and maps, and does exactly as an *Alltagsgeschichte* should do and examine continuity and change through individuals.

sclerotic impact that meant that any 'first mover' advantage the region and its industries may have had was eventually squandered. Therefore, to understand the processes of growth and decline it is necessary to look in detail at the people, networks and communities that constituted those institutions to fully understand what was happening. The chapter went on to look at some of the major theories of decline, and to introduce the period under examination.

Chapter 2 built on this with a more detailed look at the ways in which workers and owners / managers organised themselves in the North East and some of the associated institutions, as well as look at some of the external factors such as legislation that impacted on both groups. Chapter 3 went deeper into the way in which working relationships played out in practice, with two case studies detailing a much more nuanced and pragmatic approach to work than some more traditional analyses have provided. The empirical data from the Scotia employment records and order book clearly indicate a relationship between the amount of 'work in progress' in the factory and the number and type of worker employed. This applies whether the order book was rising or falling and builds on the idea that agency and individual decision making were an important element in the way that everyday interactions, because of proximity and agglomeration, had impacts that were felt at the cluster level.⁵²⁵ That cluster level impact would have been felt in the ability of workers to maintain employment and in the way that businesses would have

⁵²⁵ Corker, Lane and Wilson, 'Critical perspectives on industrial clusters' p 262 in *Industrial Clusters – Knowledge, Innovation Systems and Sustainability in the UK* Eds J F Wilson, C Corker, J Lane, Routledge, London 2023

been able to manage costs, as well as potentially gain the benefit of knowledge transfer as workers moved from location to location.

Chapter 4 then looked at a number of industrial disputes in detail, examining the ways in which issues such as demarcation ran throughout the period seemingly without resolution, and were tangible examples of the desire of workers to maintain their perceived status, as well as the unwillingness of either unions or businesses to confront or even attempt to manage the underlying issues. These disputes raised the question as to whether they were indicators of, or the consequences of the cluster's lifecycle position. Demarcation disputes certainly appear to have the characteristics of cognitive lock-in, in that processes that had worked were considered to be the only ones that would continue to work, regardless of any external changes and impacts from competition.⁵²⁶ Chapter 5 then took a detailed look at the ways in which this pragmatism was reflected in voting behaviour, the conclusion being that the core of the relationship between MP and voter was transactional more than political, based on who was perceived as best embodying the concerns and values of voters and who best represented the geographic and corporate loyalties important to the constituency. The reasons for the gradual rise in the influence of political parties and the slow growth of the Labour Party in the North East have been examined in Chapter 4. The evidence collated from election results shows that the nature of the voter / representative relationship was considerably influenced by a pragmatic and transactional, rather than political approach, at least for the first two-thirds

⁵²⁶ D Charles, 'The evolution of business networks and clusters' p 41 in *Industrial Clusters – Knowledge, Innovation Systems and Sustainability in the UK* Eds J F Wilson, C Corker, J Lane, Routledge, London 2023p

of the period under study. This in turn has reflected upon the role that craft unions played in seeking to maintain their members in employment and exercising control over working practices, an approach that ultimately may have sacrificed long term stability for short term gains. This approach can also be identified in the ways (see also Chapter 2) in which owners and shareholders structured their businesses, seeking to retain control and optimise returns, often preferring to avoid decisions such as developing management processes and improving working practices. The evidence from the Scotia Works order book does show the challenges management faced, not the least in terms of cash flow, but the extent to which they sought ways to improve things is an area for further study. Finally, running through the thesis is the idea that one of the major influences on decisions across the region was the way in which groups, organisations and networks acted as representatives of the collective wishes of their members, rather than as decision makers in their own right.

The 1881 to 1911 Wallsend / Tynemouth sole proprietor employment profile (see page 315) further emphasises the notion that towns and communities were developing their identities based on the types of people living there, and that people tended to gravitate towards communities where they would feel comfortable. It is worth noting here that during the period under review the Tynemouth constituency (which stretched up and beyond Cullercoats and Whitley Bay) returned Conservative MPs between 1885 and 1900, and a Liberal in 1906 and 1910. More importantly, the Conservative was the head of a local shipping firm, Nelson, Donkin & Co, and the Liberal was head of another local firm of exporters and shipbrokers, Borries, Craig

and Co. Both MPs' local connections indicate a personal following of some size, a factor explored in Chapter 5. Chapter 6 then went on to look at the ways in which businesses and communities coalesced, and the clustering and consequent agglomeration benefits that ensued, both to business and to individuals.

Throughout the chapters, evidence has been presented that supports the contention that there was and is no single explanation or cause as to the arc of success and decline that characterised the region and its engineering and shipbuilding industries. When looking at decisions in isolation, it can be argued that they were, in their context and with the knowledge available at the time, rational choices to make. As Granovetter argued 'actors' do not make choices or decisions as 'atoms outside a social context' and neither do they stick to a script predetermined for them by their social position.⁵²⁷ The key issue was not the mechanism by which the choices were made, but the effect they had. The cumulative effect of these choices was to create the conditions in which sclerosis could develop and precipitate decline. When Palmer's decided to create a vertically integrated business, not only building ships but making the steel for them on site, it gave them a competitive advantage. However, as customer requirements changed and the ships required grew in scale, the steel fabrication capability became a burden because it was unable to make the sheets to the newer, larger sizes. It was not therefore the individual decisions that were at fault, it was their short-term nature and the prioritisation of proximate benefit over a long-term strategy. Similarly, the choice of the board to raise capital only through shares / equity rather than

⁵²⁷ Mark Granovetter, *ibid* p487

loans was advantageous to shareholders in the short term as there was no debt to finance, but it limited the ability of the company to invest to overcome the mounting constraints.

When craft unions insisted on strict controls on how many apprentices would be allowed to enter the trade, as well as selecting who they were, it enabled them to control the flow of labour, and therefore control that section of the working process. It also had the consequent effect of constraining the overall capacity of that industry to grow (or decline) at a rate dictated by market opportunities. This maintained employment for the union members, but as customer requirements changed and products became more complex, the subsequent increase in the division of labour saw an inevitable rise in the demand from other working groups to take on the additional tasks. This led to a rise in the number of frankly esoteric demarcation disputes between the groups, which often allowed employers to play one group off against another and to turn towards more mechanised approaches to avoid them. These were rational choices then, but in practice choices with short term benefits and with long term costs.

The Region entered the period under study with some of the worst housing in the country, with workers trying to live as close as possible to their work. The length of the working day meant that living close to work avoided travel costs and minimised the risk of being late. As the period developed and industry expanded, improved housing began to provide better opportunities for workers to live in higher quality housing and in proximity to their work at rents that were affordable. As housing developed, so did the need for incremental services to cater for the rising population, so public houses,

groceries, hardware stores, transport infrastructure and the other paraphernalia of life emerged, each of which created more employment and increased demand for housing. Thus, communities developed and the agglomerative benefits of information sharing began to emerge. As the railway and tram system developed, a more nuanced clustering began to develop as better-off craft workers were able to afford to move and emulate white collar workers and other members of the middle classes by living further from their work. That distance from work was not necessarily reflected in the type of housing, for example much of the housing development in Whitley Bay and along the coast was still in the form of 'Tyneside' flats. The example of the St Peter's workers' moves into the expanding towns along the coast shows that if suitable transport was available, living some distance from work had become a practical choice, at least for skilled workers. More importantly, the fact that people were living at some distance from their work and so working and living were becoming increasingly less co-dependent, at the same time as community was becoming an increasingly important constituent part of the way in which groups identified and represented themselves.

Communities were also developing around identities other than location. For example, the thesis outlined the rise of sports clubs where a shared interest in the activity was a more important membership criterion than background (see the Elswick Rowing Club above). As has been argued throughout this work, community was becoming, or had become, the primary means through which identity was defined, and through which interests were manifested and expressed. The Boilermaker's Society may have provided protection during periods of unemployment for members, but if boilermakers

on the Tyne, or even in one engineering shop, believed it was in their interests to strike or work through a strike, even if it meant they reduced the effectiveness of their fellow boilermakers on the Wear, their community interest overrode any sense of broader commonality.

The maps of the Tyne and the Wear in Chapter 6 show that the clustering of workers and industry (and industry with industry) was a common phenomenon across the region, with housing and industrial development in an almost symbiotic relationship. As argued in Chapter 1 there is a case to be made that clustering, community and social capital are, at the very least, closely intertwined, something that feeds into the life cycle debate prompted by Martin and Sunley.⁵²⁸ The dynamic development of firms within clusters and of the clusters themselves can be described both within a life cycle model and an adaptive systems model, and in both cases the agency of individuals and of firms is critical.⁵²⁹ It is suggested that Wilson and Popp's contention that the network actors' importance within that network comes from the attributes they gained from wider social (and other) groupings can be developed further. It is not just the importance of individual actors that is affected, it is that the network itself benefits from the wider social and other groupings of which the actors are members. Evidence such as the way in which workers were 'recruited' from rival firms through almost casual conversations, and the recruitment of sympathetic shareholders to the Clarke Chapman share register who were engineers and local citizens. Clustering

⁵²⁸ R Martin and P Sunley; 'Deconstructing clusters: chaotic concept or policy panacea?' *Journal of Economic Geography* 3 (2003), p5-35

⁵²⁹ Corker, Lane and Wilson, 'Critical perspectives on industrial clusters' p 262 in "Industrial Clusters – Knowledge, Innovation Systems and Sustainability in the UK" Eds J F Wilson, C Corker, J Lane, Routledge, London 2023

theory suggests that its consequences should have been seen in agglomerative benefits, and evidence of this can be found in the flexible working arrangements apparent at the Scotia Works, something which was of benefit to both owners and workers. Other benefits can be identified in the way that information about employment opportunities was used by both sides, recruiting and moving jobs, as in the way that R.W. Hawthorn recruited the Parson's Fitters. The picture beginning to emerge therefore is a nuanced one in which both owners and workers were more able and willing to make choices about how they wished to work and how they wished to organise their businesses. At the same time, however, these choices were also constrained by the pressures arising from the increasing complexity of working processes and consequent changes in the division of labour. As work became more complex and increasingly became compartmentalised between specific tasks, the division of labour between craft and non-craft skills became bigger. As craft work became more specialised, craft unions sought to increase restrictions on who could do the work. The control craft workers exercised over the apprenticeship system in their trade was one of the main ways in which entry to the trade was managed, and this was enabled by the clustering effect of proximate living. This enabled them to restrict access to apprenticeships to family and fellow community members. This limited both the supply of craft labour and the ability of non-craft union members to move into these working environments. It also constrained the ability of employers to deploy new techniques and technology. The long-term effects of these constraints were to limit innovation and allow foreign competition to catch up. Agency has been a running theme through this thesis and it would seem likely

from the Scotia and R W Hawthorn examples that any externalities derived from these small scale decisions might have had cluster wide implications, such as knowledge sharing, skills development and resource efficiency. Whether these externality benefits were of primary importance to the firms and individuals involved is an area for further exploration. It seems likely that they were in reality at least secondary to the ability to maintain employment and production.

These developments also changed the nature of industrial relations as non-craft workers began to attempt to replicate the influence of the craft workers through organising themselves along similar lines. The response from owners was to move in the direction of organising themselves as well, and from the craft workers it was to tighten their control over what they saw as their working world. But whilst these macro level changes were taking place, at the individual and community level choices were still being made that reflected their perceptions of their own interests. This manifested itself in both a pragmatic approach to flexible working, as has been shown in the analysis of the Scotia Works employment data, and in the development of a pedantic approach to demarcation and control of work tasks on the part of the Craft Unions. This it can be argued was an inevitable consequence of the clustering effect for the simple reason that both competition and cooperation are easier in proximity. It also raises the question as to whether intra union disputes such

as demarcation are in fact a 'lock-in' phenomenon, this time of the workforce rather than of the firms themselves.⁵³⁰

Overall, though, the agglomeration benefits were limited for business by the restraints on employment imposed by the apprenticeship system and demarcation constraints on working patterns. They were also limited for workers by the short term focus of employers on shareholder returns and the constraints on innovation caused by proprietorial capitalism. For those employees who could maintain employment by moving from opportunity to opportunity, and for those employers who were able to achieve a solid return on their shareholdings over time, these were probably quite good times, but they also sowed the seeds of long term decline. Each chapter has helped to build a picture of the ways that institutions that represented individuals and communities across the region (and beyond) reflected the myriad choices made, choices that in the main were about seeking to retain and reinforce positions and power that had accumulated over time, even when these choices had ceased to have their original benefits. Whether this came in the form of insisting on demarcation lines even when increasing divisions of labour had rendered them irrelevant or retaining family control through tight control of shareholdings in a joint stock company, each was an example of trying to maintain a status quo that had offered a sense of control but which was no longer relevant as competition and the marketplace moved on. In the end it was the thousands of individual decisions taken by hundreds of

⁵³⁰ D Charles, 'The evolution of business networks and clusters' p 41 in *Industrial Clusters – Knowledge, Innovation Systems and Sustainability in the UK* Eds J F Wilson, C Corker, J Lane, Routledge, London 2023

thousands of individuals, whether labourer, skilled craftsman, office work, manager or entrepreneur, over many years that were the foundation of the success and decline of shipbuilding and engineering in the North East.

Finally, a thesis such as this inevitably poses new questions and hence opportunities. Three examples will suffice here. Firstly, there is an issue concerning whether there is more material deep in the archives yet to be uncovered that could throw more light on management and organisational behaviour. The second area would be to look in more depth at clustering over time in terms of the built environment, both business and domestic, to examine the interrelationship between the two. Technology in the form of GIS systems could prove useful here, but that is for another day. The final possibility has been informed by some recent reading, specifically about the development of management and management techniques in British railway companies in the middle of the 19th Century. Whilst the end product was service rather than a good, there are considerable similarities between the challenges faced by rapidly expanding railways and rapidly expanding shipyards and engineering firms that provide an intriguing opportunity for a comparative study.

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