

PROJECTORS IN SEVENTEENTH- CENTURY ENGLAND AND THEIR RELEVANCE TO THE FIELD OF PROJECT MANAGEMENT

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Abstract

Key words: Project management, projectors, projects, historiography, history, seventeenth century.

The current established historiography of the field of project management dates back to the 1950s and there is little known about the development of this field prior to the Second World War. Critical scholars within this field have challenged the timeline for project management. This historical research provides evidence of project practices prior to the twentieth century by introducing the activities of projectors, who are currently unacknowledged within the field of project management.

The title of projector was assigned to initiators and/or promoters of the idiosyncratic activities that combined elements of public and private gain and were known in the period as projects. The research investigates the genesis of the 'projector' name and maps out the activities of projectors and their involvement within English industrial and economic development. Projectors and their schemes are explored through three different foci. The first focus is archival, exploring a seventeenth-century project within the textiles industry carried out by the projector Walter Morrell. This analysis highlights a number of practices within Morrell's project similar to modern project management, and potentially informs the history of project management. The second focus is through the lens of the late seventeenth-century writer and projector Daniel Defoe, whose seminal publication on projects was reprinted multiple times and consequently shaped public opinion on projectors and the undertaking of projects, this focus was socio-historical. The third focus relates to public-private interest, which played an important role in projectors' undertakings and strongly influenced the connotation of the title 'projector'. This theme is examined through existing PhD theses of scholars who studied the activities of projectors in seventeenth-century England. These three foci inform the contribution this thesis makes to project management history. The originality of this work is in acknowledging the activities of projectors within seventeenth century England, which has implications for project management histories.

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Acronyms and Definitions

APM	Association for Project Management
CPM	Critical Path Method
C/SCSC	Cost and Schedule Control Systems Criteria
GDP	Gross Domestic Product
ICT	Integrated Circuit Technology
IJPM	International Journal of Project Management
IMSA	International Management System Association
IPA	Infrastructure and Projects Authority
IPMA	International Project Management Association
JP	Justice of the Peace officer
PhD	Doctor of Philosophy
PERT	Planning and Evaluation Review Technique
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
MP	Member of Parliament
NASA	National Aeronautics and Space Administration
NHS	National Health Service
NBER	The National Bureau of Economic Research
RAND	Research and Development Corporation
SAIMS	Selected Acquisitions Information and Management System
SAR	Selected Acquisition Report

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Declaration

I declare that the research contained in this thesis, unless otherwise formally indicated within the text, is the original work of the author. The thesis has not been previously submitted to this or any other university for a degree, and does not incorporate any material already submitted for a degree.

Kristina Zekonyte



18/06/2018

Conventions

Original spelling, punctuation and capitalization have been retained in citing Defoe's (1697) 'An Essay upon Projects'. An early modern manuscript by Morrell (1616) on the new draperies has been cited using original capitalization, expanding contracted words and replacing appropriate letters to enable the modern reader to understand the quotations. Roman numerals within texts were replaced by Arabic numbers or words. All the dates are presented in the old style.

Introduction

Histories of the field of project management within the academic literature are mostly limited to the twentieth century (Morris, 1997, Morris, 2011, Garel, 2013). These histories bound our understanding of the field within the given timeline. The absence of accounts of projects conducted prior to the twentieth century has been questioned by a number of scholars within the field in recent years. The interest expressed in the special issue on the history of projects in the *Journal of Project Management* (2013) is presented in the next chapter. This research responds to the invitation by this special issue and introduces a historical account of the activities of projectors in seventeenth century England, who conducted project and therefore are relevant to project management but were not featured previously as part of project management history. This work also forms the main contribution of this thesis to knowledge on project management.

Originally, the intention of the PhD was to analyze the fields of innovation, projects and change management. However, analysis of the pilot study shifted the focus of the thesis exclusively to the field of project management and the relevance of projectors to this field.

Obvious evidence of large-scale projects, such as the construction of buildings, cities and military endeavours dating back thousands of years reinforces the fact that current project management history is limited. There are a number of reasons why it is important to understand the history of project management.

First of all, scholars within the project management field questioned the historiography of this field, which captures only the second half of the twentieth century and mainly only within the US military. According to Marshall and Bresnen (2013), the way projects or project management are understood, even in academic literature, depends on how narrowly or broadly the field is understood and on the selection of narratives for inclusion. Hughes (2013, p684) raises an important question: ‘prior to the 1950s how were projects managed given that their earlier existence has been acknowledged?’ As Garel (2013, p663) suggests ‘very few historians have studied projects as a specific activity and academics in project management are rarely specialists with archives or have familiarity with historical reasoning’ and this could be the reason why project management is currently limited to the twentieth century. The field of project management needs to be broadened through introduction of wider historical accounts, which are currently absent.

Secondly, debates regarding the origins of project management are ongoing. The Manhattan Project, the development of the first atomic bomb in the 1940s, widely

presented as a starting point of the management of projects (Morris, 1997), raises doubts amongst scholars within the field. Lenfle and Loch (2010, p32) concluded that ‘the Manhattan Project did not even remotely correspond to the ‘standard practice’ associated with the PM [project management] today’, mainly because there was an applied trial-and-error as well as a parallel trials approach, which were supported by a very flexible budget. This example illustrated that even recent project contributions to the field of project management have been challenged. ‘The inevitable downside of offering a start date for project management is that the influence of prior events is downplayed’ (Hughes, 2013, p683). Historical accounts exploring practices of projects further back in time would provide a better understanding of the field of project management practices throughout centuries. Understanding the management of projects over time allows the identification of the pre-history of modern project management. Söderlund and Lenfle (2013, p655) observed:

even that project management was “invented” somewhere, sometime — is equally perhaps a management factoid. They might have used different terms, slightly different techniques and management practices, of course, but the task was the same: to manage the project.

Thirdly, current modern management is institutionalised with a constantly upgraded body of knowledge and management models, which are transferable across different industries. However, such a practical guide to project management as the Project Management Body of Knowledge (PMBOK Guide), published by the Project Management Institute (2013a), does not explain how the field of project management evolved and where it originated. The document lacks historical context or acknowledgement of the development of projects. Marshall and Bresnen (2013, p693) commented on the trend to frame the project management body of knowledge within practitioner literature and textbooks, referring to a constant expansion of the number of tools and techniques: ‘while the number of ingredients has increased, the overall recipe remains much the same.’ PMBOK loses credibility due to a lack of acknowledgement of historical processes. The history of project management practices helps to better grasp the overall essence of project management and expands understanding of how the field reached its current stage of development. Therefore, the aim of this research is to inform the history of the field of project management through introduction of a historical account of the activities of projectors, which are currently absent in the history of projects and encourage debate about it.

This historical account of projects conducted within seventeenth-century England projectors’ activities provides examples of project practices, outlines the role of public and private interest in projects, reveals details of projecting culture, explores the emergence of

the title 'projector' and its departure from the English language, and introduces the role of literature in projects. This research illuminates the relevance of projects by projectors/projector-like individuals to the field of project management through the following foci: archival, socio-historical and public-private.

The established histories of project management and debates about their limitations are presented within Chapter 1. This research is positioned amongst histories within Garel's (2013) classification of the history of projects as shown in Table 1. Chapter 2 introduces the methodology of this historical research and presents the results of the mapping exercise of projectors' activities, which illuminates the wide range of fields where projectors were present. Chapter 3 reviews the literature on projectors throughout the centuries, presents the genesis of the title 'projector' and provides short accounts of project proposals by projectors/projector-like individuals. Chapter 4 focus is archival, where a historical study of a textiles project proposal by Walter Morrell (1616) is explored and its relevance to modern project management outlined. It reveals that a number of elements in seventeenth-century project practice are echoed in current, established project management. Defoe's (1697) 'An Essay upon Projects', explored in Chapter 5, reveals that projects were not necessarily proposed for carrying out by the author but were also proposed for others to read and potentially carry out. This book was reprinted multiple times, informing and shaping opinions of its readers on both projects and projectors. The last, public-private interest, presented in Chapter 6, emerged due to a significant change in this aspect over time, and to evidential relevance to projects both within the work of projectors and modern project management. This chapter reveals a number of extraordinary (to the modern eye) private benefits that could be obtained by projectors in addition to, or as well as, the usual reach for profit. To aid the flow of the thesis, a commentary is provided at the end of each chapter rather than as a separate discussion chapter. This approach evolved organically as the best approach for this thesis. Conclusions are presented in Chapter 7, where the relevance of projectors' projects to the field of project management and the contribution to knowledge of this research are highlighted. Future research is also proposed within this final chapter.

A number of aspects of project practice were important in seventeenth-century projects and are still very relevant in project management today, although they were understood differently in the seventeenth century compared to the twenty-first century. These aspects include public-private interest as well as the knowledge and capability of an individual to carry out or propose a project, and were evident within all three foci of the research.

I suggest that the title ‘projector’ was a generic description of an individual more frequently assigned by others rather than through self-identification; an individual referred to by this title had no control over it. This research provides a classification of projectors over a four-hundred-year history after which the term disappeared from English within the meaning explored in this thesis.

Chapter 1. The established historiography of the field of project management

This chapter provides an overview of the established historiography of project management, which is currently limited to the second half of the twentieth century and is mainly informed by experience of the US military. A number of scholars within the field have questioned this historiography. Their views are presented in the second section of this chapter. The established histories of the field of project management are presented within the first section of this chapter, and each subsection is dedicated to a respected publication within the field. The final section provides a commentary on the established historiography of project management (as presented within this chapter) and the relevance of this thesis to current project management debates. It is important to present the history of project management prior to the twentieth century in order to clarify the development of project practices and identify any patterns, as well as better understand how project management reached its current state. It is also important to introduce more historical accounts relevant to the field of project management, as in this case – projectors role in projects of seventeenth century England.

History and historiography are two very important terms used within this thesis and their definitions are as follows: history is ‘the study of what remains of the past in the present’ (Claus and Marriott, 2012, p10); and historiography is ‘what is written and taught about the past’ (Claus and Marriott, 2012, p4), or as Tosh (2015, p52) explained, it is ‘the study of the writing of history, although the term is sometimes also used to denote the range of historians’ writings on a particular theme’.

1.1 Project management

This section introduces the definition of project management and the authors of the three accounts of project management presented within the following subsections. It is important to become familiar with the current definitions of project and project management before engaging with the literature review. According to the Project Management Institute, a project is a ‘temporary group activity designed to produce a unique product, service or result’ (Project Management Institute, 2013b). Project management is ‘the application of processes, methods, knowledge, skills and experience to achieve the project objectives’ (Association for Project Management, 2017). The Project Management Institute (2013b) defines project management as ‘the application of knowledge, skills, tools, and techniques

to project activities to meet the project requirements'. Three accounts of project history are summarized within this chapter and the backgrounds of the authors of these accounts are presented below.

Professor Peter Morris wrote the first two, although slightly different, histories of project management presented within this chapter. He is Emeritus Professor of Construction and Project Management, with the background in construction management and professional project management (The Bartlett School of Construction and Project Management, 2015, UCL IRIS, 2015). Morris has published a number of influential books and articles within the field of project management, including 'The Management of Projects' (Morris, 1997), which is the most influential book on the history of project management. It was subsequently revisited and revised as 'A Brief History of Project Management' (Morris, 2011). Both histories feature in the following discussion.

The third account of project management history, is presented by a professor of management science Gilles Garel (Le Cnam, 2015b). He is Chair of Innovation Management at Cnam and his background is in project management (Le Cnam, 2015a). He is the author of a number of scholarly articles and books (Le Cnam, 2015b). Garel's (2013) article 'A history of project management models: From pre-models to the standard models' was chosen due to its analysis of the history of project management, with the author attempting to explain the models and pre-models of project management in terms of currently established project management history and its previous history. This article was published within a special issue of the International Journal of Project Management (2013).

1.1.1 'The management of projects' by Morris (1997)

This subsection is based on 'The Management of Projects' by Morris (1997), who differentiated the terms 'project management' and 'management of projects'. The latter represents an enlarged, broader meaning of the more narrowly defined 'project management', extending the tasks of planning and control through the inclusion of technology, trade, organization, human resources and other factors. Morris (1997, p1 preface) suggests that 'project management – or the management of projects – has evolved largely as a technical discipline for managing the trade-off between technical decisions ..., time, and money'.

Morris (1997, p4) refers to managing projects as 'one of the oldest and most respected accomplishments of mankind' with illustrations of such projects being pyramids, ancient

cities, cathedrals and mosques, and the Great Wall of China. Modern project management was first applied in the building and civil engineering industries between the 1930s and the 1950s and was closely related to:

- the development of systems engineering in the US defense/aerospace industry and to engineering management in the process engineering industries;
- developments in modern management theory, particularly in organization design and team building; and
- the evolution of the computer, on which project management's planning and control systems are now generally run (Morris, 1997, p2).

Prior to the Second World War only a few theories of management had emerged, with the work of Frederick Taylor, Henry Gilbreth, Gantt and others contributing to practices of project management (Morris, 1997). Scientific project planning techniques developed with a work-flow network planning graph called Adamiecki's Harmonograph (developed around 1896, with the final version published in 1931); Gantt's bar chart was developed in 1917 for production scheduling; and Frankford Arsenal and Wright's path analysis was developed in 1918. Procter and Gamble established a manager-like role in the 1920s, under the 'brand management' description with responsibility for marketing, planning and control of brand or product. Gaddis used the phrase 'project manager' in 1959, explaining that responsibility under this role was 'to create a product'. The development of core project management techniques and concepts emerged in 1955-1970. After that, between 1970 and 1985, project management emerged in industries other than defense and aerospace. In 1985 project management was regarded as being driven by total quality principles.

Modern project management evolved within the US military and the Manhattan Project (the development of the first atomic bomb, 1943-1946) and contributed to subsequent practices, although the vocabulary used was distant from today's modern project management lexicon (Morris, 1997). There was no use of network scheduling but the project demonstrated such principles of modern management as organising, planning and direction. Morris (1997, p10) expressed that he regarded 'only the Manhattan project as a valid contributor to the subsequent practice of project management...'.

Project management activities within the US military and aerospace industries developed the following modern project management techniques and practices: 'the Five Year Defense Plan; ...; Life-Cycle Costing; greater emphasis on front-end Concept Formulation and Contract Definition; new planning and reporting systems requirements (C/SCSC, SAIMS and SAR)...; Should-Cost analysis; Integrated Logistics Support, Quality Assurance, Value Engineering, Technical Data Management; Configuration Management; and the Work Breakdown Structure' (Morris, 1997, pp38-39)'.

An important project management tool: the Critical Path Method (CPM) was developed in 1956, when E.I. Du Pont de Nemours investigated uses for its newly acquired Univac computer with the intention to determine the optimal duration of a project with a minimum total cost and resource allocation (Morris, 1997). CPM became popular in construction scheduling by the late 1960s and was more commonly used than the Planning and Evolution Review Technique (PERT). Morris captures the events contributing to the UK development of modern project management; however, these are excluded from this short summary, since the events were not key to the development of the history of the field. A slightly different historiography written by Morris more than a decade later is presented within the next subsection.

1.1.2. 'A Brief History of Project Management' by Morris (2011)

This subsection is informed by Morris's (2011) 'A Brief History of Project Management' presented in The Oxford Handbook of Project Management. The same author as per the previous account is chosen as a slight change in the historiography occurs. This version of the history of project management highlights the precursors of modern project management and introduces major projects, which were recognised as the genesis of the modern history of project management. Although project management terminology and contemporary project management language was not used before the early 1950s, projects were managed even in ancient times. There are a number of modern project management precursors prior to the 1950s:

- Adamiecki's harmonogram in 1903
- Gantt's chart in 1917
- Official project coordinator roles in the US Army Air Corps in the 1920s
- Project engineers in companies like Exxon and project officers in the 1930s
- Gulick's proposed matrix organisation in 1936

The term 'project management' first emerged in 1953 in the US defense and aerospace sectors (Morris, 2011). The Manhattan Project is known as the earliest example of modern project management, but Morris (2011) suggests that none of this project's tools or language exist in today's project management and he calls it an 'overcooked case'. The sudden increase in demand for Intercontinental Ballistic Missiles in the US Air Force in 1951 led to the joint organisation of the US Air Force Air Research and Development, and

US Material Command under a ‘project manager’ with overall responsibility for the project and the contractors responsible for the weapons system. ‘The Martin (Marietta) company is credited with having created ‘the first recognizable project management organisation’ in 1953 – in effect a matrix’ (Johnson, 1977 cited in Morris, 2011, p 17). Systems (project) management with matrix structures was used as the main control tool in the National Aeronautics and Space Administration (NASA) Apollo project, which landed a man on the moon. Due to the successful performance of NASA, the project management approach gained approval as being beneficial and transferable to other sectors.

A number of tools were used in the US military and NASA: Project Planning and Budgeting Systems, ‘Life Cycle Costing, Integrated Logistics Support, Quality Assurance, Value Engineering, Configuration Management, and the Work Breakdown Structure’ were all included in the “PERT/Cost System Design” guide for the Department of Defense/NASA (Morris, 2011). The tools and their application had a crucial role in the development of the field of modern project management. A number of planning techniques, although improved, are still used, including the Planning and Evaluation Review Technique (PERT) developed in 1957 and the Critical Path Method (CPM) invented by DuPont in 1957-9 (Morris, 2011).

A number of professional bodies were established within the field including the Project Management Institute (PMI) founded in 1969; the International Management System Association (IMSA) founded in 1972, and later renamed the International Project Management Association (IPMA); and European management associations (Morris, 2011). In terms of defining a project management body of knowledge, the Association for Project Management (APM) took the path of the ‘management of projects’ in 1991, with the following elements included: scope, time, cost, resources, quality, risk, and procurement. The APM also acknowledged the importance of ‘objectives, strategy, technology, environment, people, business and commercial issues, and so on’ (Morris, 2011, p22). The first Project Management Institute Body of Knowledge (PMBOK) published in 1983 ‘identified six knowledge elements: scope, time, cost, quality, human resources, and communication management; the 1987 edition added risk and contract/procurement; the 1996 edition added integration’ (Morris, 2011, p22). Morris provides a robust overview of the established ‘history’ of project management. The earliest precursor of modern project management here dates back to 1903 with the establishment of the field in the 1950s.

The history of project management presented within this and the previous account is strongly biased towards the US military and aerospace. Furthermore, modern project management is believed to have developed in the second part of the twentieth century with

the acknowledgement of a few earlier precursors. The next subsection presents a history of project management by Garel (2013).

1.1.3. ‘A history of project management models: From pre-models to the standard models’ by Garel (2013)

This subsection is based on Garel’s (2013) ‘A history of project management models: From pre-models to the standard models’, where the history of project management is divided into three periods of project management: prior pre-models or origins of project management, pre-models or project practices, and project management models. Garel (2013) recommended focusing on the history of project management models instead of singular practices.

The division of project management into two periods originates with Christian Navarre’s (1989, 1993, cited in Garel, 2013) idea of grading modern project management history into ‘degree zero’ which covers the beginning of the twentieth century (‘managerial practices’) and ‘degree one’ which covers the second half of the twentieth century (‘management models’). Garel (2013) introduced the third period and called it ‘minus one’ in line with Navarre’s terminology. This period is prior to the twentieth century, when projects were conducted through improvisation and trial-and-error practices, but the existence of recognized management models was absent.

Garel (2013) argued that managerial thinking developed only with the experiences and organizational theories of practitioners such as Taylor and Fayol. There are four criteria, which suggest the emergence of project management models:

- The management model goes beyond the management techniques or functional hierarchies and has rather a cross-disciplinary character.
- The management model can be generalized and adopted within various sectors.
- Institutions, such as ‘manufacturers, researchers, consultants, schools and universities or public bodies’ formulate and standardize such models, including ‘training and harmonization of tools, terminology, functions, organizations and practices etc.’ (Garel, 2013, p665).
- There are successful examples of management model implementation.

Garel’s (2013) key argument is that every project as organized human activity can go back indefinitely within history, but models of project management emerged only in the second

half of the twentieth century. The oldest reference to project management is dated 1959 within Paul Gaddis' article where the project manager is defined as a person who incorporates the contribution of different departments in order to achieve development efficiency.

There are a number of examples dating centuries back in time, which cover the history of project management 'degree minus one'. Project management thought emerged in architecture and construction work during the late Middle Ages (Garel, 2013). Amongst the precursors of project management is Brunelleschi (1377-1446), who separated design and execution tasks and Alberti, who 'offered a theory of future conceptions of the project' in the fifteenth century (Garel, 2013, p666). Project institutionalization took place through the workforce of different professions. Cathedral construction had a contracting party and a contractor in the twelfth century. Engineers became separated from architects in eighteenth-century France; they systemized their knowledge and practices and were connected to the network of new institutions: 'L'Ecole Nationale des Ponts et Chaussées was itself a school focused on the teaching of projects' in the eighteenth century (Garel, 2013, p666).

A number of new project measurements emerged between the 1930s and the 1960s, and, as such, fall within the period of 'degree zero' (Garel, 2013). The engineering industry mastered the skills of 'funding, cost estimates, prototype design, operating methods, construction site management, supply chain management, contract negotiations, etc.' (Garel, 2013, p667), but there was no dedicated project management system and projects were led in a similar way to any other operation. Only at the end of the 1950s ('degree one') did true models with harmonized tools, practices and roles emerge. By the 1960s, project management was rationalized and the efficiency of the project became the priority within the project. Specialized associations and management tools were formed in the 1960s. Tight deadlines during the Cold War led to the standardization of project management. Garel (2013) disagreed that the Manhattan Project, which was widely acknowledged as the starting point of project management, demonstrated project management, mainly because the budget had no limitations and time pressure was weak.

It was as a result of the PMI's establishment in 1969 that project management techniques and tools were standardized and made applicable to a variety of industries, and this was important to the emergence of project management models (Garel, 2013). The project planning tool PERT was frequently confused with project management in scholarly articles and books. Engineers within the military, who mastered project management tools, such as PERT and CPM, gradually left the industry spreading the use of these tools within other

sectors. Moreover, the Department of Defense, the Department of Energy and NASA within the US made use of these tools compulsory for all their suppliers in the 1980s and so this practice spread across thousands of subcontractors. Finally, the PMI turned professional practices into project management through standardized procedures outlined in the Project Management Body of Knowledge, project certification and the ethics charter. The PMI model is criticized as being ‘a ‘rational’ view of project management’ (Garel, 2013, p668).

Garel (2013) added another layer to the established history of project management by introducing the origins of project management (‘degree minus one’), which was a history of techniques and professions. He clearly distinguished the history of pre-models, which emerged in the first half of the twentieth century and the history of project management models, which emerged in the second half of the twentieth century. However, modern project management according to Garel (2013) dates no further back in time than 1959. The next section is an overview of the special issue on project history within the International Journal of Project Management, where the orthodox project history is questioned.

1.2 International Journal of Project Management special issue ‘Making Project History: Revisiting the Past, Creating the Future’ (Söderlund and Lenfle, 2013)

This section is informed by the special issue on the history of project management within the International Journal of Project Management (IJPM) in 2013, where scholars questioned the established history of project management. Garel’s (2013) article, previously discussed, was part of this special issue. Discussion of the established history of project management was encouraged within the project management community (Söderlund and Lenfle, 2013). Contributors questioned the timeline of the field and its development, as well as its limitations within industrial sectors and geographically. The editors of the special issue suggested that there was limited understanding of the roots of project management, the evolution of project practices and their effect on later projects (Söderlund and Lenfle, 2013). It is

so common in management studies, of making simplifications of the past to promote new as radically different from previous findings, although they show significant similarities between what we already know (Söderlund and Lenfle, 2013, p655).

It is a natural process for project management to evolve through ongoing research and revisit past projects as a part of this research (Söderlund and Lenfle, 2013). Söderlund and Lenfle (2013) criticized short historical sections within textbooks of project management where project management, its techniques and organization are presented without substantial historic context. ‘People historically talked about the management of projects very differently, although the techniques they used are quite similar’ (Söderlund and Lenfle, 2013, p654). The analysis of a number of projects within the same sector potentially could reveal certain patterns and prepare for the future rather than predict it (Söderlund and Lenfle, 2013). Söderlund and Lenfle (2013) also identified a very important aspect of established project management historiography, where projects are presented as extremes of either success or failure. It is not as black or white as sometimes presented, and in many cases it is unreasonable to analyze projects from this angle.

Sir Joseph William Bazalgette, who constructed the main London sewer and the Thames Embankments within the same century, similarly to Marc Brunel, was operating during the same era as the projectors (Hughes, 2013). As Keller (1966, p469) observed, projectors ‘were an essential prologue to future progress, marking out the main directions for research, and creating an atmosphere favourable to innovation’.

1.3 Professionalization of project management

This section explores project management fragmentation and aspects of project management professionalization. This reveals the complexity of project management and limitations within PMI’s aim to standardize project management through the PMBOK. Soderlund (2011, p153) explored the complexity of project management by categorizing published articles on project management within the leading management and organization journals into seven schools of thought: ‘Optimization School, Factor School, Contingency School, Behaviour School, Governance School, Relationship School and Decision School’. As the author noted, ‘an awareness of multiple perspectives provides contrasting explanations and thereby stimulates managerial and organizational creativity’ (Soderlund, 2011, p153). The findings revealed that project development was viewed in both snapshot or static (Contingency School) and dynamic (Behaviour School, Relationship School, Decision School) ways by different schools (Soderlund, 2011). While the first ignores history and evolution, the second view explores project change throughout a period of time. The views on project management presented by these seven schools differ in a number of other aspects, including clarification of the role and practice of project

management through a primary focus on one element of project management (eg. planning, network information, decision-making and others). These schools try to answer different important questions about project management. A variety of views on project management provide alternative choices in looking at the subject, revealing its complexity. According to Soderlund (2011, p168) ‘...theorists and reflective practitioners need to embrace this pluralism, and learn to live with multiple and sometimes competing explorations and explanations’. The author encourages pluralism in project management and the use of multiple theories in exploring and explaining a number of problematic aspects of project management practice.

In terms of PMBOK criticisms, Hodgson and Cicmil (2006), highlighted projects being institutionalized through a number of techniques (PERT, Gantt chart, project-cycle models and others). These techniques focused on logic and control through compliance to a set of standards with PMBOK constrained by premature universal and reflective rationality. The danger was that project management was studied analogically to natural sciences, where universal laws apply. This belief resulted in generalization, standardisation and subsequently professionalization of project management in which a ‘universal model’ was believed to be applicable across a variety of industries and environments (Hodgson and Cicmil, 2006). The PMBOK claims that ‘knowledge and practices which is more or less universal’ is the rationale behind standardization of projects (p35, Hodgson and Cicmil, 2006). Moreover, the authors suggest that the concept of ‘false concreteness’ is not only associated with project definition, but also ‘serves to establish current understandings of project management as laws, inevitable and universal’ (p33, Hodgson and Cicmil, 2006). This standardization of ‘the project’ is an outcome of project naturalization despite the need for constant reflection on additional possibilities and choices. PMI’s PMBOK standardized approach seeks ‘ideal’ within approach to projects and this ‘ideal’ picture of project practice generates need to join professional members and experts. The sense of community is created through communication to various managers, which is tied through membership. Moreover, a globalized approach to project management is achieved through standardization and PMI aspires to do so through PMBOK. According to Towney (2002, cited on page 48 by Hodgson and Cicmil, 2006) , ‘...establishment of universal knowledge of this kind implies a loss of a reflexive and embodied rationality in favour of abstract principles and blind faith in universal techniques’.

The culmination of an ideal project management scenario, to which members of PMI aspire, is project completion on time and in full. However, such outcomes are not necessarily the norm. The construction of Heathrow Terminal 5 illustrates a chaotic

outcome after a project was completed on time and on budget, where seemingly small mistakes had a chain reaction on a complex mega infrastructure, leading to a number of flights cancellations and a large build-up of luggage (Brady and Davies, 2009). Despite the project being completed on time, there were a number of crucial elements to this project, which were overlooked, including car parking for staff, computer logins, and a lack of connectivity between very interdependent systems. This complex organizational and technological system was not rigorously thought through and practically tested. The poor outcome was a result of trust in contractors' responsibility without taking accountability for the project by client, which also led to lack of collaboration of these two sides. As Brady and Davies (p155, 2009) highlighted, the 'client is always ultimately accountable for cost, time, quality and safety'. This mega project success and immediate failure illustrates the complexity of a project, which may often be underplayed.

1.4 Summary

Historiographies of project management reviewed in this chapter reveal that the histories of the field of project management are bounded within the twentieth century, with a few precursors dating further back in time. Morris (1997, 2011) focused on histories of twentieth-century project management with only a few references to the history of projects prior to this time. His historiographies emphasized the US defense and aerospace industries. Garel's (2013) version of the history of project management is divided into three periods: 'degree one' or project management models, covering the second half of the twentieth century; 'degree zero' or project practices within the first half of the twentieth century; and 'degree minus one', which includes history prior to the twentieth century. These histories suggest that current project management is constructed on the basis of skills and knowledge, while management was more experimental and uninformed prior to the twentieth century. The special issue of the IJPM on the history of projects questions the established historiographies of project management and invites research that will extend knowledge on projects through further investigation of historical accounts. This thesis responds to this invitation by presenting a historical account of the activities of projectors

1.5 Commentary

The accounts on the history of project management by Morris (1997, 2011) and Garel (2013) were explored in this chapter. Both researchers pointed out different dates for the

emergence of modern project management and furthermore, these dates differ even in both of Morris's (1997, 2011) own accounts. Unquestionably, it is important to revise and revisit the established history of project management, but after studying three different accounts on modern project management history, it remains a question as to when in fact it emerged. In terms of modern project management, Morris (1997) suggested that it started in 1953, while Garel's (2013) first reference is to 1959. Morris suggested that project management evolved within the US military, whereas Garel (2013) points out that professional project management institutions are the starting point. The period when, according to Morris, modern project management emerged, Garel (2013) presents as project practices, when there were single projects carried out rather than transferable project management models.

The three accounts also contradict each other in terms of the Manhattan Project's role within the history of project management. Morris (1997) suggested that the Manhattan Project was important to the evolution of project management; however in the later account, Morris (2011) referred to this project as being 'overcooked'. Garel (2013), supported by Lenfle and Loch's (2010) findings, disagreed that modern project management emerged at this point because the project was based on trial-and-error practice with a very flexible budget. The Manhattan Project from Garel's (2013) point of view was a singular project management practice. This clash of historiographies illustrates that even established project history requires re-evaluation.

Garel's (2013) reflection on project management models and his encouragement to refer to the modern history of project management as the history of project management models is rational. However, the roots and evolution of these models can be tracked back in time. As is evident within the following chapters, projectors 'borrowed' relevant ideas from other projectors (not even necessarily within the same industry) and adjusted them to their project plan. This transferability was clearly not of an entire project but of fragments of it (as far as we know). Morrell's historical study illustrates this practice (see Chapter 4).

Both Morris (1997, 2011) and Garel (2013) focused on formalised project management, but project management could not emerge at the point of formalisation since an intention to formalise the concept of project management must have had basis and reason. The fact that this specific term was used in 1959 for the first time does not mean that project management did not exist prior to this time, rather the opposite: it means that there was a search for the right term to define the activity of conducting a project and this term was picked up. Both words separately, 'project' and 'manage', were in existence in the seventeenth century. The word 'manage' was used in Morrell's (1616, p59) project plan:

‘It therefore followed, that there cannot be any danger either to the maker or merchant, if it be as faithfully and truly managed in the two last mysteries, which is the dressing and dying’. If PMBOK, with formalised labels and theories, or project management tools like PRINCE2 are faultless, why are new tools of project management still emerging? One of the most recent tools by APM is the ‘Project Initiation Routemap’, which ‘...aids infrastructure providers in strategic decision-making for specifying and initiating major projects by providing a structured approach to assessing and improving sponsor, client and supply chain capability and integration’ was ‘initially developed to support UK infrastructure projects’ (Association for Project Management, 2015). A year later there was a press release on the UK government website suggesting improvement of this tool: ‘The Infrastructure and Projects Authority (IPA) launches new content for the Project Initiation Routemap for improving the delivery of major projects’, which added ‘two new modules on risk management and asset management, to complement the 5 existing modules’ (Infrastructure and Projects Authority et al., 2016). This is one of the examples suggesting that there are no universal and flawless tools, contrary to what project management professional bodies suggest by providing universal tools and knowledge for project management. This statement can only be supported by a number of failed large projects by the UK government. One of these examples is the abandoned project on the NHS IT system, which was launched in 2002 and abandoned in 2013, and cost around £10 billion instead of the expected £6.4 billion (Syal, 2013). Another outrageous failure relating to a project’s budget is the Scottish Parliament building, which opened its doors in 2004; the project lasted nearly 10 years and cost over £400 million instead of the £40 million forecast (The Telegraph, 2008). There are numerous examples of projects initiated by the UK government in recent years that have suffered long delays, massive over-budgeting and, in some cases, have never been completed. How can these failures be explained if there are universal ‘perfect’ tools for managing projects and professional project management organizations offer all the knowledge needed to properly manage the projects?

Even well-known academics do not value history, for example, Professor John Kotter (1996), cited in Hughes’ article (2016, p456) ‘people who are making an effort to embrace the future are a happier lot than those who are clinging to the past’. However, without looking at the past, there is no way to learn from successes or failures and therefore improve project management in the future. The examples of the NHS IT system and Scottish Parliament building could be ignored and the UK government could hope that newly emerging tools will solve all issues. This research will illustrate that the history of project practice could go back hundreds of years and that it is relevant to the established

history of project management. There is no reason to ignore the pre-history of project management and there are multiple reasons to embrace it.

Morris (1997; 2011) and Garel (2013) referred to projects from earlier centuries with very few details. Earlier project-based activities require far greater coverage in a revised project management history. Acknowledgment, as per the IJPM special issue, is a step forward and this research draws upon the work of Hughes (2013) and Marshall and Bresnen (2013), who explored projects carried out in the age of the projectors and highlighted their relevance to the field of project management. Every account of an earlier project will help solve the jigsaw puzzle of the history of project management. This thesis contributes to the debate featured in IJPM on project management pre-history. It introduces a historical account of the activities of projectors in the seventeenth-century England. As per Garel's (2013) classification, it is written from a 'degree minus one' perspective and is positioned within the project management historiographies explored in Table 1. Project practices prior to the twentieth century are explored through the accounts of projectors in Chapter 3; a further focus is placed on seventeenth-century England in Chapters 4, 5 and 6. The next chapter, Chapter 2, presents the methodology of the research for this thesis.

Degree	-1	0	1
The stages in the history of projects	Origins/ prior pre-models of projects	Pre-models/project practices	Project management models
Time period	Prior to the 20 th century	Beginning of the 20 th century	Second half of the 20 th century
Historiographies	IJPM (2013) (particularly Marshall & Bresnen, and Hughes) Zekonyte (2017)	Morris (1997)	Morris (2011) Garel (2013)

Table 1. Mapping of historiographies using the three degrees approach to the history of project management

Source: Garel (2013)

Chapter 2. Research methodology

2.1 Research aim and objectives

The main research question was as follows: how is the history of projectors within seventeenth-century England reflected within the current history of the field of project management? The research aim was to explore projectors within seventeenth-century England and their contribution to the history of the field of project management through archival, socio-historical and public-private foci. The research was divided into five objectives, summarised in Table 2, with each objective explained in detail below the table.

Objective	Approach
<ul style="list-style-type: none"> • To explore the genesis of the term 'projector' 	Explore the secondary sources (see Chapter 3)
	Explore the archival records online (see Section 2.4)
	Review English/Latin dictionaries
<ul style="list-style-type: none"> • To map out projectors' activities and their involvement within England's industrial and economic development 	Explore the secondary sources (see Chapter 3)
	Complete the archival records search online (see Section 2.4 and Appendix 1)
<ul style="list-style-type: none"> • To establish the histories of the field of project management 	Explore the secondary sources (see Chapter 1)
<ul style="list-style-type: none"> • To explore the histories of projectors within the seventeenth century through archival, socio-historical, public-private foci 	Identify a projector for a historical study (archival focus in Chapter 4)
	Identify a piece of writing by a well-known author on projects and projectors (socio-historical focus in Chapter 5)
	Explore primary sources for the foci above
	Identify public and private interest within projectors' undertakings through analysis of PhD theses on projectors (public-private focus in Chapter 6)
<ul style="list-style-type: none"> • To position projectors' activities within current understanding of the history of project management 	Present the findings (see commentaries within each chapter)
	Uncover how the findings contribute to the established histories of the field of project management (see commentaries and Chapter 7)
	Identify the contribution to knowledge (see Chapter 7)

Table 2. The objectives of the research

The first objective: to explore the genesis of the term 'projector'

The genesis of the term 'projector' was explored and defined through analysis of secondary sources (see Chapter 3). A search was carried out of the English and Latin dictionaries held within the British Library, which proved unfruitful. Latin dictionaries were chosen as another potential source of data because Latin was the universal language of communication amongst scholars in Europe in the middle of the seventeenth century (Gribbin, 2005).

The second objective: to map out projectors' activities and their involvement within England's industrial and economic development

The fields of the projectors' activities were explored through an analysis of secondary sources (see Chapter 3) as well as through a search carried out on online archival records. Archival records from the main UK archives, libraries, museums and private collections were explored online. The mapping table of the fields of projectors' activities is presented in Appendix 1 and summarised later in this chapter (see Section 2.4).

The third objective: to establish the histories of the field of project management

The field of project management was explored through secondary sources (see Chapter 1).

The fourth objective: to explore the histories of projectors within the seventeenth century through archival, socio-historical and public-private foci

Examination of three historical studies of projects by projectors was initially intended. However, the pilot study reshaped the direction of this thesis and the research itself. Firstly, the fields of innovation, and project and change management were examined but the focus fell on the field of project management, which appeared to be particularly relevant to the activities of the projectors. Secondly, the three historical studies were deliberately replaced by chapters with archival, socio-historical and public-private foci. It became evident that the choice of these three foci enriches the research and enables a more comprehensive picture of projectors' undertakings than initially intended with a single viewpoint. The archival focus was on a project carried out by a projector within seventeenth-century England. This project was part of the pilot study. The socio-historical focus was on the work of a well-known late seventeenth-century writer. This author was chosen due to his popularity and, most importantly, due to his work being particularly

relevant to projects and projectors. Additionally, a number of scholars have also referred to this author as a projector. The last focus on private-public interest emerged due to the importance of these aspects within projectors' undertakings. PhD theses on projectors were also studied as part of the literature review. The direct and indirect evidence of public-private interest within these theses ensured they were re-examined to gain further insight and build a case on private-public interest. This approach was reinforced by the fact that only one out of five scholars cited another scholar's thesis, despite the fact that academic writing on projectors and their culture is scarce. It became evident that building on existing findings by peers would have shaped recently completed PhD theses differently.

The fifth objective: to position projectors' activities within current understanding of the history of project management

These findings were presented in the conclusions chapter and the contribution of the findings to current knowledge in the field of project management was specified.

2.2 Methodology and method

The methodology of this research evolved in relation to increasing interest in the history of project management as it is known today and the rising concern 'in the project management community about the lack of historical understanding of the emergence of project management' (Söderlund and Lenfle, 2013, p654). As discussed in Chapter 1, the current history of project management is limited to the twentieth century. A number of scholars (Hughes, 2013, Garel, 2013, Söderlund and Lenfle, 2013, Marshall and Bresnen, 2013) within the field of project management have questioned this timeline, and the interest in exploring the pre-history of project practice is particularly evident in the IJPM special issue on the history of projects, featured in Chapter 1.

Modern history of project management is constructed out of multiple historiographies. This thesis offers a historical account of projects conducted by projectors within seventeenth-century England, adding another layer to the established history of project management. Söderlund and Lenfe (2013, p661) suggest that a broader history of project management would have positive implications for the academic environment:

For the field of project management it might create a better understanding of the project practices of the past, establish a stronger identity for those people interested in the project management past, and thereby as a particular scientific inquiry.

One of the types of research into project history proposed by Söderlund and Lenfle (2013, p657) in the special issue of IJPM is 'landmark projects and project narratives'. The 'Archival Focus' chapter presented in this research (see Chapter 4) adds to this stream of research as project narrative. This historical account is a response and addition to the debate within the journal and it was chosen to present a history of projects through the lens of the projectors. The words 'project' and 'projector' are recognizably congeneric and were closely interrelated prior to the twentieth century (before the optical instrument took over the title 'projector'), when individuals involved in projects were referred to as projectors. However, projectors are absent from the history of project practices despite this obvious relevance to projects. Although this title in the sense presented within this thesis faded out of English prior to the twentieth century, its relevance to the history of project practice is unquestionable. A further focus of this research on the seventeenth century emerged through the pilot study and literature review, which indicated the changing picture of projectors and projects evolving within this century.

2.2.1 Approach

This research is historical research. 'The essence of historical enquiry is selection - of 'relevant' sources, of 'historical' facts and of 'significant' interpretations' (Tosh, 2002, p178). The research was exploratory, mono-method qualitative and inductive interpretative, using both an archival research strategy and gathering insights from the secondary sources. 'An archival research strategy makes use of administrative records and documents as the principal source of data' (Saunders et al., 2012, p178). An interpretivist or constructivist paradigm is appropriate for qualitative methods where documentary analysis is one of the tools used (Mackenzie and Knipe, 2006). According to Saunders et al. (2012, p149), 'the term research philosophy relates to the development of knowledge and the nature of that knowledge' or in other words to epistemology and ontology. The ontological position is subjectivism as '...the subjectivist view is that social phenomena are created through perceptions and consequent actions of social actors' (Saunders et al., 2012, p150).

Historical facts found in the evidence cannot under any circumstances be squeezed into preconceived notions of what it is that we wish to argue and made fit a pre-existing theory (Claus and Marriott, 2012, p10).

Potential bias is acknowledged, although avoided to the best of the researcher's ability, however, subjectivity always remains as long as a human factor is present. This is because

the researcher's representation of the data is influenced by personal experiences and understanding. Bias practices of '...selectively reporting research results, or in making false claims to expertise on matters beyond the scope of your specialist field' should be consciously avoided (McDowell, 2002, p79). In terms of epistemology, this research took an interpretivist approach '...that advocates that it is necessary for the researcher to understand the differences between humans in our role as social actors' (Saunders et al., 2012, p150).

This research explores projects of projectors within seventeenth-century England through the following three foci presented in three chapters: archival, socio-historical and public-private. The first focus is on a historical study of a project plan by a seventeenth-century projector (see Chapter 4). This chapter is presented through a description of the project plan, followed by the additional data from secondary sources and an illustration of the project's relevance to modern project management. This in no way suggests that projects were conducted in the same manner in the seventeenth century as they are today. The objective is rather to illustrate how projects were conducted at the beginning of the seventeenth century by projector and identify the elements of those practices that echo within current project management. These elements evolved from Chapter 1 on historiographies of modern project management as well as the literature review section on projectors (see Chapter 3). Content analysis was not used since the aim of this exercise was to contextualise the data in order to guide the reader through the resonance of the project proposal within current project practices. This chapter is presented through narrative and then the relevance is illustrated to established project management through corresponding words, actions or intentions (see project management application and commentary in Chapter 4). We should not look at the past through the lens of the present in order to avoid anachronism. However, connecting the past to the present is a way of illustrating the aspects of project practice, which have remained the same, similar or have changed completely within projects. The archival focus chapter (see Chapter 4) will attempt to explore this route without suggesting that the seventeenth-century projects were carried out in the same way as in the twenty-first century. As is evident from the following chapters, projects in the seventeenth-century were known by the same name, although the definition of a project was different. Projects must adjust to a changing economic, technological, social and political environment. The title 'project' as understood today will most likely have a slightly different meaning in the twenty-second century, but is this a reason to ignore the history of project management in the twenty-first century?

Projects in a book format by a late seventeenth-century writer are introduced in the chapter on socio-historical focus (see Chapter 5). The overview of these projects as well as

opinions on projects and projectors, expressed within the book, is presented through description. The objective of this chapter is to illustrate the projectors' culture, which involved not only project proposals with the intention of carrying them out but also publishing project proposals as books, which shaped society's understanding of projects and projectors.

Aspects of public-private benefit in projects of projectors are explored through the study of five PhD theses on projectors. This chapter (see Chapter 6) is descriptive and traces changed perceptions of private and public benefit throughout the seventeenth century.

All three foci aim to present practices of projects, projecting culture and the projector's role in projects within the seventeenth century and provide a historical account of projectors and their project practices.

2.2.2 Sample and sources

The contribution to knowledge of the field of project management was achieved through the following three foci: archival, socio-historical and public-private. Primary sources were explored within each of the following two foci: archival and socio-historical. The third focus area on public-private interest was investigated through five PhD theses on projectors, which are secondary sources. Sources for the first two foci and some of the sources for the third focus area were identified from the literature review. Therefore, purposive non-probability using a 'snowball' strategy was appropriate sampling for this research (Saunders et al., 2012).

The sample is credible in verifying the contribution this research makes to established histories within the field of project management. Even a single historical study, contributes to the history of project management through introducing the activities of projectors, which are currently unacknowledged.

2.2.3 Data

Qualitative data was explored within this research, focussing upon primary archival records within two foci and secondary records within the third focus point. McDowell (2002) suggested that in terms of primary and secondary sources the format of the record is not as important as the circumstances and the time when the record was compiled, as well as, the content within it. Primary records are mostly compiled at the time that a specific

event described in the records took place. Secondary sources are mostly written after an event has taken place; they contain interpretations of primary sources and are most likely written by people absent when the event took place (McDowell, 2002). Documents must be critically examined and McDowell (McDowell, 2002, p111) advocates the following principles:

- Intention of the document: factual or other
- Intentional access to the record: public or restricted audience
- Expectations regarding the confidentiality of the record
- Author's expertise in relation to the record's topics

The records on projects carried out or proposed by projectors with particular relevance to the field of project management were explored within this research. Since the data being explored is centuries old, there are challenges accounted for within the timeline. One example explained later in this chapter is the development of a new skill by the researcher, palaeography, which is necessary for reading handwritten manuscripts of the Stuart period. McDowell (2002, p75) highlights that 'the most promising research projects are those where the topic is narrowly defined and the sources are not too extensive.' Internet-mediated access involving the use of different computing technologies (Saunders et al., 2012) was used to access the records.

2.2.4 Data analysis

...any attempt to reconstruct the past presupposes an exercise of imagination because the past is never completely captured in the documents which it left behind' (Tosh, 2002, p158).

This research was written through a combination of description (recreating the past) and analysis (an attempt to interpret the data) (Tosh, 2002). The first step in the analysis was to authenticate the documents; this was followed by content interpretation or internal criticism (Tosh, 2002). As Saunders et al. (2012) suggest, qualitative research contains large sets of data, in terms of volume and complexity, which need to be explored, analysed, synthesised and transformed. Conceptualisation of qualitative data involves classification into categories. This research followed a thematic data analysis, and combined thematic and chronological approaches.

In terms of historical research, it is important to take into consideration Grassby's concern with regards to analysis of historical data, which 'might actually reveal more about the

lenses through which scholars and contemporaries have looked at and judged particular phenomena than about the properties of the phenomena themselves' (1995, cited in Yamamoto, 2009, p23). Anachronism, which is 'the unthinking assumption that people in the past behaved and thought as we do' (Tosh, 2015, p8), should be avoided. However, connecting the past to the present is a way of illustrating relevance to the field explored, similarities and differences of the research matter and/or presenting change throughout time. It is important to be aware of our assumptions impact on interpretations.

Saunders et al. (2012, p557) propose a generic approach to analysing qualitative data, not aligned with a specific theoretical approach, but following general principles of qualitative data analysis. This approach (Saunders et al., 2012, p557) involves:

1. Comprehending often large and disparate amounts of qualitative data
2. Integrating related data drawn from different transcripts and notes
3. Identifying key themes or patterns from them for further exploration
4. Developing and/or testing theories based upon these apparent patterns or relationships
5. Drawing and verifying conclusions

Categories were derived from both the literature and the data collected, which were then reworked in terms of the titles, categories or subcategories assigned (Saunders et al., 2012). The units of data were assigned to appropriate categories. Only after reconstruction of the past, were insights to the present applied (Tosh, 2002). The findings were located within the context of the current history of project management within Garel's (2013) favoured framework, which classifies the history of project management into three degrees (see Chapter 1, Table 1). The findings of this historical account of the activities of projectors is classified under the 'degree minus one' period representing the origins of project management.

2.2.5 Scope

The research explored projects carried out by projectors in seventeenth-century England and therefore the research was restricted to the UK. However, two key records located outside the UK were also explored. The primary source for the pilot study was located in the United States of America (details are provided within Section 2.3 of this chapter) as was the source for the chapter on socio-historical focus (see Chapter 5).

2.2.6 Limitations

The standard limitations of historical research were acknowledged. Data gaps are common when analysing historical data and it is the researcher's responsibility to manage time realistically and find data for the research whilst highlighting known gaps and their impact on the research. Data interpretation can be challenging when analysing records that go back hundreds of years. This potential limitation was minimised by providing background information about the century being researched. Reviewing the work of other scholars relating to specific projects or projectors served as a guide towards accurate interpretations. Historical data may contain errors about which the researcher is not aware, however this limitation should not stop the research. It was possible to double-check doubtful historical data by accessing multiple sources.

A greater concern related to the choice of unfruitful historical research studies that provided no contribution to the field of project management. This limitation was addressed through careful selection of primary sources that suggested potentially fruitful characteristics within the secondary source. As Tosh (2002) stated, it is important to evaluate the authenticity of the document with regards to the author, place and date of the document; this was done. It is also important to assess the consistency of documents, acknowledging facts and clues about the period, style and language. Records were kept within archives and professional archivists were helpful with these questions.

The advantage of the three different focuses (see Chapters 4, 5 and 6) was that they encouraged different ways of understanding the activities of the projectors. The disadvantage of three different foci was that there was less in-depth investigation than with one focus point. However, every angle of each focus area was carefully explored and presented, adding richness to the theme of this thesis through multi-angle views on the same subject.

2.2.7 Ethical Issues

Ethical issues were not envisaged given the historical nature of the research.

2.3 Pilot study

The research was split into two phases: the first phase was the pilot study and the second phase was the actual research. The pilot study was successful in identifying the appropriateness of the field of project management. The choice of the pilot historical study was informed through reading Zell's (2001) article 'Walter Morrell and the New Draperies Project, c. 1603-1631'. Zell's (2001) exploration of the projector Walter Morrell and his project within the textiles industry contains many details about Morrell's pursuits and also hints of a detailed project plan manuscript comprising of three books written by Morrell.

This manuscript is held within the Huntington Library in San Marino, California since the item was purchased at a Sotheby's auction in December 1989 (Huntington Library Home, 2015). The Huntington Library holds a large collection on seventeenth-century England, which may explain the purchase of this particular manuscript. The manuscript was not available online when the search commenced but Vanessa Wilkie, the curator of Medieval and British historical manuscripts within the Huntington Library, was extremely helpful and the manuscript was received in PDF format.

The first obstacle in conducting the pilot study analysis was acquiring the skill of palaeography in order to read one hundred pages of seventeenth-century handwritten manuscript (over 30,000 words). This task was aided with the help of Munby et al.'s (2002) book 'Reading Tudor and Stuart Handwriting' which enabled successful transcription of the manuscript.

The second obstacle related to access to the Hatfield Archives, which had been limited for nearly a year due to a shortage of staff. Zell (2001) had examined records within this archive and the findings from his article were used as additional data to enrich the historical study. This pilot study informed the shift of the research to focus exclusively on the field of project management, which emerged as particularly relevant to the activities of the projectors.

The manuscript was in line with Michael Zell's article (Morrell, 1616, p24). Whilst exploring the manuscript, and comparing Zell's quotes with the transcribed text, the following mistake in paleography was noticed. The parish of Enfield was asked to pay a levy of nearly two hundred pounds and Morrell was charged twenty pounds. When Morrell questioned the price, he referred to 26 shillings and 8 pence, which each household was supposed to pay. However, the figure presented by Zell (2001) was 24 shillings and 8 pence. The Huntington Library staff also confirmed the corrected figure.

The historical study was informative for the research due to the detailed project description within the manuscript, which survived despite being written four hundred years ago by the projector Morrell. Although Zell (2001) explored Morrell’s project in a different context, his article, as a benchmark for this research, was an important factor in choosing this historical study. The learnings of the pilot study were valuable in reshaping the project and increasing awareness of potential constraints relating to historical data. Whilst Morrell’s historical study was initially undertaken as a pilot study, it was subsequently decided to turn it into archival focus chapter within the thesis (see Chapter 4) due to what it revealed. The next step involved changing the direction of the research and identifying two further foci of the research: socio-historical and public-private. The next section maps findings relating to the projectors’ activities.

2.4 Mapping of the fields of projectors’ activities

The aim of the mapping exercise was to gain an overview of projector activities and to explore the availability of records online. Initial mapping was carried out with regards to the main UK online archival institutions using the search term ‘projector’. All records referring to the term ‘projector’ as a technical device were eliminated from this mapping exercise. The search was fruitful, identifying 112 records within nine archival institutions. The number of records within each archive is presented in Table 3; a number of them located at the same archive were interrelated.

Archive	Number of records
The British Library	35
The National Archives	19
London Metropolitan Archives	17
Warwick Archives	14
Senate Library House	13
The Wellcome Library	9
The National Library of Scotland	3
The Parliamentary Archives	1
Bishopsgate Library	1
TOTAL	112

Table 3. The number of records on projectors within the online archives

The records presented in the table above cover five centuries. The number of records assigned to each century is presented in Table 4. A portion of these records were spread over more than one century and for this reason the total number of the records in this table is greater than the number indicated within the archives (see Table 3 and Appendix 1). The smallest number of records was assigned to the sixteenth century and the largest number to the nineteenth century. There was one entry with no reference to the year of publication.

Century	Number of records
16 th	5
17 th	13
18 th	29
19 th	55
20 th	14
No reference	1

Table 4. The number of records relating to projectors within different centuries

Projectors were active in various fields (see Table 5). Two of the records explored referred to a projector as a literature-based character, and also the field of projector activity was not defined in sixteen records. The objective of this exercise was to preview the range of fields within which projectors were active and it was carried out prior to the literature review (see Chapter 3). As the literature review progressed, it was clear that the activities undertaken by projectors were limited only by their imagination; this was also evident within the mapping exercise.

Fields in which projectors were active	Number of records
Communications	23
Railway	9
Navigation	8
Town design	8
Drinking water supply	6
Finance	3
Health	2
Architecture/building	4
Divorce	3
Insurance	3
Export of slaves	2
Mining	2
Banking	2
Education	2
Public dispensaries	2
Weighing the Fame	1
Lottery	1
Trade	1
Textiles	1
Electricity	1
Sanitation	1
Compass	1
Law	1
Fishery	1
Oil manufacturing	1
Making peers	1
Fen	1
Brewing	1

Table 5. The fields in which projectors were active

Searches of the following online archives produced no records when searching on the term ‘projector’: City of Westminster Archives, The Royal Archives, The Business Archives Council, The Working Class Movement Library, The UNESCO Archives, The Museum of London, The British Film Institute (BFI), The Old Bailey, The Goldsmith Collection, Bill Witness Archives (private), The Historic Hansard, The IHR Library, OPAC City of London Libraries, The Wills Archives (private collection), and The Archon Directory. However, this is not an indicator that there are no records of a specific projector or project within these archives and libraries. The number of digitised online records is relatively low and amongst the most common reasons for digitising a particular record is the interest of a

researcher, library or archival institution in that particular record. For example, the National Archives is one of the largest public records holders in the world with an impressive 11 million historical government and public records (around 200 kilometres of shelving) dating back 1,000 years, but only 5% of those records are digitised (Archives, 2013, Archives, 2014a, Archives, 2014b). The search online also strongly depends on the key words attached to the description of the record input by the librarian or archivist. This fact only suggests that there might be additional records relevant to a research and there might be alternative ways of searching for them. For example, Morrell's manuscript on the New Draperies project was not available online but after reading about it in Zell's (2001) article, appropriate archivists were approached within Huntington Library and the record was received digitally as well as set on library's records page becoming available for future research.

The initial mapping exercise was completed in April 2014 with the purpose of gaining an indication of those fields where projectors were active, as well as exploring the number of relevant records available within the main United Kingdom libraries and archive online systems. This exercise identified further techniques of searching for prospective records and assisted as a tool illustrating the fact that the word 'projector' was likely to be excluded even from the description of a record on a particular projector.

2.5 Summary

The methodology chapter provides an overview of the historical research through highlighting the question and objectives of the research as well as presenting the research approach, methodology and methods, samples and sources used. The first two foci of the research (archival and socio-historical) were composed based on studying primary and secondary sources, while the third focus area (public-private) insights were drawn from the secondary data. The previous section of this chapter presented the wide range of fields where projectors were active, which was obtained through mapping UK online archives. This research presents a historical account of project practice within the undertakings of projectors in seventeenth-century England and is a response to the IJPM invitation to broaden the history of project management as we know it today through introduction of currently unacknowledged projectors.

2.6 Commentary

The mapping of the activities of projectors within the online search systems of the archival institutions was very informative. It revealed the range of the fields in which projectors were active over five centuries and also exposed the potential constraints in searching such records. The number of digitised records is very limited and their label does not always refer to the term 'projector'. Therefore, consultations with archivists informed the research approach, since potentially valuable records were likely not to be digitised. The other learning was that it was important to eliminate the term 'projector' from the search when the meaning attached to it related to an optical instrument. The pilot study triggered a change in the technique of searching for the specific records. It was improved through an expanded search online, which included the following information: the full name of the projector, the name of the business, location, year/century and the industry title. The next chapter explores the genesis of the name 'projector', the change in the connotation of this label and projectors' activities over a few centuries, explaining the reasons behind the demand for projectors.

Chapter 3. A historical overview of the role of projectors in society

The previous chapter overviewed the methodology used within this thesis. The first chapter explored the historiographies of project management and introduced both an orthodox and revisited view to the history of project management. This chapter expands on the latter through the study of projects proposed or conducted by projectors.

The name ‘projector’, in the twenty-first century, is commonly applied to an optical instrument. However, a completely different meaning was attached to this word between the sixteenth and the beginning of the twentieth centuries with entrepreneurial and managerial individuals being called ‘projectors’ in this era. A number of projectors carried out thoughtful projects leading to improvements in various spheres and a fair proportion of them were involved in projects, which never commenced, were unsuccessful or failed as a result of the projector’s imagination exceeding reality. This thesis explores the activities of industrial projectors in the United Kingdom.

The genesis of the name ‘projector’ will be explored within the first section; this will be followed by sections investigating the role of projectors within the context of the sixteenth, seventeenth and eighteenth centuries. The reasons behind the demand for projectors and the benefits, such as monopolies and patents, which attracted projectors to battle for their ideas, are explained throughout these sections. The positive or pejorative label attached to the name ‘projector’ is studied throughout this era. Satire and art in general, for example, plays, songs, and various writings also played an important role informing and forming society’s opinion of the projectors. This chapter draws heavily upon the work of scholars, such as Thirsk (1978), Zell (2001), Yamamoto (2010, 2011, 2012) and Ratcliff (2012), amongst others.

3.1 Genesis of the term ‘projector’ and other related definitions

A number of scholars from various disciplines have attempted to provide a definition of the term ‘projector’ (see Table 6). While these definitions differ, all of them uncover meaning of this title. Scholars, including Heller (1999), Zell (2001), Yamamoto (2009) and Hamilton (2013) frequently referred to projectors as entrepreneurs. In search of more precision, the characteristics attached to the name of ‘projector’ are analysed later in this chapter.

Definition	References
‘The name of projector was commonly applied to these mechanical inventors and the promoters of schemes for industrial expansion on the grand scale’.	Keller (1966, p467)
Latin meaning of the word ‘projector’, where <i>proiecere</i> could mean ‘to throw forward’ and ‘to display’, and <i>jactare</i> to ‘discuss, to boast of’, and to ‘make an ostentatious display’.	Oxford English Dictionary definition cited in Yamamoto (2012, p380)
‘The Sophist proceeds on the hypothesis that he who forms a project must be a projector; whereas the bad sense that commonly attaches to the latter word is not at all implied in the former’.	Whately’s definition in the Oxford English Dictionary (1827, cited in Sheldon, 1972, p302)
‘Projectors were individuals both entrepreneurial and public spirited, whose schemes promised to combine private profit with public benefit’.	Zell (2001, p653)
The ‘term ‘projector’ meant creator, author, or inventor, in this broad, early modern sense of inventor’ and it described ‘anyone scheming for power’ in the seventeenth century although there were exceptions as the same century’s pamphlet ‘Grand Projector’ described projector in sense of ‘devisor of a new plan’.	Ratcliff (2012, p343)

Table 6. Definitions of the title projector

The term ‘projector’ meaning ‘an individual’ was widely applied between the sixteenth and nineteenth centuries, significantly fading before the beginning of the twentieth century when the same name was given to a popular optical instrument. Nonetheless, Sheldon (1972, p302) unexpectedly refers to the name of ‘projector’ in his article written in the second half of the twentieth century, suggesting that projectors operated even then: ‘today it can still be used in this pejorative sense, although its more common meanings apply to respectable people with projects and to optical instruments for projecting images’. Hamilton (2016, p33) suggests that the word projector was used in the 1630s. Feingold (2017, p63) indicates that this title emerged in ‘...English language during the 1610s, it invariably denoted a grasping parvenu – if not outright charlatan – rather than a public-spirited man’ and adds that it

...entered the English language during the heydays of, and in response to, monopolies and patents settled on grasping courtiers and schemers of all sorts. Such circumstances ensured the persistence of pejorative connotations that would

cling to individual “projectors” as well as to ideas or courses of action that would seem novel – and potentially injurious (Feingold, 2017, p75).

Thirsk (1978) refers to the emergence of projectors definitely prior to the 1590s. The name projector gained a pejorative meaning at certain times throughout history. This change is further explored later in this chapter.

The other important word in the age of projecting was ‘project’. Unlike ‘projector’, the word ‘project’ is currently used in everyday language. Yamamoto (2012, p380) describes projects in the projectors age as ‘...at best a vision of a future society and an audacious plan about realizing that vision through collective action’. Similarly to the label ‘projector’, the word ‘project’ had both positive and pejorative connotations at different points in history. Keller (1966) suggests that projects were synonymous with government corruption and tyranny in the seventeenth century. Although ‘project’ was an important term in a progressive environment, the meaning of the word was diverse and was mostly a negative label, such as ‘ill success’ and ‘ill-executed schemes’ in the eighteenth century (Sheldon, 1972). Sheldon (1972) observed that the word ‘project’ was substituted by the word ‘scheme’ and, once ‘scheme’ gained pejorative meaning in the nineteenth century, there was a reversion back to the word ‘project’ as a more positive label. She concluded that a parallel reversal in the connotation of the words ‘project’ and ‘scheme’ took place when the words’ pejorative sense was lost and a favourable sense was gained. Yamamoto (2009, p335) argued that ‘the terms 'project' and 'projector' were not accurate descriptions of the practices of innovation but negative stereotypes about them’.

The research focus beyond this chapter is on seventeenth-century England. The description of a project by the contemporary Defoe is taken in this thesis as the definition of projects in the seventeenth century. Defoe (1697, p1) referred to the era he lived in as ‘The Projecting Age’. His (1697, p20) definition of project is ‘a vast Undertaking, too big to be manag’d, and therefore likely enough to come to nothing’ and ‘...the Essential Ends of a Project in it, Publick Good, and Private Advantage’ (1697, p28). Projects ‘on the honest basis’ are beneficial for public (through ‘Improvement of Trade, and Employment of the Poor, and the Circulation and Increase of the publick Stock of the Kingdom’(1697, p10-11)) and ‘adventur’d on the risque of Success’ (1697, p24). Moreover, he refers to colonization as not an example of project since it had already commenced.

The other important word in the age of projectors was ‘invention’ which differed from its contemporary definition. Ratcliff (2012) investigated the change of meaning of the word ‘invention’ over the centuries. According to Ratcliff (2012, p343), while devices of rhetoric were understood as inventions in the sixteenth century, they referred ‘to new

creations of all kinds' in the seventeenth century, which included anything that was new to the country, such as foreign products, as well as actual newly created products or processes.

Analysis of the terms 'projector', 'project' and 'scheme' illustrates inconsistencies of meaning at different points in time in the history of projectors. Subsequent sections within this chapter explore the activities of projectors throughout the sixteenth, seventeenth and eighteenth centuries and provide context in which the meaning of these terms changed. The next section will investigate the sixteenth century and the projectors' role within this timeframe, as well as important elements of projecting activities such as monopolies and patents.

3.2 Projectors in the sixteenth century

The literature suggests the name 'projector' as an entrepreneurial or managerial individual has existed for around four to five hundred years. The name of projector, as analysed in the previous section, described individuals with an interest in projects, changed its meaning throughout time and then disappeared from common language. The popularity of projectors emerged in the sixteenth century in relation to social, economic and political reasons, as explained in this section.

3.2.1 Demand for projectors

The demand for projectors was unsurprising in the middle of the sixteenth century as various political, economic and social events pushed England into a difficult economic position. Projects in the 1530s and 1540s were bureaucratic and linked to the growth of inland production and foreign competition (Heller, 1999). England's involvement in the war with France during Edward's VI's reign strongly influenced the country's stability as a dramatically increasing price index drove people into poverty (Thirsk, 1978, Yamamoto, 2012). It was common for all working-class family members to be employed and each member of a family to work in a few unrelated jobs in order to earn enough to pay for the bare necessities in the sixteenth century (Thirsk, 1978). Therefore, unemployment meant poverty during difficult economic periods. Moreover, issues with harvests in 1549-1551

further increased the scarcity of food and the government considered projects as a solution to reduce the debt of war and to relieve the poor through employment at the same time.

Inflation and prices were rising in the early years of Elizabeth I's reign (Thirsk, 1978), while the population was growing (Yamamoto, 2010). Unemployment increased even further, while sales of imported goods were flourishing (Zell, 2001). Furthermore, there were significant rises in the price of certain imported items such as salt, which pushed the government to search for local manufacturing options (Thirsk, 1978, Zell, 2001). The Queen anticipated projectors helping to solve this difficult situation (Thirsk, 1978). Interest in expanding domestic manufacturing became government policy and the projectors' involvement in economic activity played an important role in moving towards this desirable change (Zell, 2001). At the same time, the Queen welcomed French and Dutch artisans, seeking refugee status in England due to religious oppression in the 1560s, who brought new skills to the desired projects (Thirsk, 1978).

Foreign economic and social policies nurtured new models of economic advancement utilizing imported raw materials and domestic production (Thirsk, 1978). Internal production had difficulty competing with cheaper foreign imports, therefore policies restricting or banning certain foreign goods and promoting home production emerged, although foreign items still continued to reach England's shores. The undesirable economic, social and political situation established the basis for a rise in projects. Favourable conditions for carrying out projects were very attractive to projectors, since chartered patents for new projects meant monopolies and privileges.

3.2.2 Patents and monopolies

The granting of a Royal Charter dates back at least to the beginning of the fifteenth century, when the companies chartered were mostly in trade and their objectives were not exclusively financial, but were also concerned with the development of diplomatic relationships between countries (Omar, 2004). A charter defined and assigned privileges, the location of the activity and the privileged items. The first patent for a monopoly was given to Henry Smyth for glass making in 1552 (Thirsk, 1978). The peak for chartered companies was reached in the second half of the sixteenth century (Omar, 2004). As Ratcliff (2012, pp345-346) observed, initially patents for inventions were created to boost 'English manufacture and trade through the introduction of foreign products and methods'. She suggests that the emergence of patents could be intentionally aimed at adding value to

the patentee, the economy and the Crown, since patents appeared to be the primary source of revenue, mostly through taxation, during the reigns from Elizabeth I to George III. One well-known example of a monopoly business with political ties was the East India Company, established in 1599, whose expansion overseas was supported by the state (Omar, 2004).

According to Zell (2001), patents and monopolies for projects were highly desired by inventors and entrepreneurs at the beginning of Elizabeth I's reign (Zell, 2001). Thirsk (1978) suggests that Sir Thomas Smith and William Cecil were key leaders in the early promotion of projects and understood a projector's desire for monopoly and privileges in exchange for taking responsibility for carrying out complex projects. Thirsk (1978, p53) points out that patents became the way to encourage projects and 'were therefore granted to projectors; these gave them the sole rights of manufacture of an article, according to the particular method of which they were the true pioneers and inventors'. Amongst the promotional bodies of projects was the Society of New Art (Thirsk, 1978). However, patent privileges attracted abuse of the system and different groups of people became projectors by the 1590s (Thirsk, 1978, p57):

some of the patentees were no longer inventors and skilled craftsmen, but courtiers, merchants, and speculator who planned to hire the services of such craftsmen, while they themselves shouldered the main financial risk.

A middleman position emerged due to the majority of skilled craftsmen having no business management skills and limited financial resources (Thirsk, 1978). Thirsk (1978) pictured the middleman as a more wealthy man, capable of managing the business and being able to support craftsmen financially. While craftsmen as patentees had issues with keeping the secrets of their patents and holding imitators accountable in the 1560s and 1570s, rich patentees prominent in the 1580s had sufficient resources to keep enterprises competitive through charges for imitators and the advantage of assigned privileges. A number of patents raised society's disapproval and Queen Elizabeth I decided to end these sixteenth-century disputes. The most controversial patents, such as for salt, starch and pots were cancelled in 1601 due to a lack of intentional benefits and harm for the poor (Ratcliff, 2012, Thirsk, 1978).

3.2.3 Projects and projectors

Edward VI's reign was the peak for the Commonwealthmen activities, amongst which was employment of the poor as a solution to overcoming poverty (Thirsk, 1978). The earliest employment of paupers was described in William Marshall's compiler in 1535. Thirsk (1978, p18) advocated that, 'projectors became the strongest allies of the Commonwealthmen in their endeavours to help the poor. The motives of every projector mixed public and private interest in different proportions'. The Commonwealthmen and projectors were interested in projects, promoting both economic growth and response to social needs. Intensive propaganda took place through pamphlets, politicians and Privy Councillors making a link between Commonwealthmen and the emerging projects. 'The Discourse of the Common Weal of this Realm of England', written in 1549, was 'one of the most informative and early drafts of a programme for projects' (Thirsk, 1978, p13).

The terms 'project' and 'projector' were frequently used in the sixteenth century when an improvement of the economy was attempted through combining money, power and knowledge (Yamamoto, 2012) in order 'to increase employment, discourage imports and raise revenue at the same time' (Zell, 2001, p653). As a result, demand for projectors increased. Projects were promoted as contributing to the 'public good' or 'commonweal' mostly through employing the poor and benefiting public finance in the mid-sixteenth century (Yamamoto, 2010). However, in reality, this economic innovation positioning was in line with religion and therefore society norms and was more a combination of public and private gains. The majority of these new enterprises were not built from scratch, as facilities and skilled people already existed, but even small improvements in the organisation of work production had an impact on the demand for projects (Thirsk, 1978).

A favourable environment for projectors emerged and attracted many public-serving projects from realistic and feasible schemes to controversial fantasies (Keller, 1966). Furthermore, a number of political decisions relating to labour were taken. For example, the English poor assistance legislation in 1570, which aimed to provide work for the poor, attracted many patentees and projectors to contribute to common wealth (Zell, 2001). The 1576 legislation allowed the employment of paupers in their own homes or workhouses and even poor prisoners were employed (Thirsk, 1978).

The situation for projectors was not universally positive. Patents and grand-scale projects were expensive and it was important not only to seek royal protection, but also to secure the investment (Keller, 1966). Projects created a conflict of interest by 1580, since local

authorities were interested in poor relief; the Crown's interest lay in relieving debts and contracting international trading agreements; and private speculators wanted profits from successful projects (Thirsk, 1978). Lord Brughley gathered evidence against monopoly-based projects, fuelling furious discussions on monopolies in 1597-8, 1601 and 1624, but despite this, patents continued to be granted.

Overall, despite a number of debates, the work of projectors had a positive economic impact through increasing employment across the country. Rural communities were able to produce only staple necessities before projects emerged in the sixteenth century, while with the help of projects, they started to make a surplus, accumulating actual cash (Thirsk, 1978). The popularity of projectors remained high during the seventeenth century, although a number of trust issues had influence on the term 'projector' and it could not be maintained as a positive label throughout the remainder of the century. The next section explores the activities of projectors in the seventeenth century.

3.3 Projectors in the seventeenth century

3.3.1 A new call for projectors

The early seventeenth century was marked by poverty, recession and inflation. Farmers were moving to cities in search of alternative income after land enclosure, which took place in the second half of the sixteenth century (Gibbons, 1969). The population was constantly growing at this time. Baer (2012) suggests that the population in the City of London, its Liberties and the suburbs grew from 70,000 in 1550 to 400,000 in 1650. The population of England was around 2.25 million in 1520 and rose to 5.5 million in 1688 with the most rapid population growth taking place between 1520 and 1640 (Thirsk, 1978). Overall, the picture of London in the seventeenth century was far from pretty (Gribbin, 2005, p3):

It was filthy, smelly, and unhygienic; bubonic plague spread by the fleas that lived on rats often broke out in summer, when those that could afford to retreated to the country side. The poor had no such option.

Diseases spread at vast speed due to overcrowding and unsanitary conditions and while medicine was devoted to those who paid for it, the poor were doomed to no medical help (Gibbons, 1969). A quarter of the population died within a year of the emergence of the plague in 1665 (Gribbin, 2005). The Poor Law initiated by Elizabeth I in 1603 entitled parishes to take responsibility for the material wellness of their poor, but the law was

ignored due to the need to increase taxes and the lack of regulations (Gibbons, 1969). The Great Fire in September 1666 burned 85 per cent of London's city buildings leaving people homeless and unable to earn a living (Gribbin, 2005). In the middle of the seventeenth and early eighteenth centuries, unemployment was high and an increase in workhouses led the poor to work in horrible conditions associated with slave labour where professional medical health was not readily available (Gibbons, 1969). The situation in the country was far from positive when a European-wide trade crisis in 1621 hit English trade (Zell, 2001). Furthermore, poor harvests increased the price of food.

There were turbulent times in politics throughout seventeenth-century England, many of which were caused by tensions in religious beliefs and which led to the Civil Wars commencing in 1642. This period was marked by the beheading of King Charles I in 1649 due to high treason (Stoyle, 2011).

In relation to commercial and military power, the Anglo-Dutch Wars took place in the late seventeenth century and money was essential to strengthen the military and secure, as well as extend, trade interests (Armitage, 1994). The Nine Years War (1688-1697) drove an increase in demand for new ideas and institutions and, while ministers and Parliament increased finances through raising land tax, William III offered an opportunity to projectors to generate more capital (Armitage, 1994, Loft, 2013). As Harding (1999) summed up, the second Anglo-Dutch War (1664-1667), the Anglo-Spanish War (1656-1658) and the Nine Years War (1688-1697) all resulted in massive losses for every country involved, stretching the budgets of these countries, including England's. The burden of war was falling on society through taxes, which were challenging to sustain.

As Armitage (1994) explained, there were high levels of informality in major state institutions at the end of the seventeenth century, and the decisions on policies were more likely to be initiated not by government officials but by interested parties and proactive Members of Parliament (MPs). As Yamamoto (2010) observed, projects appeared to be a way of balancing trade, increasing revenue and helping the poor at the end of the seventeenth century. Parliament increasingly gained more control over revenue from 24 per cent during Charles I's reign to 90 per cent by 1670s (Yamamoto, 2009).

The Civil War led the government to seriously consider the development of a consumer industry at home. Economic depression starting in 1646 reached its peak in 1651, further increasing poverty and unemployment (Thirsk, 1978). It was necessary to look for solutions and projectors were welcomed for this reason. In contrast, the consumer market was developing strongly in the seventeenth century. On the positive side of social and economic life, luxury items and certain masters, such as goldsmiths, jewellers or clock

makers were available in towns only, while poorer quality goods were made in villages. Thirsk (1978) suggests that by the end of the seventeenth century, a growing consumer society had a great choice of items and foods in terms of range, quality and price, and while a working family was able to afford only essentials in the sixteenth century, the working class became part of a mass consumer society in the seventeenth century. The growth of a consumer society could be explained by stabilised or reduced prices in the seventeenth century, as well as the increase in the value of wages throughout the century.

Changes were taking place in financial markets and financial innovations attracted projectors. There was strong reluctance to grant patents and especially monopolies after the Restoration (Yamamoto, 2009). Joint stock companies date back to at least the sixteenth century and gained popularity in around the 1680s (Omar, 2004). The peak of the financial revolution was reached in the 1690s, with various commercial and industrial projects appearing as independent joint-stock companies (Yamamoto, 2011). Major developments of banking, public finance and credit started in around the 1660s (Armitage, 1994). The country could not cope purely with the regular revenue source and there was a desperate need for money; without reliable credit sources, this led to borrowing from individuals, merchant syndicates and from abroad (Thomas, 1979). The most significant event within the financial sector was the establishment of the Bank of England in 1694 (Armitage, 1994).

Intellectuals were informing science in the seventeenth century. One of the most important intellectual centres, The Royal Society, established in Gresham College in London and chartered in 1663, was well known for use of scientific methods or experimentation to investigate the world, and even though it received no financial support from Charles II, the charter brought prestige, freedom and some tax exemptions (Gribbin, 2005). Among the well-known and high-achieving members of The Royal Society were Robert Hook, William Harvey, Sir Isaac Newton, Edmond Halley, and William Petty, the projector and founder of economic statistics.

Britain's social, economic and political life was very diverse in the seventeenth century. A number of undesirable events took place, which had a significant negative impact on Britain. The state attempted to solve these issues with the help of projectors. Large-scale financial projects, such as the Bank of England, emerged during this time. The development of an intellectual society had an impact on forthcoming achievements in a number of scientific fields. Patents and monopolies, in a similar way as in the sixteenth century, played an important role in projectors' activities.

3.3.2 A new circle of patents and monopolies

Disputes with regard to monopolies continued from the sixteenth century into the seventeenth century as monopoly granting was still ongoing (Thirsk, 1978). This was a time when the name of projector gained a negative connotation (Yamamoto, 2010). The highest level of patent abuse was reached during James I's reign, but Parliament was incapable of dealing with it (Thirsk, 1978). During James I's reign, monopolies flourished until the King, challenged by Parliament, suspended the granting of monopolies in 1603, with the exception of corporations and companies which paid an annual fee to James I for the privilege (Thirsk, 1978, Ratcliff, 2012).

Yet conditions for carrying out projects remained extremely attractive due to the royal privileges of industry monopoly and fines for competition (Ratcliff, 2012). The 1624 Statute of Monopoly defined the patent system up to the nineteenth century. It granted monopoly rights to real inventors for fourteen years, while corporations did not have such restrictions and so it was in the interest of monopolists to form corporations (Thirsk, 1978). The patenting procedure was lengthy and expensive and payments and gratuities did not cover investigations into inventions in case of disputes (Ratcliff, 2012).

There were unfavourable financial conditions during Charles I's reign and a new circle of patent granting and controversial monopolies commenced once again, causing friction between Crown and Parliament in 1634 (Yamamoto, 2010, Ratcliff, 2012). As Ratcliff (2012, p345) explained, 'patents were granted not only for technological inventions, but also for all kinds of Crown privileges like titles, estates, and monopolies on the production and sale of commodities'.

Industries capable of competing internally and abroad in production and trading emerged by the end of the seventeenth century (Thirsk, 1978). The economy became half agricultural and half industrial with labour as the principal resource. Most schemes promised compulsory employment for the poor who frequently were diseased due to poverty and had no access to medical care (Gibbons, 1969). The decline of economic innovations as a monetary option subsequently limited incentives for ventures from the government in the 1660s (Yamamoto, 2010). Amongst the projectors were noblemen, professionals and rising middle-class gentlemen. The wealthier class were seeking Royal Charters in order to obtain lower rents and cheap labour in a reputable way; the less financially capable projectors were looking for opportunities to carry out projects in order to increase their income. According to Thirsk (1978), the terms 'project' and 'projector'

became common words in the seventeenth century and shifted from the intangible reach for common wealth in the sixteenth century to more material concerns. Thirsk (1978, p1) highlighted that ‘everyone with a scheme, whether to make money, to employ the poor, or to explore the far corners of the earth has a ‘project’’.

3.3.3 The pejorative label

The name of ‘projector’ was degraded over time for multiple reasons. According to Yamamoto (2009, p337), ‘...the negative stereotype of the ‘projector’ was largely absent until the 1600s’ and it emerged by the end of Charles I’s reign in relation to abuse of political authority under the cover of public benefit. The pejorative meaning attached to the label of projector in the first half of the seventeenth century was linked to abuse of monopolies and patents and became more generic afterwards (Yamamoto, 2009). Monopolistic patents became rare to obtain after Charles’ reign, but the stereotype of projector remained in circulation. Many pamphlets were written on ‘Stuart projector’ (named in line with the epoch), whose image was associated with fraud, greed, distrust, monopoly and evading fines (Yamamoto, 2012). Quick monetary riches, high financial losses and an inability to complete the ‘chimerical schemes’, since many projects were pure fantasies rather than potential real achievements, all contributed to a pejorative meaning of the name of projector (Keller, 1966).

Projectors were from every social stratum except the poorest (Yamamoto, 2009). Once the projectors became negatively stereotyped, the need to disassociate emerged. The negative label attached to the terms of projector and monopolist reached its peak in published pamphlets 1640, when projectors were distrusted and accused of profiteering (Yamamoto, 2012); neutral connotation returned in the 1690s (Yamamoto, 2009). This peak of published pamphlets on projectors can be explained by the Long Parliament’s (1640-1660) decision to loosen press control (Heller, 1999). The name of ‘projector’ evolved into an undesirable label and replacement titles became popular in order to gain funding or trust (Keller, 1966).

Yamamoto (2012) explored the Samuel Hartlib Circle, a group of like-minded people, who wished to disassociate themselves with these terms and who were active between the 1640s and 1650s. They were keen to accomplish various reforms, including church, state, law and economy, amongst their other activities on alchemy, medicine and linguistics. The Hartlib Circle ignored the name projector and they intentionally took a different approach in order

to avoid any comparison. Among their tactics were the sharing of knowledge through pamphlets so that readers could implement ideas; the pamphlets also highlighted gaps in knowledge; placed caveats; promoted open communication, which was supposed to eliminate secrecy and profiteering from their activities; and made money at the same time. Some of the Hartlib Circle, such as Plattes, were keen to invest their own money and carefully outlined the caveats in their writings. Despite the Hartlib Circle's efforts to disassociate themselves from projectors, they were still satirized in both literature and plays (Yamamoto, 2009). The disassociation with the name of 'projector' was very direct in some cases. Keller (1966) referred to a pamphlet titled 'The Anti-Project'. However, since there was a thin line between rewards for disclosing useful knowledge and making a fortune from providing a public service, it was difficult to be disassociated from the early Stuart projector (Yamamoto, 2012). 'After all part of the essential projector was to cash in on some development or idea to which the general public had already warmed' (Thomas, 1979, p323).

Fantasies of the seventeenth century opened the gates to real discoveries in the eighteenth and nineteenth centuries and provided direction for potentially feasible discoveries/innovations which nourished an innovative state of mind (Keller, 1966).

3.4 Projectors in the eighteenth century

The eighteenth century had become an age of measures, of longitude and the shape of the earth, of the weight of trade and the reach of empire, of meridians and meters (Stewart, 2008, p372).

3.4.1 Progress, consumerism and science ten days ahead

The eighteenth century was remarkable in the economic, social and political life of Britain with the union between England and Scotland ratified in 1707 (Armitage, 1994). Moreover, the Gregorian calendar was introduced in 1752, which 'pushed' Britain's life 10 days ahead of the previously used Julian calendar (Gribbin, 2005). Unfortunately, the poor remained in a difficult position. It was quite common for the poor in the eighteenth and nineteenth centuries to own only one set of clothes and remain naked while washing them (Hunt, 1993). Clothes were a form of currency and, at times, people gave them up for money in order to buy food or pay the rent. Children were kept naked as long as possible, mostly to the age they started working, which was around six years old.

In contrast, consumerist culture was booming (Tosh, 2002). Leisure and business travel increased in the eighteenth century with the improvement of roads as well as the increasing number of canals and coach routes (Hunt, 1993). The mass market emerged during the Industrial Revolution in the eighteenth century, but evidence suggests that customer demand was present prior to the Industrial Revolution in the seventeenth century starting with the middle class and slowly pervading to the lower class (Thirsk, 1978). Manufacturing centres became more geographically concentrated in the second half of the eighteenth century.

In the middle of the eighteenth century England became a country of high expectations with strong public finance and revenue collection institutions (Armitage, 1994). Important activities were taking place in intellectual circles with 'science' and 'knowledge' having a synonymous meaning in the early eighteenth century (Stewart, 2008). The importance of measurements and calculations spread from science to projects and therefore became part of a projector's work. Stewart (2008) explained that tensions between religion and natural philosophy were associated with more atheistic views related to mechanistic natural philosophers. Slowly, natural theology was taking place amongst latitudinarian thinkers (Twombly, 2005, Stewart, 2008).

The definitions lists were introduced by John Harris's 'Lexicon Technicum' (1723) and Samuel Johnson's 'Dictionary' (Stewart, 2008). The Royal Society's and the projectors' activities clashed at the beginning of the eighteenth century with Miller (1999) suggesting that the Royal Society was seen as greedy and dishonest amongst the projectors, who believed that it should help them in seeking patents. Stewart (2008) highlighted that the legal process of patent applications was non-existent until the eighteenth century. Even mechanical diagrams, which emerged in patent applications in the 1740s, were not in line with the patentee's verbal explanations of specifications. James Watt, an enthusiast of specifications, proclaimed the importance of specification within patent applications in his publication 'Thoughts upon Patents' (Miller, 1999).

As well as the Royal Society, there was another influential, although informal, group of individuals with a strong interest in science and technology, based in Birmingham, who called themselves the Lunar Group. They operated between 1760 and 1790 with Lunatics involved in the battles related to patents and patent law (Miller, 1999). Interestingly, the majority of the members of the group (apart from three) became members of the Royal Society, amongst which were Josiah Wedgwood, James Watt and Erasmus Darwin to mention a few.

3.4.2 Projectors and the South Sea Bubble

A project that was well known as a failure in the eighteenth century was referred to as the South Sea Bubble. The project started in 1711 and proposed to take over the government debt and ‘convert it into shares, receiving from the government an annual interest payment and a monopoly of trade with Spanish colonies in South America’ (Omar, 2004, p95). At this point the joint stock companies had been in existence for at least a century, when in around 1690 fraud associated with the stock market emerged, reaching a peak in the 1720s (Omar, 2004). Companies in a variety of business spheres thoughtfully positioned their ventures in order to sell their stocks to prospective stockholders. The share price of company stocks was part of this speculation and was well above real values. Patterson and Reiffen (1990) claimed that bribery when granting a corporate charter was a ‘custom’ in the early eighteenth century. It was more about meeting private rather than public interest and therefore the members of government profited from the South Sea Company’s bribes and gifts. Stock distributors were selling the future based upon projectors’ calculations and this led to the disastrous end of the project (Stewart, 2008). Newton and Defoe were amongst the investors who lost money in the South Sea Company.

The South Sea Bubble was the reason why Parliament made changes to the way in which a company could be established and ‘restricted the availability of a low-cost incorporation form until the passing of the Joint Stock Companies Act 1844’ (Omar, 2004, p93). Due to the need for parliamentary approval, the establishment of a business company became expensive and only high-value projects, such as railways, roads and canals, were worthwhile (Omar, 2004). The Bubble Act, which followed the company’s collapse in 1720, constrained joint stock companies from becoming a part of the Industrial Revolution. New ventures, such as ‘mutual companies, deed of settlement companies and partnerships’ emerged (Omar, 2004, p96).

The main change in the eighteenth century was the role of science within the projectors’ work, which became more calculated and measured. The importance of science is evidential within ‘An Essay Towards the Improvement of Physick’ by John Beller presented in subsection 3.6.3

Intellectual circles, such as the Royal Society and the Lunar Group, became influential and interaction between these circles and projectors was increasing despite minor arguments. Unfortunately, not all calculations were correct and the South Sea Bubble collapse was the most vivid example of a failure within this century; it was so impactful that it changed the

nature of the projects. This and other examples of failure had a negative impact upon the label 'projector'. The projector label within satire is explored in the next section.

3.5 Projectors in satire across all centuries

Writers, mainly satirists, cherished a projector's character through both their personality traits and their projects. As previously mentioned, the number of these writings significantly increased after the end of press control in the 1640s. The main criticism within these satires was towards the royal approval system of projects, monopolies, patents and privileges, which allowed the rich to increase their wellbeing and exposed the poor to further oppression (Ratcliff, 2012). A number of satires about projectors are listed in Table 7.

Author	Satire title	Year
Ben Jonson	'The Devil is an Ass'	1616 (first performed) 1631 (published)
Philip Messinger	'The Emperour of the East'	1632
Richard Brome	'The Court Beggar'	1632
James Shirley	'The Triumph of Peahce'	1633
Thomas Burgis	'Discovery of a Projector'	1641
John Taylor	'Water Poet'	1641
John Taylor	'The complaint of M. Tenter-hooke the proiector'	1641
John Taylor	'Sir Thomas Dodger the patentee'	1641
Thomas Heywood	'Machaevel's Ghost'	1641
Thomas Heywood	'Hogs Character of a Projector'	1642
Margaret Cavendish	'Wits Cabal'	1662
John Wilson	'The Projector'	1665
Samuel Butler	'Characters'	1667
Thomas Wright	'The Female Virtuosoos'	1693
Daniel Defoe	'An Essay Upon Projects' (not satire, but projectors were satirized)	1697
Jonathan Swift	'Tale of Tub'	1704
Jonathan Swift	'Gulliver's Travels'	1726

Table 7. Satires on projectors

In Ben Johnson's play 'The Devil is an ass', the wily projector Meercraft pulls out a bagful of projects, each one more absurd than the other, and dazzles his poor victim with a jumble of technical terms (Keller, 1966, p468).

Ratcliff (2012) explored the role of projectors within seventeenth-century English satire, including plays, poems, pamphlets and masques. Playwrights and inventors had much in common as they both protected their work through patents, they were 'authors' of their inventions and there was a sense of self-awareness in satires regarding technological inventors. Ratcliff (2012) observed that invention and projecting had direct links in satire and that the inventions of projectors in satire were frequently presented as intellectual (the idea itself), political (reach for monopoly) and material (the goods produced) at the same time.

The context of satires varied throughout the seventeenth century (Ratcliff, 2012): patents and monopolies were satirized in the first part of the century, while projectors were more satirized in the wider economic context, such as in investment scams, in the second half of the century. Satires in the mid-century were more about politics of ‘progress’ rather than resistance to technological development. References to projectors became positive, such as the ‘good projectors’, in the late eighteenth century due to the influence of the Industrial Revolution.

The literature began to mirror reality as Ratcliff (2012, p340) explained ‘...recent studies have established the interconnected nature of literary, rhetorical, and scientific forms, showing that “literature” and “science” were then not easily separable spheres’. However, Yamamoto (2009, p24) argues that historians catch the stereotyped projector’s phrase and used it as real (in actual meaning), therefore in terms of literary exploration on projectors, it is important

to establish a better understanding of the relationship between projecting activities and their representations than the equation of representations and reality. Other literary studies have avoided hinting unqualified links between literary types and reality. But their discussions have tended to focus, often too closely, on the most mundane and conventional aspects of the projector stereotype: their greed, fantasy, duplicity, and excessive ambition.

A number of projectors or projects of those times can be recognised in writings. Defoe satirized the Mine Adventures as ‘Sort of enigmas’ and the scheme projector Humphrey Mackworth was satirized by the anonymous writer as ‘an old successful-projecting-Chevalier’ ‘destin’s to enjoy the present Benefit’ (Yamamoto, 2011, p831). The literature drew a thin line between reality and art. Natural philosophers with reference to the Royal Society and in particular to Isaac Newton, as well as projectors Robert Walpole and William Wood, were satirized in Swift’s *Gulliver’s Travels* (1726) (Lynall, 2005). Projectors were not solely male, since the projectress Lady Taile-Bush was a character mentioned in Ben Jonson’s ‘The Devil is an Ass’ (Jonson, 1756).

Various fields where projectors operated were evident within the literature. James Shirley’s ‘The Triumph of Peace’ explored the diversity of feasible and unfeasible proposals by projectors: a hollow bit to prevent horse exhaustion, a way to thresh corn, a stove to produce continuous heat, a diving suit and a rocks melting ship (Ratcliff, 2012). Defoe introduced projectors of various spheres in his ‘Essay on Projects’, including inventors of diving-bells, turnpikes, windmill-makers, stock-jobbers, saltpetre-men and bank-promoters (Armitage, 1994, p6). A number of publications, even though most of them were satires, reflected societal opinion about projectors at this time and strongly contributed to understanding the projector culture. The next section presents a variety of

projects proposed/carried out by projectors and reveals the diversity of projects. The further diversity of fields where projectors were active is presented in the following three chapters.

3.6 Narratives and fields of operation of projector activities in the United Kingdom

The range of projectors' endeavours could be limited only by human imagination. Previous accounts of projectors are explored further in the following three chapters, which reveal the wide spectrum of fields in which they were active: these include agriculture, chemistry, drainage, canal infrastructure, water supply, weaponry, lottery schemes, banking, insurance and trade. The following fields were identified in an initial mapping exercise of projectors' activities: finance, the railway, health, slavery, weighing the Fame, lottery, trade, navigation, textiles, electricity, sanitation, law, drinking water supply, fishery, oil manufacturing, communications, architecture/building, making peers, mining, drainage, public dispensaries, insurance, banking, education, brewery and town design (the summary of these results is presented in Chapter 2). The earliest records date back to the sixteenth century and include illustrations of projectors and their projects. Each summary account of the projector has been cited from the source within the title unless stated differently.

3.6.1 Illustrations of projectors activities in the sixteenth century

Robert Payne (Thirsk, 1978)

Thirsk (1978) presented an account of the projector Robert Payne who was involved in a variety of projects between 1580 and 1590, including the drainage of moorland, making ponds, settling English farmers in Ireland, spinning jersey wool for stockings and woad growing. This account is a great example of a range of unrelated projects carried out by a single projector.

Sir Humfrey Gylberte (Tomlins, 2001) – Projector of colonisation

Projector Sir Humfrey Gylberte's project on colonisation was approved by Elizabeth I (Tomlins, 2001, Beneke and Grenda, 2011); his experience was described in Richard Hakluyt's 'Notes on Colonisation', where the following details were provided: the choice of location for the colony, the interaction with locals, technical and commercial sides of colonisation and the process (Tomlins, 2001). This particular project had a considerable

impact upon subsequent colonisation charters and the newly formed country. The charters of the early colonisers Gylberte and Sir Walter Raleigh, who colonised ‘Virginia’ in 1584, became a model for English colonisation, despite the fact that a permanent settlement was not part of these charters (Tomlins, 2001). Colonisation determined local language which became English with maps of North America in the middle of the eighteenth century greatly mirroring European ‘place names, settlements, roads and local administrative boundaries’ (Tomlins, 2001, p362).

3.6.2 Illustration of projectors activities in the seventeenth century

John Stratford, William Cope, Sir Richard Weston (Thirsk, 1978) – Projectors of agriculture

Thirsk (1978) presented a projector John Stratford, who was involved in projects on growing tobacco and flax. Another projector was William Cope, whose projects were growing woad and corn and who developed woad houses and woad mills in the first half of the seventeenth century; the projector Sir Richard Weston was also involved in agricultural projects in the same period as well as in the ‘improvement of rivers to promote inland trade’ (Thirsk, 1978, p10).

Sir Humfrey Mackworth (Yamamoto, 2011) – Industrial and financial projector

Yamamoto (2011) explored Sir Humfrey Mackworth’s account, which describes an industrial and financial projector and a Tory MP. One of his projects was a Welsh mining scheme: ‘The Governor and the Company of the Mine Adventures of England’, which ended in financial scandal in 1710. Mackworth claimed to be carrying out the project because of his Christian faith and that his public service was for the improvement of the local economy through employment of the poor, rather than with regard to profits. As part of the scheme, Mackworth developed a lottery and bank, and promoted a charity. The company received charitable contributions through the company’s lottery. The labour in the company was free and thus acted as an economic incentive. As Yamamoto (2011, p830) highlighted, ‘the Mine Adventure helped diffuse new technologies and develop infrastructures for future economic development in Wales, which despite causing financial chaos, did contribute to the economy’. However, as a projector he was accused of committing fraud and violating the Company’s charter (Yamamoto, 2011). The public and private benefits within Mackworth’s project are presented in Chapter 6.

William Paterson (Armitage, 1994) – Projector of a number of projects, including the Bank of England

Armitage (1994) explored accounts of the projector William Paterson who was a colonial and continental trader, a reformer of public credit, a government agent, propagandist for the Anglo-Scottish Union, and promoter of free trade and the Hampstead Water Company, but was best known as a founding father of the Bank of England. Paterson's idea of a public credit bank was realized through the creation of the institution of the Bank of England in 1694. His career as a projector was enhanced through his handling of the country's war debt. However, the majority of his projects failed and despite being instrumental in the establishment of the Bank of England, due to a conflict of interest, Paterson was a director of this institution only for nine months. As Armitage (1994, p6) precisely described 'Paterson was doomed to live by his wits and die by others' disapproval'. The public and private benefits of the Bank of England project are presented in Chapter 6.

William Petty (Gibbons, 1969, Hunt, 1993) – Projector in medicine and travel

Gibbons (1969) and Hunt (1993) explored the account of a projector, medical practitioner and member of the Royal Society Sir William Petty. Gibbons (1969) revealed Petty as a medical projector who was in charge of Anne Greene's dissection, who despite being hanged for a considerable time and placed in a coffin, survived. He published a pamphlet 'Anatomy Lecture' in which he expressed his thoughts on the economic principles of a growing population and medical care in order to reduce the death rate. Petty compared the numbers of births and deaths in a given year. One of the dubious benefits of saving the poor was that they would become slaves for the Commonwealth at the lowest price. Petty proposed treatment centres with full-time physicians dedicated to studying and observing patients' diseases (rich and poor), where the poor could be treated free of charge, as this had an added benefit to medicine through gathering knowledge.

Hunt (1993) explored Petty as a travel industry projector. He published travel books and by doing so brought trips closer to the English youth, who were not able, or could not afford, to travel. The target audience were youths from respectable families coming to London and hanging around the Royal Exchange, where their intellectual and aspirational role models were gathering to share and demonstrate knowledge. Petty's experience came from trips to France, the Netherlands and Ireland. The furthest trip for most seventeenth century literate people was their closest county town or London.

Literacy of the middle class increased in the seventeenth century (Hunt, 1993). The author suggested that although the majority of books people read were religious, travel books could also become part of their reading choices. In the seventeenth century, typical travellers belonged to the gentry or aristocracy and were looking for connections abroad, while eighteenth century travellers were respectable private citizens travelling with an interest in business. Hunt (1993) noticed that travel books, particularly those associated with trade, commerce and the middle classes, were the most interesting eighteenth-century reads. Hunt (1993) suggested that Adam Smith was a very keen reader and collector of seventeenth- and eighteenth-century travel writings, which he cited in his 'Wealth of Nations' (1776).

John Houton (Hunt, 1993) – Projector in travel

John Houghton, a projector of agricultural schemes as well as apothecary and a merchant of tea and other goods, used travel narratives in his teaching of travelling businessmen in his 'Collection of Improvement of Husbandry and Trade', where he explained how to combine individual and societal benefits of travel (Hunt, 1993).

Peter and Hugh Chamberlen (Gibbons, 1969) – Medical projectors

Gibbons (1969) explored accounts of the projectors and physicians Peter and Hugh Chamberlen, a father and son, who worked in a very profitable practice in London established by one of their ancestors. Peter Chamberlen was involved in other schemes from 'the construction of a carriage propelled by wind to the avocation of hydrotherapy and public baths as a therapeutic measure' (Gibbons, 1969, p251). One of his projects was 'The Poor Man's Advocate' based on the Poor Law. Hugh Chamberlen published a pamphlet: 'A Proposal for the Better Securing of Health' in 1689 with mortality rates and details on premature deaths amongst the poor in relation to the lack of medication. Projectors proposed revising the structure of medical practice in London, so that medical treatment would be accessible for both the rich and poor. Treatment for the poor was proposed free of charge, so that they would be able to visit a practitioner; parliamentary members and their families could also be treated at no cost.

John Cary (Gibbons, 1969) – Medical 'projector'

Gibbon (1969) explored John Cary's proposal on medical care as it was an essential part of the workhouse programmes. This Bristol merchant wrote an 'Essay on the State of England' in 1695, expressing a need for employment in domestic manufacturing rather than relying upon imported goods. Cary cared about poor relief in the city and was an important figure in establishing the Bristol Corporation of the Poor. One of his

achievements was cataloguing the demographics of the poor in Bristol. Cary promoted the idea of physician visits at home and the right to absence from work until an employee was capable of returning. Medical care of employees became part of the Bristol Workhouse programme in 1697. Physician Dr Thomas Dover offered his services free of charge to the New Workhouse, which led to the transformation of one of the workhouses into a full-time hospital for the poor. The hospital was in use at least until the end of the eighteenth century. Yamamoto (2010) argued that Cary consciously sought to be disassociated from the projectors.

Daniel Defoe (Gibbons, 1969) – Projector of various projects

Gibbons (1969) explored Daniel Defoe as a projector, liveryman and entrepreneur who ended up in debt and then bankrupt. After bankruptcy, Defoe wrote an ‘An Essay upon Projects’ in 1697. Defoe spent a year in prison for publishing his satire of the Anglican Church. As a projector he wrote on political and economic matters in ‘The Review of the British Nation’. Medical care for the poor was described in his ‘An Essay upon Projects’, through a self-supporting insurance plan proposed to allow access to medical care for subscribers only. Amongst the benefits outlined in the insurance was financial support during disability, visits to physicians, and financial compensation for disease or injury resulting in unemployment. The project had faults and lacked common sense; how was one physician supposed to take care of a population of 100,000 people. However, the proposal offered a new approach to the problem. The country was going through a recession at the time and the project was not feasible. The scheme did not involve changes in medical structure, did not require a large increase in the number of physicians and did not influence taxation. ‘An Essay upon Projects’ is explored in Chapter 5.

Thomas Neale (Thomas, 1979) – Projector of diverse projects

Thomas (1979) explored the projector Thomas Neale’s life in his PhD thesis. Neale was involved in multiple projects, 39 in total, amongst which were: property development, ‘lotteries, treasure recovery, new industrial processes and financial innovations’ (Thomas, 1979, 2p). The public-private interest in Neale’s projects is explored in Chapter 6.

Sir Arthur Ingram and Lionel Cranfield (Roberts, 2012) – Projector of diverse projects

Roberts (2012) explored the projectors Sir Arthur Ingram and Lionel Cranfield in her PhD thesis. Both projectors were involved in a number of schemes together: trading spices and silks, tobacco farming, a monopoly on domestic bran starch, Crown land purchasing, selling and leasing accommodation, and wine and taverns licence granting. Ingram was also involved in alum farming. He was a well-connected individual and amongst his

connections was the projectors' supporter Cecil. Ingram excelled in the role of a middleman in the endeavours of his and Cranfield's projects. The public-private interest within their projects is explored in Chapter 6.

3.6.3 Illustration of projectors activities in the eighteenth century

John Beller (Gibbons, 1969) – Medical projector

Gibbons (1969) explored John Beller who was studying poverty. His proposal 'An Essay Towards the Improvement of Physick', published in 1714, was presented in great detail. The projects were about the death rate from curable diseases and the potential of saving those lives by providing access to a physician and medication. Beller proposed twelve individual projects amongst which were: the improvement of medical knowledge through observation and experimentation by hospitals specialising in particular diseases; a dedicated hospital for medical experimentation only (such as drugs administration); a hospital for the blind to study eye disease; a training centre for the blind in a field they might excel (such as wine tasting); a hospital for incurables, where a search for suitable drugs would be carried out with the permission of the patient; a public laboratory analysing vegetables and minerals, as well as, examining the texture and quality of bodily fluids; an educational system where medical students learnt through treating the sick poor; and doctor and surgeon visits to the poor once a week. The remaining five projects were related to administration and medical progress. Beller also proposed hospitals for the poor only.

3.7 Summary

The literature review on projectors revealed that projectors were active throughout recent centuries with their activities so diverse that only human imagination limited them. Projectors, as described within this thesis, were individuals proposing and/or carrying out projects between the sixteenth and twentieth centuries. The role of projectors within the three featured centuries was similar although the nature of the projects shifted over time. Seventeenth-century demand for projectors was driven by similar reasons to the sixteenth century, which were national debt, unemployment and the threat of imports, whilst urbanization was particularly pertinent to the seventeenth century.

Projectors were drawn into submitting their proposals due to favorable conditions in relation to monopoly (privileges), cheap labour (laws on paupers and the employment of prisoners), and in an attempt to benefit financially. Religion and societal norms played an important role in project proposals, which claimed to benefit common wealth and public good mainly through the following (see Subsection 6.2): employment of the poor, raising customs revenue, promoting domestic manufacturing and decreasing imports. Various laws, regulations and political decisions were shaping the projects proposed by projectors over the centuries.

Failure of some of these projects impacted upon their reputation, making it harder to take projectors seriously in the seventeenth century. Joint stock companies became popular in the second half of the seventeenth century and amongst them financial projects gained popularity towards the end of the seventeenth century. A number of projects never materialized as projector's plans proved unfeasible. Science within the proposals became important in the eighteenth century, when calculations and measurements started to be applied to projects. The collapse of the South Sea Bubble changed the profile of projects, since only large-scale projects were worth carrying out.

The name 'projector' gained a pejorative connotation a number of times in the history of projectors either due to abuses related to monopolies or large promises of joint stock companies. Satire played an important role in representing projectors to the public and literature reflected opinions of society about projectors through creative art. Satire represented the dilemmas of particular centuries, in some cases naming and shaming real people, real events and real projects.

3.8 Commentary

Defoe (1697) was probably rightly observing that the number of projects and projectors increased in relation to war (see Chapter 6), but he might be only partially right in suggesting that this increase was in relation to traders suffering from losses experienced due to privateers and consequently taking on projects as an alternative way of supporting themselves. The reviewed literature reveals the monarch's role in inviting projectors to present their projects, suggesting that the key reason for a project's emergence was the need to raise customs revenue to support the wars, both in the sixteenth and seventeenth centuries. War was of major concern. As Ratcliff (2012) highlighted (see Subsection 3.2.2) patents were a principal source of revenue through taxation from Elizabeth I to George III.

The Bank of England project was approved as a potential way to finance war with France (see Subsection 6.5.3). Even Defoe points out that ‘An Essay upon Projects’ emerged after assessing war with France (see Chapter 5.2.1).

As highlighted by the literature review, projectors up to the middle of the seventeenth century were seeking monopoly. Whilst we believe that monopoly is irrelevant to the current free market in the United Kingdom, there are very obvious cases of monopoly. One of the best examples is payment for the TV licence. There are multiple television channels but in order to live stream any of them legally it is necessary to have a TV licence (TV Licensing, 2017). However, the payment goes to the BBC only. The monopoly on the TV licence is a current analogy echoing with dubious projector activities. Monopolies were in the interest of projectors, they also balanced the risk of high investment involved in establishing a new venture in the presence of competition.

Despite reality reflecting facts within the satire, the picture presented was not necessarily a true image of projectors and their projects. However, it is a potential source of indications to yet undiscovered aspects of the history of projectors. For example, going through a number of projects presented within this thesis, none of them were carried out or proposed by a female version of a projector and none of the articles researched suggested the existence of projectresses. However, Ben Johnson in his satire ‘The Devil is an Ass’ refers to projectress Lady Taile-Bush. This literature suggested that there were female versions of projectors, which may have been unreported elsewhere due to gender bias. The negative meaning attached to the name resulted in a number of projector-like promoters disassociating themselves from projectors as did, for example, the Hartlib Circle.

Projectors were patentees in the sixteenth century but by the end of the century many of them became middlemen. As the following chapters reveal, projectors were mainly people with money and influence and therefore the middleman position was common. The projector culture is not an English phenomenon. There were similarly described promoters called ‘arbitrista’ in Spain and ‘projektmacher’ in Germany who were stereotyped similarly to England’s projectors (Yamamoto, 2009). Projectors were as important in carrying out project in the seventeenth century as project managers today. The next chapter presents projector Walter Morrell’s project plan on the new draperies and highlights the relevance of this project plan to project management.

Chapter 4. Archival focus

The previous chapter introduced projector culture. This chapter investigates a project proposal carried out by a projector in the seventeenth century. The historical study of the project plan on the manufacturing of new draperies proposed by projector Walter Morrell is explored.

The manuscript HM 53654, 'Morrell's manufacture for the new draperies: 1616' held in The Huntington Library, San Marino, California (Morrell, 1616) is the core source for this research, the first page of which is presented in Figure 1. This historical study was inspired by Zell's (2001) article 'Walter Morrell and the New Draperies Project, c. 1603-1631'.

There are a few other reasons why this over-30,000-word descriptive primary source of data was an excellent source for the research. Firstly, Morrell was the author and the initiator of the New Draperies Project. Secondly, Morrell wrote about the project in great detail, including information on teaching, quality management, finances, social return and other aspects. Thirdly, the manuscript contained a number of letters related to the project, which had been transcribed from the originals. Analysis of this manuscript was a unique opportunity to explore this particular projector's thoughts and the rhetoric used in writing a project plan. The manuscript is divided into three books. The first book explains the background and benefits of the project, the market environment, quality control, company structure and financial calculations. The focus of the second book is on the geographical expansion of the manufacturing of new draperies. Details on managing various aspects of the project are provided, including procedures, bookkeeping, recording processes, abuse prevention and employment as well as establishment and control of the bank for wool. The third book investigates the scarcity of the wool and provides suggestions on the sheep and wool register in England.

The need for lighter and cheaper fabrics appeared in the fifteenth century due to difficulties caused by English wool supply and increase in its price (Coleman, 1969). English woolens were very competitive in foreign markets, whilst worsteds were not significant in exports. Migrants from Flanders brought skills required for the new draperies. The first Flanders' markets were in southern Europe, which is why they were suitable for warmer climates. The importance of Italian merchants was evident in Antwerp, where they shipped 'new draperies' to the south markets. Many textile towns in Italy were experiencing difficulties, especially related to war, in the sixteenth century, imports from Antwerp were rising.

Technically ‘new draperies’ were half-worsted or mixed fabrics but not woollens as yarn was spun differently. It came under a variety of fabrics and bore names: ‘says, bays, serges, grosgrains, perpetuanas, rashes, mockadoes, barracans, shalloons, callumancoes, stammets, bombazines’. (p418, Coleman, 1696). The draperies were lower in price, therefore available for a broader range of consumers within different markets. Demand in particular grew in southern countries, but it became fashionable and appealed to broader markets, including the northern markets in the later seventeenth century.

The next section will present the context within which Morrell’s new draperies project emerged. The following three subsections of this chapter are dedicated to each of the books within the manuscript and introduce the key aspects of the New Draperies Project. A number of additional findings, by other scholars, related to the project are presented within Subsection 4.3.4.

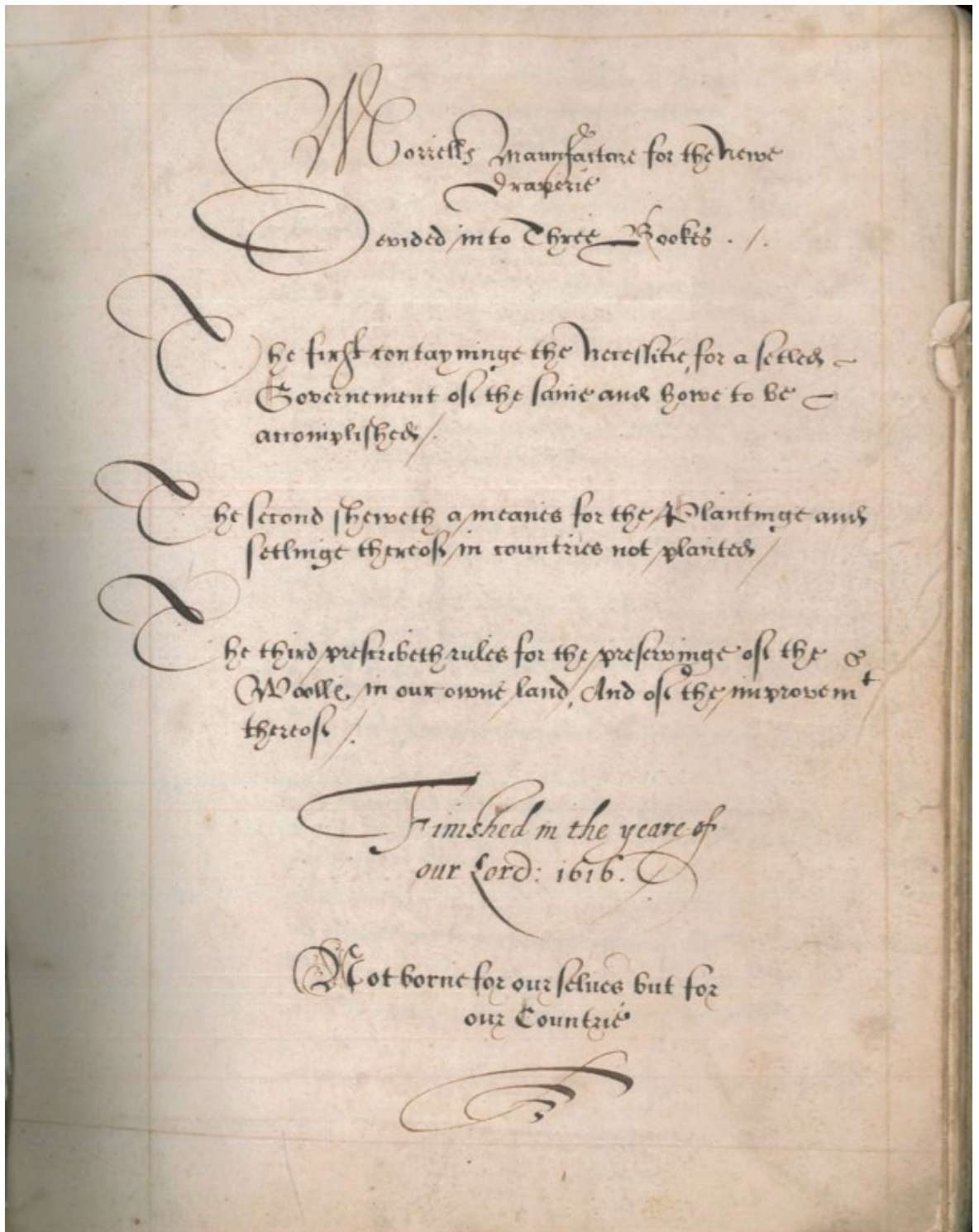


Figure 1. The first page of Walter Morrell's New Draperies Project manuscript
Source: Morrell, W. 1616. Morrell's manufacture for the new draperie: manuscript, 1616.
Medieval and British Historical Manuscripts. HM 53654. The Huntington Library, San
Marino, CA.

4.1 The context

Morrell's project commenced at the beginning of the seventeenth century, when, similarly to the sixteenth century, poverty, recession, inflation and unemployment were concerns in England. Social, economic and political circumstances encouraged a demand for projectors. A number of events within the sixteenth century were relevant for the beginning of the seventeenth century, including the granting of monopolies (Thirsk, 1978), which were attractive to projectors in relation to the benefits attached to them. However, the increasing number of monopolies abusing the system led to a cancellation of the most controversial patents by Queen Elizabeth I in 1601 (Ratcliff, 2012, Thirsk, 1978). King James I also suspended such practices in 1603 but permission for the establishment of monopolies by companies and corporations was granted for a fee, and monopolies 'lived' a golden age during his reign (Ratcliff, 2012, Thirsk, 1978). Moreover, a number of laws did appeal to the projectors, such as the English poor assistance legislation of the 1570s, which encouraged employment of the poor (Zell, 2001), and the legislation of 1576, which supported the work of paupers at home or in workhouses (Thirsk, 1978). Local manufacturing was enforced through policies passed by Queen Elizabeth I (Thirsk, 1978, Zell, 2001). The majority of these laws were attractive to Morrell as he was seeking monopoly rights on worsted produced by the poor.

Religion and society's norms played an important role in the seventeenth century (Yamamoto, 2010) (see Subsection 6.2). Religious rhetoric, the appeal of public service, and social and economic contribution were all fundamental aspects of Morrell's project in 1616. Rhetoric was the most striking characteristic of this project plan; it included dialogues between the new draperies' representative and other participants within the marketplace as well as government officials. Even God and Evil were part of the rhetoric of the project plan.

Morrell's project on the new draperies commenced in Hertfordshire. The population of this county was mainly dependent on agriculture and was also rapidly growing; there were few opportunities for the employment of children and women, which increased the level of unemployment and poverty (Zell, 2001). According to Fisher (1933), textile companies, based on the Poor Law, were established in almost every county. The seventeenth century experienced increased urbanization with a very rapid growth in population (Gibbons, 1969, Thirsk, 1978, Gribbin, 2005). Plague was inevitable in London and wealthier people moved to the suburbs during outbreaks of the disease (Gribbin, 2005). Morrell was one of these escapers and, as per the manuscript, his idea for the New Draperies Project emerged

during one of these moves (Morrell, 1616). The next three subsections are dedicated to each of the books within the manuscript and are based on Morrell's (1616) manuscript only.

4.1.1 The first book

The projector and merchant Walter Morrell presented his project as 'intended for the good of others' (Morrell, 1616, p1). Morrell reinforced his suitability for carrying out this project by writing: 'I have thought good at this time, to set onto the view of others (though in a rude and simple manner) such things as by observation and experience I have been brought to understand' (Morrell, 1616, p1). The project commenced five years into King James I's reign in 1608. Religion played an important role in this project not only due to its overall importance in the seventeenth century (as per Subsection 6.2), but also because the need for such a project arose in relation to a church renovation (see below).

Morrell and his family moved to Enfield because of an outbreak of sickness in London during 1603, the first year of King James I's reign. During his stay in Enfield, there was a charge of almost two hundred pounds as a levy for a repair to the local church. The merchant asked the church wardens 'how it could be, that so little regard should be had of the house of God, as let it go so much to decay, that now twenty pounds would but repair it' (Morrell, 1616, p3), while there are five hundred households within the parish and the payment was supposed to be 26 shillings and 8 pence. It was explained to him that only one hundred households were responsible for the whole charge, since the remaining four hundred could hardly maintain themselves. Morrell was surprised by this situation as there were a number of privileges related to living within Enfield, including it being just ten miles from London, and it having a free school and firewood. He concluded that circumstances could change if people received knowledge and employment. Morrell proposed the New Draperies Project as a way to reduce poverty, and increase employment and customs revenue.

A few parish members, including Sir Robert Wroth and Sir Vincent Skynner supported the project: 'for the obtain from his highness the grant of a charter for the incorporating of a company, to enable and further the process of the said intended plantation' (Morrell, 1616, p4). However, Robert Cecil the Earl of Salisbury, Lord Treasurer and also the president of the project, asked to be shown the 'new stuffs' (textiles), which were supposed to be manufactured by the employed poor. Cecil doubted that 'idle and ignorant people' could

master the skills required. Morrell's plan was to take fifty children from the parish of Hatfield and make them skillful in the manufacture of the new draperies with a budget of one hundred pounds per annum as well as funds for housing and its repair, when needed. This support came from the Earl of Salisbury, Robert Cecil, and was continued by his son, William Cecil, after the Earl's death.

Sir Roger Wilbraham, who was one of the Masters of the Court of Requests, also supported the project at the Whitehall Court on 23 February 1614, where he referred to Morrell's petition as follows (Morrell, 1616, p8):

His Majesties pleasure is, that the Lord Treasurer of England and Chancellor of his Majesties Exchequer shall give order to such merchants and other of best experience herein as they shall think meet to examine the particulars of this petition.

And if they find it will be beneficial to his majesties in his Customs and for the Common wealth by setting the poor on work, as is before suggested, Then to certify his majesty their opinions how the same may be proceeded in. And what recompense is meet to be given to the petitioner for his invention and pains herein.

The conclusions of the commission on the potential of the project were positive, suggesting that the New Draperies Project was charitable, relieving the poor and idleness, increasing their knowledge and skills and benefiting the industry, the town and the common wealth.

Through dialogue, Morrell illustrated that the old and new draperies could exist together without fierce competition for wool. The projector attended a number of courts where he heard debates by merchants, tradesmen, clothiers and wool buyers, which he later presented within his project plan capturing such issues as 'dying and dressing of cloth in England before the transportation thereof, as also to put down brokers, and unlawful dealers in Wool' (Morrell, 1616, p8). Rumors were spreading about unwrought and faulty wool leaving the country. There were a number of other abuses within wool production, such as a lower than standard number of threads within the fabric, insufficient length of the cloth and mixtures of wool:

...many are made more then otherwise could be, whereby the makers are overlaid, the ware being rough, the Commodities brought out of use. And our Country disgraced. All which is occasioned by the course spinning, and the sleight weaving, And this also is the only cause of the false making of our Cloth which doth occasion the deadness in the sale in the disgrace of our nation (Morrell, 1616, p23).

All of these issues were turned into opportunities within Morrell's project. He suggested that the value of the wool 'before the transportation' could be increased by selling wool worsteds and garments since 'the higher price the wool bear, the more profit the country reaped if it can be sold' (Morrell, 1616, p10); this also included higher employment and

revenue to the customs and the common wealth. Morrell was very specific in terms of the technical aspects of the high-quality draperies and strongly criticized technical preparation of the exported fabrics as well as the pricing. He suggested a number of statutes and ordinances, which refer to the prevention of abuses.

Profound understanding of the textiles industry and a willingness to improve the cloth to the greatest quality was best illustrated by the ordinance, which provided details on the requirements for weaving broad perpetuanas and addressed the existing problems (Morrell, 1616, 30p):

16. All broad Perpetuanas to be warped 27 yards in length, the Reed to stand five quarters and a half, and to contain three Thousand threads, allowing five score to the hundred, which according to the weavers computation is fifteen hundred, And what person or persons soever, shall make the same contrary hereonto, shall forfeit onto the Company.

Similar ordinances were suggested for near perpetuanas and equally precise and detailed requirements were included in the ordinances related to spinning, cloth sealing and the stamping system, which was supposed to help deal with abuse within the industry and punish the offenders. Morrell presented the finances of the project, illustrating the potential income to the customs and the common wealth when selling the white cloth abroad (the old draperies model) compared to the new draperies model, where serges, stockings and perpetuanas were sold instead. According to these calculations, the transported worsteds would bring 65 pounds, 10 shillings and 4 pence in additional income to the common wealth and 7 pounds, 16 shillings and 8 pence in additional income to the customs than the white cloth, when 270 pounds in weight of wool was used.

Morrell had a clear idea of the company's structure, which comprised of one master, four wardens and twenty-four warden assistants (Morrell, 1616, pp26-27). Duties and responsibilities were defined within ordinances and Morrell also suggested forming a governing body, which would be responsible for preventing abuse within the industry and resolving issues related to low-quality items. The charter was requested in the county of Hertford and the commission conclusions were supportive of Morrell's project. The focus of the first book was the establishment and governance of the new draperies venture. The second book presented within the next subsection emphasized the need for geographical expansion of the New Draperies Project.

4.1.2 The second book

Morrell obtained the charter for the New Draperies Project, but still introduced the second book by saying that ‘the sum and scope of this book, being to show a means of planting drapery in countries not planted’ (Morrell, 1616, p53) (note: although the original spelling is ‘country’, Morrell meant ‘county’ (in our understanding) in this case, and the same applies to all future instances). Morrell explained that there was no trade within market towns in the country and money was spent on foreign commodities without any exports being made. This formed another petition by the projector.

Morrell recommended procedures related to business management, such as bookkeeping, and emphasized the need for recording different processes. He paid a great deal of attention to the prevention of quality abuse. All this was explained in ordinances to such an extent that details were included regarding the need to change overseers (except two, in order to share experience) each year so that management could be improved.

The employees were also important to Morrell. The ordinance related to employment suggested that employees would be between six and forty years old and they would have the flexibility to choose whether they wanted to work for a whole or part of the year. A pyramid progression structure for managing the teaching of employees of the new draperies was proposed. An experienced spinster would teach ten employees for five pounds a year, then those ten would teach another ten, then those twenty would teach another twenty until three hundred and ten employees were taught within five years. The company would provide all necessary wool, while the responsibility of the county would be ‘only to pay the spinners for their labor the first year’ (Morrell, 1616, p41). The payment of eighteen pence a week was suggested for the employees (spinsters).

Another interesting proposal within the project was the establishment of a bank for wool ‘so neither the adverse storm of winter nor the scorching heat of Summer may hinder the growth of this young and hopeful intended plant’ (Morrell, 1616, p64). Morrell suggested that the exported wool from England became too cheap when the market slumped and, while people were still employed, the only choice was to sell the wool for whatever price they could get. This also led to a number of employees losing their jobs. The price of wool was related to various risks, for example, merchants were not prepared to pay a high price for the wool when the sea was rough in the wintertime, as the wool could be lost at sea. The solution to this situation, according to Morrell, was the establishment of a bank, which would buy wool for the right price and keep it in the bank until the market improved. It

would ensure that people remained employed, rent for the land was paid and high-value wool was sold for the right price. The benefit of having a bank was illustrated through the price of wool during both good and bad economic times. Morrell concluded that there was ‘the necessity of a Bank both in respect of the trade as also of the Country and Common wealth’ (Morrell, 1616, p70). He envisions it with the ‘adventurers in the said Bank And everyone giving in his or their names and what share he will bear in the Adventure’ (Morrell, 1616, p70), until a sufficient number of adventurers were gathered to be able to proceed with the bank.

The projector introduced a number of ordinances for the management of the bank for wool. The governing body of the bank would elect three persons from which one of them, a treasurer, would be responsible for receiving, keeping and paying the money or delegating this task to a sufficient deputy. Other governors would be chief ledgers or factors (one local and one for foreign countries), based in the hall and responsible for ‘receiving of the ware, making sales, keeping of Account, and returning money to the Company, or Bank in manner as shall be hereafter expressed’ (Morrell, 1616, p71). The number of bureaucratic procedures was increasing within the ordinances, although current companies still define and manage their projects in a very similar, bureaucratic way. A good example was the ordain number ten (Morrell, 1616, p73):

Item it might be ordained, that the Ledger shall weekly write onto the Treasurer, what wool, and what sorts and quantities thereof he hath received, As also that accordingly the Treasurer perceiving the ware to come to the hall faster, then it go from the hall, he may as need shall require make a Levy for Money for the supporting of the Bank.

Sir Francis Bacon, Knight and Attorney General, supported the project as well as the Lord Treasurer and later Earl of Salisbury, Chancellor of His Majesty’s Exchequer, Lieutenant Justice of Peace within the county, the officers and customs and various merchants and tradesmen. Moreover, Francis Bacon was assigned as one of four company wardens. Similarly to the first book, the benefits of the project to the customs, the common wealth and the poor were emphasized throughout the second book. The third book presented within the following subsection explores the issue of scarcity of the wool and the proposal to overcome it.

4.1.3 The third book

The third book was another petition on the project. This time, Morrell's focus was on the scarcity of the wool and suggesting how to overcome this issue. He proposed that the manufacturing of the highest standard wool would be more beneficial to the common wealth than keeping arable land, and he illustrated this through his calculations. The benefit coming from the pastureland and the tillage land when translated into money showed a lack of superiority against the new draperies venture. The reason was that the new draperies scheme would not only receive income from the production but also would provide employment to many more people, who were usually supported financially (paupers) by the government, and further benefits would come from the rent of the land or stock allowance. Morrell (1616, p95) presented the New Draperies Project: 'for I have not showed what we have, but what we might have' and added 'you cannot employ above a quarter of the people, And so the residue living idle, will consume all that and more' (Morrell, 1616, p95).

Morrell outlined twelve ordinances on how wool should be dealt with. He proposed a register for the annual production of wool. The petty constable would be responsible for the account, identifying the amount of pasture and numbers of sheep on fallow grounds 'within the Realm' (Morrell, 1616, p81). The wool needed for trade was supposed to be identified by every trader. The constable should provide the number of sheep within each parish every March and then these sheep would be counted so as to provide an estimate of the total number of sheep within the whole kingdom; this would allow an estimate of the wool potential within the country. The numbers would permit the calculation of the substantial amount of wool needed for use by the country and the amount of wool remaining. The sheep farmers were encouraged to provide numbers for wool sold and wool remaining as well as the number of sheep they owned, to the petty constable. This procedure was proposed in order to identify any fraud. The fellmongers and glovers were supposed to provide information to the petty constable on the wool sold. The weekly records of wool sold with the sellers' and buyers' details, including their name and the location, were to be recorded in the register. The ordinances go as far as 'what wool they shall buy that year, they will not sell else where, but in the Country or place, for which they are so appointed' (Morrell, 1616, p84). A clothier, during a discussion, criticized such procedures as being a great inconvenience but the argument by the new draperies representative was that:

the benefit would far exceed the damage which can be thereby, for there is no matter of Charge onto you mentioned only some trouble, yet that but little, for what trouble is it, only to procure under the hand of Two Justices a Testimony of your dwelling, and vocation, surely this cannot be a just cause of dislike, being but one in a year (Morrell, 1616, p85).

Morrell concluded with a comment on the importance of the New Draperies Project for the country (Morrell, 1616, p98):

I have so long labored for, and doe so much desire yet not so much for the benefit which I expect to reap thereby, as because I am persuaded, that it is a thing worth to be embraced in any place, but much more of this kingdome and Nation.

This concludes the overview of the final book and is the end of the manuscript. However, a number of scholars explored different additional primary sources relevant to the project. Their findings are presented within the following subsection, which contributes to further understanding of the project and the circumstances related to it.

4.1.4 Research on Morrell's New Draperies Project by other scholars

A number of scholars explored the account of Morrell. Zell (2001) was one of them and the primary source of his research was the same three-book manuscript summarized in the previous subsections. He additionally explored a number of other documents. Zell (2001, p656) also pointed out the importance of the rhetorical approach of the project plan, where Morrell presented the project through traditional dialogic discourse, simple descriptive prose, statistical estimates and projections as well as through a historical narrative prose. The latter presented his decade-long campaign (Zell, 2001). Moreover, 'the historical narrative in Morrell's account of 1616 can be confirmed at several points by documents that have survived independently and can be compared to Morrell's text' (Zell, 2001, p658). A few documents were signed by Robert Cecil that could date from 1608 (Zell, 2001).

The pilot project for the new draperies in Hatfield was proposed by Robert Cecil but the desired skills required by the poor in textiles were not gained before the death of Cecil in 1612 (Zell, 2001). The agreement with Cecil was defined as a ten-year project with fifty children employed (including twenty apprentices), who would master the 'crafts of spinning, weaving, and dyeing fustians or other stuffs' and get reasonable wages, but in return were responsible for not disclosing the knowledge gained for at least three years (HMC, Hatfield MSS, pt 22, without obvious reason assigned by calendar to 1618 cited in Zell, 2001, p658). The earl was responsible for selecting those fifty children, providing

work premises and housing, and also ten looms for the apprentices and paying £100 per annum to Morrell for ten years (Zell, 2001). Hankins (2003) points out that this part of the project was carried out with his brother Hugh, who was not mentioned in the manuscript. Employment of the idle poor in schemes existed even in the Elizabethan era (Zell, 2001). Thomas Smith in 'Discourse of the Commonweal' suggested domestic manufacturing of clothes instead of imports in 1549 (Zell, 2001).

Quality was an important aspect of Morrell's proposed worsteds. Zell (2001, p661) referred to attempts made by Duke Lennox, the cousin of the King, to manage the quality (prior to Morrell); Duke Lennox was granted 'the patent for searching and sealing new draperies...in 1605, and renewed in 1613, which was regularly abused by the duke's deputies' and 'by 1615 they were selling seals without even looking at the cloth!'. Hankins (2003) suggests that the new draperies were lighter and cheaper to make than traditional old draperies and they were lower quality and appealed to a lower-income consumer. However, Morrell (1616) highlights that the quality of the worsteds was one of the most important focus points in his New Draperies Project and there were a number of ordinances suggesting an improvement in the marketed worsteds. It is important to note that Hankins (2003), who wrote about Walter Morrell's project in his PhD thesis, was not familiar either with the three-book manuscript on the New Draperies Project written by Walter Morrell (1616), nor with the article by Zell (2001) who presented Morrell's case. This source needs to be assessed with caution, since many assumptions are made without knowledge of Morrell's multiple petitions.

Zell (2001, p656) suggests that the company was half capitalist and half co-operative with shareholders and shares and also a Crown monopoly; it was at the same time 'free enterprise' and state monopoly. The project was privately funded (Fisher, 1933). According to Fisher (1933), Morrell was the clerk of the company. The manuscript of the three books by Morrell tells the story until 1616. Zell (2001) explored this project after 1616 and revealed that the Royal Patent was granted in March 1617 after a decade's battle. There was no autobiographic record after 1616 but there was evidence of Morrell's battle in the coming fifteen years, when the local JPs (Justices of the Peace) did not show an interest in his enterprise and the local magistrates were busy filling out objections to it (Zell, 2001). The Hertfordshire elite did not give in to the pressure applied from the privy council, and the same issues as experienced in the pilot scheme continued, which included a lack of support and recognition of the benefits of the project by locals and the prioritization of children working in farms rather than in the textile industry (Zell, 2001). Zell (2001) concluded that, despite backing from high government officers, the failure of

the project was related to an inability to pursue the Hertfordshire gentry, since the magistrates were not keen on finding the answer to unemployment through experiments.

‘Morrell’s scheme of cloth making companies for each shire, managed by the leading gentry, became government policy in 1622, and features in both the official reports of 1622 and in privy council thinking up to 1625’ (Zell, 2001, p669). There was agreement on Morrell’s incorporation of the company in 1625, overseeing the new draperies within the following counties: Hertfordshire, Middlesex, Berkshire, Devon, Dorset and Shropshire, but King James I died and the scheme died with him (Zell, 2001).

4.2 Summary

This chapter presented the project plan on the manufacture of new draperies written by Morrell (1616), where the projector outlined the management of various aspects of the project in detail, including teaching, quality, employment, finance, and public benefit. The project plan contained the company’s structure, financial calculations and projections, details of employment and teaching, procedures for weaving, spinning, sealing and stamping cloth and control of abuse. The project suggested benefiting the poor, the industry, the town and the King. The main benefits of the project were in relation to customs through the export of domestic worsteds instead of white cloth, a decrease in poverty through increasing employment and teaching the poor a skill as well as improving their knowledge. Apart from the establishment of manufacturing of new draperies, Morrell also proposed the establishment of a bank for wool and a wool register. This project was proposed and carried out (supervised) by Morrell.

4.3 Project management application and commentary

The previous sections were highly descriptive. The objective was to present an overview of the New Draperies Project and point out the aspects relevant to project management. This commentary section presents the analysis of Morrell’s New Draperies Project and identifies its contribution to the history of project management. The second subsection explored the top-level organogram of the New Draperies Project, and the final subsection highlighted how the New Draperies Project is echoed within established project

management, and how project practices were proposed in the absence of conventional project management tools and techniques.

4.3.1 The seventeenth-century rhetoric

The focus of this section is on the rhetoric used within the New Draperies Project. This aspect of the project proposal is striking due to the role of religion, the format, and the escalation of public and suppression of private benefits. Words and phrases characteristic for project plans at the beginning of the seventeenth century and their occurrence within the new draperies proposal are presented in Table 8. The word count excludes the content list within the project plan. Although these terms and expressions are very remote to the ones used in contemporary project proposals, a number of elements echo in modern project plans and these are presented within the last subsection.

One of the characteristic features of seventeenth-century project plans is the benefit of the project to the 'public good'; this point was also highlighted in the literature review. The importance of this aspect is illustrated well in the project plan as it was communicated ninety times, out of which seventy occurrences used the phrase 'common wealth' and the remaining occurrences were synonymous phrases, such as general good, good for others, good of the town, public good, for the good at this realm, general good of the whole kingdom, greater good, etc. The appeal to common wealth was a very important element in projects seeking a Royal Charter as this project did. The word 'charter' occurred twenty-four times.

As per the literature review, Morrell's project was proposed when monopolies were still well rooted in the market and the monarch, whose main interests were in raising customs revenue, needed to be convinced by the project plan. This aspect of benefiting customs revenue was expressed seventeen times within the project plan; the word 'monopoly' did not appear. The other important factor of the project was the private benefit to the projector. Morrell did not directly express his interest in reward for the project, however, the conclusions of the Commission, which are included in the manuscript, contained reference to the projector's benefit through the words 'recompense' and 'rewards'. Citation of these conclusions appeals to sophisticated communication of Morrell's desire for some reward for this project. As Heller (1999) pointed out, interest in profit within projects was not fully acceptable at the beginning of the seventeenth century. Therefore, despite potential intention for profit, this interest was hidden or indirectly communicated

(see Chapter 6). As mentioned earlier, religious rhetoric was a common feature within project proposals and Morrell embraced this path as well. God, Evil and Christian care all played a part in the new draperies proposal.

Morrell's project proposal contained long dialogues between various 'actors' of the wool industry (clothiers, merchants, etc.), government officials and the opposition (Morrell, 1616). While it is hard to relate to this approach in project plans in the twenty-first century, this type of rhetoric felt powerful and persuasive. This approach was chosen to respond to and defeat potentially opposing arguments from other market participants. Morrell's project plan was in line with the rhetoric of the early seventeenth century, however, it is very remote from that used in contemporary project plans.

Contextual meaning	Word or Phrase	Pages within the manuscript (Morrell, 1616)	Word count within the proposal
Common wealth	Common wealth	1, 1, 5, 7, 7, 7, 8, 9, 9, 10, 10, 11, 12, 12, 12, 15, 16, 16, 17, 17, 18, 18, 19, 19, 19, 20, 20, 21, 21, 21, 21, 23, 23, 23, 26, 35, 37, 38, 39, 43, 45, 46, 47, 48, 48, 50, 53, 54, 67, 69, 70, 70, 75, 77, 78, 79, 79, 87, 87, 88, 88, 88, 89, 93, 95, 95, 96, 97, 99, 100	70
Public good	General good, good for others, good of the town, public good, for the good at this realm, general good of the whole kingdom, greater good, ect.	1, 1, 1, 2, 4, 5, 5, 6, 7, 7, 10, 11, 15, 19, 45, 47, 47, 48, 89, 97	20
Beneficial to customs	Beneficial to customs	8, 15, 18, 19, 20, 21, 26, 35, 36, 39, 45, 46, 46, 47, 50, 79, 93	17
Charter	Charter	4, 4, 33, 35, 35, 37, 37, 37, 39, 39, 40, 44, 44, 45, 46, 46, 47, 47, 47, 48, 50, 51, 63, 68	24
God	God	1, 1, 2, 3, 3, 5	6
'Christian care'	'Christian care'	2	1
Evil	Evil	15, 38, 96, 96	4
Recompense	Recompense	8, 38	2
Reward	Reward	8	1
Monopoly	Monopoly	-	0

Table 8. The seventeenth-century rhetoric within the New Draperies Project

Source: (Morrell, 1616)

4.3.2 The organogram

Assigned responsibilities are an important aspect of carrying out projects. Morrell's project plan explained the responsibilities of company governance and once it is presented in a modern way, the organogram (see Figure 2), highlights the simple structure of the top-level governance and subordination within the hierarchy. The manufactory team structure is not included, as the focus herein is on the governance of the project. The geographical expansion of the new draperies manufactory to a number of counties, rather than in the

initially proposed single county, had an impact on the organogram. This change was presented within the second book and is explained in this section.

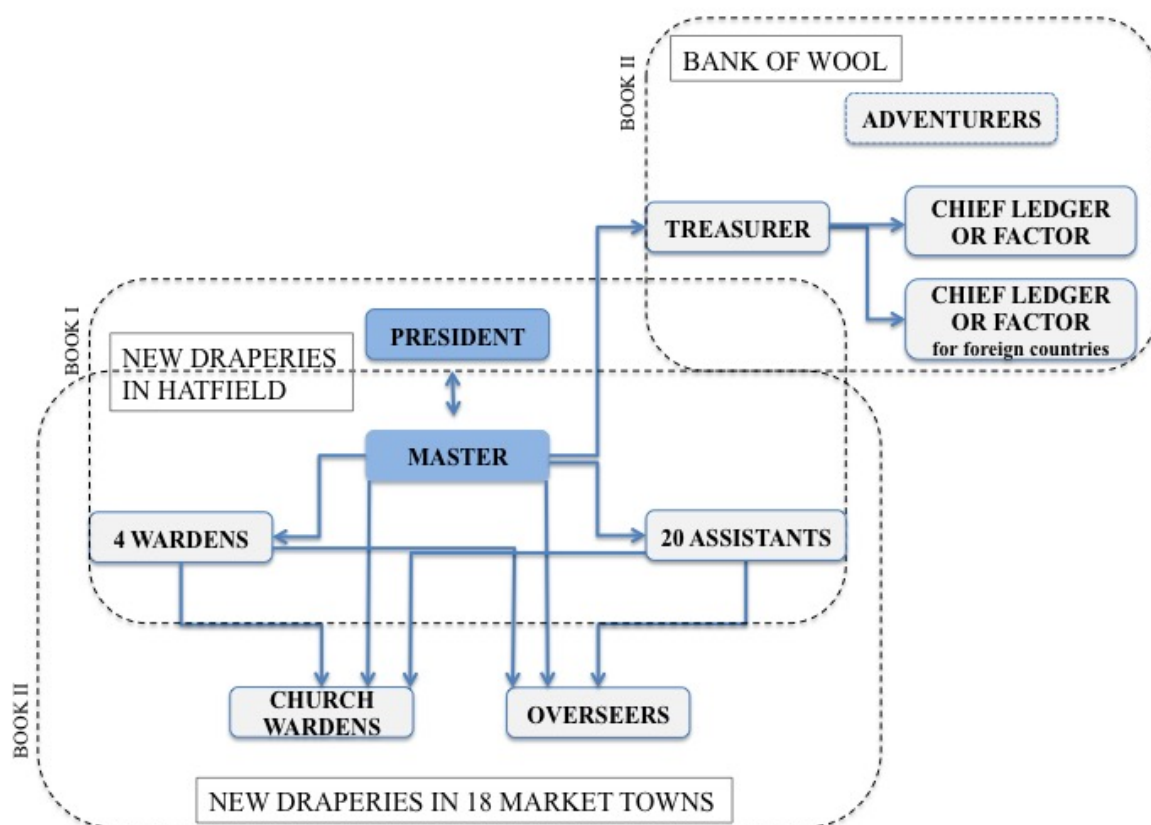


Figure 2. The New Draperies Project organogram

Source: (Morrell, 1616)

The first proposal within the first book of the manuscript defined initial project governance in a single Hatfield location. The president of the project supported it financially and provided the housing. The core project governance team comprised of a master, four wardens and twenty assistants. All positions and responsibilities are listed in Table 9. In the New Draperies Project, the master and the president appear to be the same person. The master appointed the wardens and assistants. There was an overlap of responsibilities between the master, the wardens and the assistants.

The second book proposed the expansion of the project from a single location to eighteen market towns. The top-level governance of the project remained the same, but new positions of churchwardens and overseers emerged. Their responsibilities related to local governance and they reported to the master, wardens and assistants.

The bank for wool formed from the adventurers' shares was also proposed in the second book. The governance of this bank was assigned to the treasurer, who reported to the master; the chief ledger or factor reported to the treasurer. The responsibilities of the governance of the bank for wool are listed in Table 9.

Position	Assignee, -s / description	Responsibilities	Page Nr
President	Lord Treasurer, Earl of Salisbury Robert Cecil (died in 1612)	<ul style="list-style-type: none"> • provide the allowance of 100 pounds per annum • provide housing for trade and repair from time to time 	5
President	Earl of Salisbury William Cecil (since 1612)	<ul style="list-style-type: none"> • provide the allowance of 100 pounds per annum 	5
Master (elected, chosen and sworn)	Earl of Salisbury William Cecil	<ul style="list-style-type: none"> • execute laws, statutes and ordains • prevent abuses • appoint wardens and assistants 	49
		<p style="text-align: center;"><u>Geographical spread:</u></p> <ul style="list-style-type: none"> • overview the company within all counties • visit and support local counties • receive the reports and accounts from local counties • manage the book of queries and ordinances • agree on plantation, governance and support of the new draperies • determine teachers for each parish 	54, 56
		<p style="text-align: center;"><u>Bank for wool:</u></p> <ul style="list-style-type: none"> • nominate tree men and elect one as a treasurer • elect and choose chief ledger or factor • elect or choose one or more ledgers or factors for foreign countries • determine prices for the items 	71-73
Twenty assistants (elected, chosen and sworn)	Sir Charles Morrison Sir John Ferris Sir John Leuentrop Sir Thomas Pope Blunt Sir John Luke Sir Henrie Helmes Sir Peter Saltonstall Sir Gilbert Wakering Sir Robert Botoler Sir George Gill Sir John Boteler Sir Charles Casar Sir Edmond Lucie Mr Ralphe Sadler Mr William Litton Mr Simeon Brograue Mr Thomas Dacres Mr William Puruey Mr Thomas Dockwra Mr Edward Luster Mr Edward Cason Mr John Shotbolt Mr Nicholas Trott Mr Edward Curle	<ul style="list-style-type: none"> • overview the company within all counties • visit and support local counties • receive the reports and accounts from local counties • manage the book of queries and ordinances • agree on plantation, governance and support the new draperies • determine teachers for each parish 	54, 56
		<ul style="list-style-type: none"> • remain on duty from time to time out of working hours 	27
		<ul style="list-style-type: none"> • execute laws, statutes and ordains • prevent abuses 	49

Table 9. The New Draperies Project governance

Source: (Morrell, 1616)

Position	Assignee, -s / description	Responsibilities	Page Nr
Four Wardens (elected, chosen and sworn)	Sir Francis Bacon Sir Richard Spencer Sir Arthur Cavell Sir Henry Carey	<ul style="list-style-type: none"> • execute laws, statutes and ordains • prevent abuses 	49
		<ul style="list-style-type: none"> • overview the company within all counties • visit and support local counties • receive the reports and accounts from local counties • manage the book of queries and ordinances • agree on plantation, governance and support the new draperies • determine teachers for each parish 	54, 56
Church wardens		<ul style="list-style-type: none"> • support master, wardens and assistants within each county 	54
		<ul style="list-style-type: none"> • manage local accounts • support with employment procedures • provide wheels and reels to the parish 	56
Overseers	Rotation of the overseers every year to improve governance except two	<ul style="list-style-type: none"> • support master, wardens and assistants within each county 	54
Sealers (appointed by master, wardens and their deputies)	Twenty expert men of the company: six should always be extant six two weekly to go out and two to come in	<ul style="list-style-type: none"> • view and survey of all new draperies, which come to Hall • fix seal and stamp indicating the true worth of the piece 	31
Treasurer		<ul style="list-style-type: none"> • support the trade financially in dead times 	64
		<ul style="list-style-type: none"> • receive, keep and pay money of adventurers 	71
		<ul style="list-style-type: none"> • share account received from the ledger with master, wardens and assistants twice a year 	74
Chief ledger or factor	Resident at the hall or about London	<ul style="list-style-type: none"> • receive the ware • make sales • keep account • return money to the company or bank 	71
		<ul style="list-style-type: none"> • handle weekly incoming account 	72
		<ul style="list-style-type: none"> • weekly report to Treasurer on wool, sorts and quantities received • provide the account of all ware and money received 	73
Chief ledger or factor for foreign countries		<ul style="list-style-type: none"> • make sales of wares • check potential abuse practices 	71

Table 9 continuation. The New Draperies Project governance

Source: (Morrell, 1616)

The ordains on the governance of the project were very detailed and they created a complicated bureaucratic system. There was a request for the traders of wool and wool

products to provide the records with details on the wool bought and sold, the type of wool, the price and the seller's name. It could be argued that a similar approach is echoed in current sales systems as this information is presented in the financial bookkeeping, invoices and receipts. The New Draperies Project governance structure was rational and simple. It is important to note that a number of people involved in the governance of the project were influential and connected to the King. Moreover, there were influential local supporters of the project, including Sir Robert Wroth and Sir Vincent Skynner as well as Sir Roger Wilbraham, the Master of the Court of Requests. As presented in Chapter 6, the influential people played a major role within the projects of projectors and Morrell's case is not an exception.

4.3.3 The characteristics of project management – analysis

This research does not suggest in any way that modern project management is the same as project practices four hundred years ago, there are aspects of projects which echo within current project management. A number of these aspects have changed over the centuries, adjusting to the requirements of projects.

Morrell's project plan was rational and pragmatic. The relevance of a number of characteristics of the seventeenth-century project to modern project management is highlighted in this subsection. The purpose of this illustration is to exhibit relevance of this historical account of projectors to the field of project management. The New Draperies Project plan included various monetary calculations and financial projections, like the project's usefulness and impact on other market participants, including the old draperies.

One of the important facets of modern project management is knowledge, which has enabled the professionalization of project management (Garel, 2013). This facet was also important in the seventeenth century. Although the accumulation and type of knowledge were completely different, the common feature is the importance of the competence of the person, who is carrying out the project. Gaining qualifications and accreditation play an important role today while the competence of projectors was represented through reputation and experience.

Table 10 reveals the words and phrases within the manuscript that refer to someone's suitability for the project. Experience and knowledge were very important and were frequently mentioned within this project plan. The Earl of Salisbury, William Cecil, and Francis Bacon in their letter to the King in 1616 wrote that Walter Morrell (Morrell, 1616,

p52): 'showed himself very careful and industrious for the affecting of this business, and hath given testimony that his experience in this mystery is more then ordinary'. Other terms within the project plan referring to knowledge or experiences were: understanding, wisdom, observation and skill, also 'men of understanding' (Morrell, 1616, p16), 'learned men' (Morrell, 1616, p2), 'men of experience and Judgment' (Morrell, 1616, p17).

Knowledge was most likely communicated through word of mouth and experience as well as ideas 'borrowed' from other projectors' work, which is evidential in Morrell's case (explained later in this section). However, Morrell (1616, p1) also suggests that 'wisdom is increased by travel and travel made profitable by observation, so by them both is understanding conferred or infused into an ingenious and willing mind'.

Word/ Phrase	Pages	Word count
Experience	1, 8, 12, 16, 17, 17, 35, 38, 47, 52, 57, 60, 60, 85	14
Knowledge	1, 1, 1, 3, 6, 6, 6, 35, 35, 39, 43, 50	12
Understanding	1, 1, 7, 16, 18, 48, 74, 75, 86	9
Wisdom	1, 1, 46, 48, 53, 59, 80	7
Experienced	17, 19, 41, 65	4
Observation	1, 1	2
Wise	2	1
Skill	6	1
'Wisest head'	21	1
'Learned men'	2	1
'Gentlemen of best quality and rank'	51	1

Table 10. Terminology in reference to knowledge within the New Draperies Project

Source: (Morrell, 1616)

Morrell was a skilled and knowledgeable clothier proposing the project in the textiles industry. He even gathered a detailed handbook on clothmaking, which did not survive (Zell, 2001). In order to teach the employees and perfect their spinning skills, he suggested employment of an experienced spinster: 'Into each parish to be instructed, shall be a well experienced Spinster brought which shall take ten persons to instruct, the charge of

teaching which ten, will be five pounds, or thereabout' (Morrell, 1616, p41). Morrell understood the execution of the technical part of the project, which was best illustrated by the requirements for perpetuanas (cited within Section 4.1.1). Skills and knowledge clearly played an important role in this project as they do in modern project management.

Details on aspects of employment are also provided within the project plan, including payment, employees' age, housing, learning and work flexibility. However, today we think about work flexibility in a different way than presented within this project plan, where it meant working for a full or part of a year. A model of teaching was presented, which would enable three hundred and ten spinners to be trained within five years. The proposed payment for the spinners was eighteen pence a week. Morrell requested to cover the first year's labour payment. The ten-year project's (Zell, 2001) budget was one hundred pounds per annum (Morrell, 1616). There are references to a number of timings within the project, for example (Morrell, 1616, p57):

Further it might be ordained that the trade shall provide wool to employ the Spinners; which wool is to be delivered over to the Overseers, And the new Overseers at a day appointed to deliver onto the spinners, As also a day appointed for the Redelivery thereof to the Overseers, which may be every 14 days or Twenty days And so the day to stand unaltered as a Market day.

The overall objective of this project was to relieve the poor from idleness and poverty through employment. The objective of the manufacture of new draperies was to sell high-quality worsteds for the right price. However, there were a few other benefits of the project for the employees, the parish and the King, which included increased employment and customs revenue, teaching skills to the poor that would be beneficial for the future. The benefits were expressed in monetary value. Zell (2001, p658) suggested that the ultimate aim of this project was 'the establishment of companies to manage the manufacture by poor people of new draperies all over the kingdom'.

Table 11 presents elements of Morrell's project and their reflection within the project management definitions by the Association for Project Management (2017) and the Project Management Institute (2013b) (the definitions are presented in Chapter 1, Section 1.1). Projects conducted at the beginning of the seventeenth century and the modern project management approach should not in any way be understood as counterparts of the same approach. Even the definition of the term 'project' was understood differently (see Chapter 1). The approach to project practice was different, but there are a number of aspects of seventeenth-century projects, which echo in modern project management and consequently provide a contribution to the history of project management.

The elements of project management	Morrell's project on the new draperies	Page number within the manuscript/ location within the other source
Applied knowledge to achieve the objective	Morrell was an experienced merchant	3
	Morrell 'showed himself very careful and industrious for the affecting of this business and hath given testimony that his experience in this mystery is more then ordinary' (letter from William Earl of Salisbury and Francis Bacon to the King in 1616)	52
	Employment of an experienced spinster	41
	Applying someone else's relevant work: Robert Payne's women and children employment backed up by calculations	(Zell, 2001, p655)
	Applying someone else's relevant work: Thomas Carew's comparison of the benefits of the new draperies versus the old	(Zell, 2001, pp660-661)
Applied skills Skills to achieve the objective	Experienced spinster teaching spinning skills	41
Applied techniques	Expand the new draperies manufacturing into the places where it was not exercised	3, 53
Effective execution (on-time) / Time	A period of ten years	(Zell, 2001, p658)
Efficient execution (on-budget) Cost	100 pounds per annum	5
	50 pounds per annum for better supporting	5
	Experienced spinster for 5 pounds per annum	41
	1209 pounds per annum for employees	41
The objective	The overall project objective: to relieve the poor from idleness and poverty through employment	6
	Increase customs revenue, based on calculations	19-21, 93-94
	Employ the poor	4, 5
	Teach people skills and knowledge of the industry	6
Scope	Parish of Hatfield	5
	Eighteen market towns with no new draperies trade existent	53
Processes to achieve the objective	<u>Locations</u> : where the new draperies trade was not exercised	3
	<u>Teaching</u> : experienced spinster to start with, and then a progressive teaching model resulting in 310 taught poor children	41
	<u>Housing</u> : for the manufactory	5
	<u>Employment</u> : experienced spinster, 50 poor children in Hatfield	5
	<u>Financing</u> : 100 pounds per annum	5
	<u>Influence</u> : involving high governing officers in the project, such as Lord Treasurer, Earl of Salisbury Robert Cecil and later his son William Cecil or Knight and his Majesty's Attorney Francis Bacon	5, 49

Table 11. The characteristics of project management within the New Draperies Project

Sources: (Morrell, 1616, Zell, 2001, Morris, 2011, Project Management Institute, 2013b, Association for Project Management, 2017)

The elements of project management	Morrell's project on the new draperies	Page number within the manuscript/ location within the other source
Methods to achieve the objective	Through the granting of a charter for company incorporation	4, 36, 45, 49-51, 52
Human resources	The employment of 50 poor children of the parish of Hatfield	5
	The children 'instructed in the arts and mysteries of the new draperies'	5
	Commission for evaluating the children's ability to master the new draperies to perfection	5, 6
	Teaching the skill, which is beneficial to employees after they leave the company	6
	Payment of 18 pence per week to each employee (spinsters) and £5 for the experienced spinster	41
Quality	Cloth quality control through ordains. Eg. parameters of broad and narrow perpetuanas and punishment of the abusers	30
	Improving wool sales	63-66
	Commission for evaluating the children's ability to master the new draperies to perfection	5, 6
	Through ordains in relation to: sorters and pickers of wool (p29 ordain 11); spinners alteration of reels with the right number of knots or threads in each knot (p29 ordain 13); spinners should not mix two sorts of work (p30 ordain 14); waste of wool by spinner (p30 ordain 15); precise technical measurements for weaving broad perpetuanas (p30 ordain 16) and for narrow perpetuanas (p30 ordain 17); stamping and marking items (p30 ordains 18, p31 ordain 19); seals on items (p32 ordains 22, 23 and 25, p33 ordain 26, 27)	27-34
	Item quality control through sealing and stamping	60
	Item dyeing standards	61
Risk	-	-
Procurement	Establishment of the bank for wool	71-74
	Experienced spinster for 5 pounds per annum (for the first year only)	41
	Payment for the yarn delayed for a year	41
	Process of purchasing and selling wool	71
Communication management	Clear subordination of top governance	54, 56, 72
	Clear subordination of local governance	54, 56, 57
	Clear subordination of governance of the bank for wool	64, 71-74

Table 11 continuation. The characteristics of project management within the New Draperies Project

Sources: (Morrell, 1616, Zell, 2001, Morris, 2011, Project Management Institute, 2013b, Association for Project Management, 2017)

The New Draperies Project was carried out as a pilot project in Hatfield and the project proposal was to replicate the established model in 18 market towns. Morrell borrowed and applied relevant ideas from other projectors' project plans. A number of elements of Morrell's project plan were previously exercised practices, for example Robert Payne argued that the agricultural economy was very limited in employment and so he promoted women and children to his woad cultivation project and backed up this action with

calculations and costings (Zell, 2001). The same argument was presented in Morrell's project in a very similar way. Zell (2001) referred to a document in Thirsk and Cooper (1972) which highlighted the advantages of the new draperies versus the old draperies in North Buckinghamshire. Similar calculations were presented within Morrell's project. According to Zell (2001), Thomas Carew in his publication 'A caveat for clothiers' in 1603 favoured worsteds in comparison to woolen cloth and highlighted that the old draperies pay less to employees. This aspect was very similarly presented in Morrell's project. History is what we know about the past from evidence that survives, so it is hard to judge at this stage whether other aspects of the project were Morrell's original thoughts or were presented within other projects prior to Morrell's proposal, as none of the 'borrowed' ideas were referenced. These examples illustrate that the proposal was written applying relevant or transferable knowledge from proposals by others. An essential component of project management models is transferability of project management practice to other projects. This is not to compare the seventeenth-century approach to projects with modern project management but it is evident that these elements do echo each other.

The timeline of the project is questionable, since the project was already ongoing at the time when the petitions were written and charter approval was also outstanding. However, despite the importance of time in project management, adjusting initially defined timings is very common, particularly in relation to unforeseen circumstances, even in the modern management of projects, never mind in projects four hundred years ago. The projections and estimations that define the future make project management timings prone to alteration both in the past and current project practice, and this is especially true for projects involving innovations. Morrell might not have calculated the risk, but equally, it was not that relevant for a monopoly. The inclusion of risk factors would have raised trust issues of the private venture with the investors.

A number of issues with the quality of woolens in the market led to suggestions for quality control. A large part of the project plan covers this aspect. The project proposal contains details on a progressive pyramid teaching structure for manufacturing skills, quality management, the reasons for superiority of the New Draperies Project over old draperies and farming, sales strategies, establishment of the bank for wool, transportation, etc. A few practices proposed by Morrell, including the bank for wool and the quality control within this project, were monopoly based and similar to government regulations even though they were part of the project. The characteristics of project management within the New Draperies Project is presented in detail in Tables 11 and 12.

PMBOK knowledge areas (2012)	Knowledge areas echo with the New Draperies Project plan	Page (Morrell, 1616, unless stated otherwise)
Project integration management	Established governing body for the company	7, 49
	Ordains for governance	27-34
	Ordains for governance	54-59
Project scope management	Parish of Hatfield	5
	Eighteen market towns with no new draperies trade existent	53
Project time management	A period of ten years	(Zell, 2001, p658)
Project cost management	100 pounds per annum	5
	50 pounds per annum for better supporting	5
	Experienced spinster for 5 pounds per annum	41
	1209 pounds per annum for employees	41
Project quality management	Improving wool sales	63-66
	Commission for evaluating the children's ability to master the new draperies to perfection	5, 6
	Control through ordains in relation to: sorters and pickers of wool (p29 ordain 11); spinners alteration of reels with the right number of knots or threads in each knot (p29 ordain 13); spinners should not mix two sorts of work (p30 ordain 14); waste of wool by spinner (p30 ordain 15); precise technical measurements for weaving broad perpetuanas (p30 ordain 16), for narrow perpetuanas (p30 ordain 17); stamping and marking items (p30 ordains 18, p31 ordain 19); seals on items (p32 ordains 22, 23 and 25, p33 ordain 26, 27)	27-34
	Item quality control through sealing and stamping	60
	Item dyeing standards	61
Project human resources management	The employment of 50 poor children of the parish of Hatfield	5
	The children would be 'instructed in the arts and mysteries of the new draperies'	5
	Commission for evaluating the children's ability to master the new draperies to perfection	5, 6
	Teaching the skill, which is beneficial to employees after they leave the company	6
	Payment of 18 pence per week to each employee (spinsters) and £5 for the experienced spinster	41
Project communications management	Clear subordination of top governance	54, 56, 72
	Clear subordination of local	54, 56, 57
	Clear subordination of governance of the bank for wool	64, 71-74

Table 12. PMBOK knowledge areas echo within Morrell's project plan

Sources: Morrell (1616), Zell (2001), Project Management Institute (2013a, p61)

PMBOK knowledge areas (2012)	Knowledge areas echo with the New Draperies Project plan	Page (Morrell, 1616, unless stated otherwise)
Project risk management	-	-
Project procurement management	Establishment of the bank for wool	71-74
	Experienced spinster for 5 pounds per annum (for the first year only)	41
	Option of delaying the payment for the yarn for a year	41
	Process of purchasing and selling wool	71
Project stakeholder management	The initial consent of the New Draperies Project by St Robert Wroth and Sr Vincent Skynner, prior to the project proposal	4
	Lord Treasurer, Earl of Salisbury Robert Cecil (and later his son William Cecil) became the president and master of the company	4, 49
	Knight and his Majesty's Attorney Francis Bacon was one of the wardens within the company	49
	Consulting with tradesmen, merchants, artificers, husbandmen and grassier prior to writing the project	2
	Adventurers of the bank for wool	70

Table 12 continuation. PMBOK knowledge areas echo within Morrell's project plan

Sources: Morrell (1616), Zell (2001), Project Management Institute (2013a, p61)

As this section has shown, a number of elements can be identified as echoing within modern project management, despite those elements being not identical to project practice in the seventeenth century. This research does not aim to prove the impossible, which is that project management today and four hundred years ago was the same, but rather this research searches for the roots of project management within a remote timeline of projects conducted in order to provide a historical account of the activities of projectors and their relevance to today's practices. Morrell's proposed project is a great example of managerial thought by a projector who proposed and carried out the project.

Söderlund and Lenfle (2013) point out that the management of projects was described using a different lexicon throughout history but the techniques used were very similar and are reflected in Morrell's project proposal. The broad key aspects of this project's proposal echoing modern project management were: the reason for the project's emergence; the place; the period of the project; labour; and the list of responsible officers and the project cost; these aspects are now more frequently referred to as the objective; the location; deadlines; human resources; organogram and budget, despite the meaning of 'project' being different. The next chapter's focus is socio-historical where proposed projects and opinions expressed about projectors by Daniel Defoe (1697) in 'An Essay upon Projects' are explored.

Chapter 5. Socio-historical focus

The previous, archival focus, chapter was on a project plan within the seventeenth century. However, not all proposed project plans at that time were written with the author's intention of carrying them out. One of these examples is presented within this chapter, focusing on socio-historical viewpoint, where 'An Essay upon Projects' by Daniel Defoe (1697) is explored. This writing shaped public opinion about both projects and projectors and was read well beyond the seventeenth century due to its multiple reprints.

Communication channels went through a transformation in the seventeenth century. Printed news before the 1640s was domestic and controlled by the privy council with word of mouth being the main medium for news (Cust, 1986). As news became progressively more accessible, literacy increased considerably between 1540 and 1640 in England, mainly as a result of the establishment of three to four hundred new grammar schools, and literacy rates were high by the eighteenth century (Slack, 2015). The London Gazette started circulation in 1666 (Novak, 2008) and publications became an important source of information in literate society.

Daniel Defoe, the well-known author of 'Robinson Crusoe' (1719), 'Moll Flanders' (1722) and 'Roxana' (1724), who also wrote non-fiction books, articles in a newspaper and published pamphlets, was a very vocal writer, shaping public opinion through his writings. His book on multiple project proposals, 'An Essay upon Projects' (1697), established Defoe as an author (Sutherland, 1950). The image of a projector, presented within the book, is explored in this chapter as is an overview of the projects proposed. The next section presents Daniel Defoe's background followed by a section on his proposed projects and his opinion on projectors as set out in 'An Essay upon Projects'.

5.1 Daniel Defoe's background

He is the father of the novel, the founder of modern journalism, the apostle of the middle class, the triumphant herald of the all-conquering bourgeoisie... (Earle, 1976, p3).

5.1.1 Family and childhood

The real date of birth of Daniel Defoe is not known, but he was born in either 1660 or 1661 in London under the name of Daniel Foe, which he changed to Defoe in his forties (Earle, 1976, Richetti, 2005, Sutherland, 1950). Defoe's father was a tallow chandler and candle manufacturer. He lost his mother at the age of ten or eleven (Richetti, 2005). The boy witnessed a number of harsh events during the seventeenth century (Richetti, 2015, p2):

...the Second Anglo-Dutch War of 1664-7 in which Dutch ships (...) destroyed much of the English fleet; the great bubonic plague that in 1665 killed over 70,000 people in the city; and the Great Fire in September 1666 that destroyed most of the wooden houses of medieval London...

Whilst the 1666 fire destroyed many buildings surrounding Daniel Defoe's home (13,200 houses or three-quarters of the Old City), his father's, James Foe's, house and shop survived (Sutherland, 1950, Wall, 2008). However, Hamilton and Parker (2016, p105) contradict this fact by suggesting that 'his original family house burnt down in the Great Fire of London' although there is no reference provided.

Defoe was born to a puritan dissenters' family during the time when nonconformists were not accepted in traditional schools and universities in England, and he was therefore educated in Newington Green Dissenting Academy (Earle, 1976, Sutherland, 1950, Wall, 2008). Dissenters did not believe in the authority of the Church of England (Hamilton, 2013). The teacher Reverend Charles Morton had a life-long influence on Defoe (Sutherland, 1950, Sutherland, 1971). Defoe was taught in English when Latin was standard and he learned astronomy, geography and science rather than the orthodox teachings (Sutherland, 1971, Wall, 2008). He intended to become a minister but became a merchant instead (Wall, 2008).

Defoe's marriage to Mary Tuffley in 1684 produced eight children (two sons and six daughters) out of whom two daughters did not survive to adulthood (Earle, 1976, Sutherland, 1950, Sutherland, 1971). The dowry of £3,700, which Mary brought to their marriage, was invested in the import-export business and trade of such commodities as wine, spirits and cloth (Backscheider, 2008). There were long absences from home, including imprisonments during this near fifty-year-long marriage (Earle, 1976).

5.1.2 Undertakings and imprisonments

Sutherland (1950, p45) described Defoe in his early years as ‘...a respectable adventurer, no doubt, dealing for the most part in honest merchandise, but none the less a young man with rather large ideas. Defoe never really changed.’ Defoe undertook a very diverse range of activities throughout his life, including trade, journalism, writing, spying and working as a public servant. He was appointed to the petty jury in 1684 and became a liveryman of the City in 1687, with the right to vote for Lord Mayor, Members of Parliament, etc. (Backscheider, 2008). He had wide business knowledge (Earle, 1976) and engaged in it. Sutherland (1971) points out that Defoe was a partner with brothers Samuel and James Stancliffe in the stocking trade. Defoe owned a home and a warehouse in Freeman’s Yard, Cornhill, where (Backscheider, 2008, p8):

He prospered with his wide selection of stockings of different thickness, lengths, textures, colors, prices, and especially patterns in a time when even the poorer people were beginning to want fashion hosiery.

Although Earle (1976) refers to Defoe as a hosier in Freeman’s Yard, he never liked to be called hosier or apprentice. ‘What he seems to have been was a hose-factor, a merchant dealing upon commission in the stocking trade, a middleman between the manufacturer and the retailer’ (Sutherland, 1950, p28).

Like projectors, Defoe was getting into risky undertakings, such as diving bells, civet cats or lottery ‘adventure’ schemes and a few of them led to imprisonment (Backscheider, 2008). He was involved in trades, where ‘...his main business being the shipment of hosiery to Spain in exchange for wine and brandy, and general cargoes to the American plantations in exchange for tobacco’ (Earle, 1976, pp8-9). One of the ships carrying his investments was captured by a French man-of-war, which resulted in losses and his imprisonment in Fleet Prison in 1692 after a series of citizens’ complaints (Backscheider, 2008). He was bankrupted in 1692, owing £17,000 (Earle, 1976). Frustrated and furious, people accused Defoe of fraud on at least eight occasions between 1688 and 1694 (Sutherland, 1950). Even in the last year of his existence, Defoe was involved in the wholesale merchandise of cheese, wine, anchovies and oysters (Aravamudan, 2008).

The only public servant post Defoe obtained was in 1695-1699 (Sutherland, 1950) as an ‘...accountant to commissioners of the Glass Duty and manager-trustee for the royal lotteries’ (Earle, 1976, p11). Non-public service activities were also well funded and allowed him to pay his debts, and invest in a thriving brick and tile works at Tilbury in Essex, whilst maintaining his desired lifestyle (Earle, 1976). Defoe had expressed that he

employed a hundred poor families in the tile factory with a profit of £600 per year (Sutherland, 1950, p51). He was charged with seditious libel in 1703 and his tile business was neglected throughout this process, which resulted in a second bankruptcy and after that the creditors' claims lasted the rest of his life (Sutherland, 1971). Defoe used to visit Bristol on Sundays, the day when debtors were free from arrest, stylishly dressed and was known as 'Sunday Gentlemen' (Sutherland, 1950). Defoe and William Paterson were co-projectors (Hamilton, 2013). They approached William III with their plan on the colonization of South America (Hamilton & Parker, 2016). However, as Defoe referred in 'An Essay upon Projects', colonization was not a project (see Subsection 5.2.1). Robert Harley, Speaker of the House of Commons, got Defoe out of prison in 1704 (Earle, 1976, Sutherland, 1971) and here started a new chapter in Defoe's life.

Recognizing Defoe's talent, the Secretary of State, Robert Harley, put him on the government's payroll. He used Defoe as a kind of advisor, spy, and as a writer who might, at times, be used to advocate positions that Harley favored (Novak, 2008, p29).

Defoe was a spy and propagandist for Harley, under the name of Andrew Moreton, who reported on the political mood throughout England and promoted the Union of England and Scotland (achieved in 1707) (Sutherland, 1971, Wall, 2008). He helped Harley to become a popular and powerful politician (Earle, 1976). Defoe was also a secret agent for King William from 1697 (Earle, 1976, Wall, 2008). He was a very well-paid journalist and political agent between 1710 and 1714 (Earle, 1976). New technologies in printing and publishing were crucial in Defoe's new profession – journalism (Hamilton and Parker, 2016). Some of his publications were troublesome, such as scandalous political pamphlets in 1713, which led to his arrest in 1714 when he was brought to trial for betraying Whigs and supporting Tory policies in 1715 (Earle, 1976). Defoe ended up in jail three times due to his opinions (Novak, 2008).

It is important to mention, that Defoe took part in partisan polemics. Knights cited Habermas (1989, cited on p2, Knights, 2005), in explaining partisanship, 'who argued for a powerful connection between the political culture of the later Stuart period and the emergence of 'the public sphere', a concept that he explicitly used to tie literary and political debate'. It was very pertinent between 1679 and 1716, when elections were held every two and a half years. Defoe and his contemporaries, including Swift, Addison and Steele, were using their pen for influencing and advising voters. The identity and universality of the Whigs and Tories were shaped by a tactical coordinated exercise of printed polemics. Great writers were employed to carry out this mission. 'Writers played with creating complex and entertaining personas that would please as well as inform the

public' (p5, Knights, 2005). Defoe was also fictionally misrepresenting images of politicians and parties. Criticising language and style of opposing polemic writers was a way of suggesting bad and impolite politics, this is also evident in 'An Essay upon projects' (Defoe, 1697). After the establishment of the Bank of England in 1694, Defoe also was involved in debates over politicized public credit, which was also sensitive to political attacks. His colleagues Swift and Addison were in the same boat and Defoe was a messenger of the public voice, which he then manipulated through his pen.

Defoe wrote most of his full-length books between 1715 and 1731, including 'Robinson Crusoe' (1719), 'Moll Flanders' (1722) and 'Roxana' (1724) (Earle, 1976). Although the London Gazette, a paper of official news, had been in print since 1666, Defoe's mission 'was there to argue about the events of the time – to satirize the wrong view and to assure his readers that his interpretation of events was the proper one' (Novak, 2008, p26). Between 1704-1713 Defoe was publishing his own periodical the Review three times a week (Sutherland, 1971). As Novak (2008, p27) remarks '...it was mainly through prose – through the pamphlet and the newspaper – that Defoe managed to influence his audiences'. Economy, travel, marriage, family, occult and history were amongst many fields of interest for Defoe and were covered in his writings (Earle, 1976).

Defoe traveled extensively throughout England (most intensively when he worked for Harley) and also to France, Holland, Italy and Spain, but there is not enough evidence on his trips beyond Western Europe (Earle, 1976, Richetti, 2005). Many of his writings were inspired by what he saw on those trips and the people he met.

Earle (1976, pp9-10) captured well Defoe's ambition to become a gentleman or raise his social status:

...as a successful author living in a large house set in four acres in Stoke Newington, complete with stables, coach and horses and the rest of the trappings of a least 'middle-class gentility', he might seem to be justified in styling himself gentlemen, as indeed he did.

Amongst his successful and profitable undertakings, Defoe was also involved in risky projects and writings, which had unpleasant consequences. He experienced two bankruptcies, and six imprisonments and pillory stands (Earle, 1976). Defoe died in April 1731 of a lethargy, alone 'at a lodging-house in Ropemaker's Alley', London (Sutherland, 1950, p273). Defoe's writings are read today and Hamilton (2013) emphasized that even today the University of Sussex uses his book 'The Complete English Tradesman' in business studies.

5.2 An Essay upon Projects

The following subsections are informed by Defoe's (1697) 'An Essay upon Projects' only. The first edition of this book was obtained from the Henry E. Huntington Library through an electronic medium. It is a primary source as it is not known whether any manuscript exists for this book. The book has been held at the Huntington Library in San Marino, California since 1918, when it was purchased for \$90 in a Herschel Jones auction at Anderson Galleries, New York by George Smith acting for Henry Huntington (Tabor, 13 December 2016). Prior to this, the book belonged to Maggs who purchased it from a Huth sale in 1912 (Tabor, 13 December 2016). The Huntington library holds a large collection of works from seventeenth-century England. The book itself was 'printed by R. R. for Tho. Cockerill, at the Corner of Warwick-Lane, near Pater – noster – Row. MDCXCVII' (Defoe, 1697).

This section depicts a projector within the seventeenth-century press through Defoe's (1697) 'An Essay upon Projects'. The book was reprinted a number of times reaching a wide audience of readers and therefore shaping public opinion on projectors. The next subsection presents the proposed projects and reveals the author's opinion on projectors.

5.2.1 Defoe's projects in the projecting age

Defoe understood the importance of the history of projects. He wrote (1697, pp19-10):

Invention of Arts with Engines and Handycraft Instruments for their Improvement, requires a Chronology as far back as the Eldest Son of Adam, and has to this day afforded some new Discovery in every Age.

As the title of the book suggests, Defoe proposes a number of projects within 'An Essay upon Projects' (1697), which evolved after rationalizing the war with France. Defoe (1697, piii) also points out that he became part of the projecting humour:

The Losses and Casualties which attend all Trading Nations in the World, when involved in so Cruel a War as this, have reach'd us all, and I am none of the least Sufferers; if this has put me, as well as others, on Inventions and Projects, so much the Subject of this Book, 'tis no more than a proof of the Reason I give for the general Projecting Humour of the Nation.

The proposed projects are in banking, taxation, highways, insurance, friendly societies, pensions, wagering, a fools' house and bankruptcy. Defoe emphasized that all the suggested projects are his ideas despite some of them, such as proposals on seamen and

educating women, already being in the public domain. He did not want to be associated with idea theft and this clash happened only because he kept his ideas to himself for nearly five years. The author assured that his proposed projects did not conflict with any other. Defoe (1697, p1) referred to the period in which he lived as the projecting age and believed that ‘the past Ages have never come up to the degree of Projecting and Inventing...which we see this Age arriv’d to’.

Defoe (1697, p12) also pointed out that there was a lot of cheating and fake discoveries, where inventions and engines were promised to be superior through projects, but when money for their accomplishment was paid in advance, it appeared ‘..that People have been betray’d to part with their Money for Shares in a New-Nothing’. He explained that shares were falling till they reached the point of no value and that he saw shares being ‘blown up by the air of great Words’ (Defoe, 1697, p13). Purchase of these shares led to an undesirable impact on many families. Defoe disclosed the troubled companies: ‘...Linnen – Manufactures, Saltpeter-Works, Copper-Mines, Diving-Engines, Dipping, and the like...’ (Defoe, 1697, p13) and referred to these cheats as ‘Pretenders to New Inventions’ (Defoe, 1697, p14). Contrary to this, he also suggested that there were ‘Inventions upon honest foundations’ (Defoe, 1697, p14), which should be encouraged.

A number of projects proposed by Defoe were supposed to be initiated by the King and funded through taxes. The projects were beneficial to the public and (Defoe, 1697, p11)

...they tend to Improvement of Trade, and Employment of the Poor, and the Circulation and Increase of the publick Stock of the Kingdom; but this is suppos’d of such as are built on the honest Basis of Ingenuity and Improvement; in which, tho’ I’ll allow the Author to aim primarily at his own Advantage, yet with the circumstances of Publick Benefit added.

He suggested that the most thoughtful and successful projects contain two crucial elements, which were the public good and private advantage, and that projects with only a public benefit should be discouraged. Defoe emphasizes that there were no particulars in the book, except where calculations were essential, as he did not want to bore the reader. However, he provided calculations, governance structure, timetables and examples from abroad in support of his project ideas. There was also a short account of the history of projects within the book, suggesting that projects were set to raise money during King Charles I’s reign, which was dominated by monopolies and privy seals. Defoe referred to ‘Projecting Humour’ as dating back to 1680 and contradicted himself by saying that it also was present at the time of the late Civil War. Around the 1680s ‘began the Art and Mystery of Projecting to creep into the World’ (Defoe, 1697, p25). The author points to the Ark built by Noah as the first project he read about:

The Building of Babel was a Right Project; for indeed the true definition of a Project, according to Modern Acceptation, is, as is said before, a vast Undertaking, too big to be manag'd, and therefore likely enough to come to nothing...(Defoe, 1697, p20).

The water supply to London by the New River was mentioned as a perfect project and a considerable undertaking. Defoe also acknowledged French success in projects, however, planting foreign colonies was not a project as it is was prosecution 'of what had been formerly begun' (Defoe, 1697, p29). He explained the stock-jobbing as a trade by exchange brokers who turned the Exchange into gamesters manipulating prices and attracting buyers and sellers, who trust their money '...to the mercy of their Mercenary Tongues' (Defoe, 1697, p30).

The reader was assured by Defoe's (1697, p8) capability to write about the projects by the following statements in the introduction of the book:

Every new Voyage the Merchant contrives, is a Project; and Ships are sent from Port to Port, as Markets and Merchandizes differ, by the help of strange and Universal Intelligence; wherein some are to exquisite, so swift, and so exact, that a Merchant sitting at home in his Counting-house, at once converses with all Parts of the known World. This, and Travel, makes a True-bred Merchant the most Intelligent Man in the World, and consequently the most capable, when urg'd by Necessity, to Contrive new ways to live. And from hence, I humbly conceive, may very properly be deriv'd the Projects, so much the Subject of the present Discourse.

Defoe (1697, pxiv) signed at the end of the preface 'SIR, Your most Obliged, Humble Servant D. F.', which was Daniel Foe. He emphasizes that this publication was an essay and '...any one is at liberty to go on with as they please; for I can promise no Supplement...' (Defoe, 1697, p335). The following subsections present a wide range of projects proposed within the book.

5.2.2 Overview of the proposed projects

Defoe (1697) presented a number of project ideas, a few of which were outlined within the preface of the book with a greater focus on taxation. The overview of his projects presented in this subsection and listed within Table 13 follow the titling of projects as per Defoe's book, except for the title 'Of taxation', which was described in the preface.

Project type	Proposals	Potential outcome/ benefit
Of Taxation	Introduce or review tax: <ul style="list-style-type: none"> • Items • Retailers • Land and Estates 	Increased revenue
Of Banks	Reduce interest rate and increase the Bank of England stock	Increased investment in trade Doubled money through credit
	Various ways of lending money	Benefit trade
	Dedicated office for each type of business management	Easy and speedy execution of business matters
	Fifteen banks in capital towns	Easy transfer of money between these banks
Of the High-Ways	Roads building	New, large, dry, drained, clean, not flooded roads and free from other inconveniences
	Roads taxation	Gathered money for building the roads
Of Assurances	No details as someone else works on it	-
Of Friendly-Societies (a form of insurance)	Seamen (and merchant sailors)	Pension for life or a single payoff after injury
	Widows	Financial support for wife and children after the breadwinner's death
A Pension-Office	Pension (individuals under fifty years old could join)	Free treatment when injured, free prescriptions, free hospitalization, pension for life due to disability, pension for seamen's widows, pension during imprisonment for tradesmen in debt, help when exposed to poverty
Of Wagering	According to Defoe it is a way to take people's money rather than a type of insurance	-
Of Fools	Build a fool house	Place for fools and their maintenance
Of Bankrupts	Law should take into consideration different type of debtors and creditors	Prevention of bankruptcy, enabled recovery of bankrupts
Of Academies	Society judging English language and style	Correct and censored writings
	A Royal Academy for Military Exercise	Built military skills
	Academy for women	Educated women
Of a Court-Merchant	Court for merchants ruled by merchants'-judges	Short, speedy courts with better fees
Of Seamen	Office for listing seamen and assigning their salary, education and tasks	Improved availability and affordability of seamen for merchants and improved seamen service for the King

Table 13. Projects proposed within 'An Essay upon Projects'

Source: Defoe (1697)

Of Taxation

Defoe in the preface of the book outlined a number of potential taxes to increase revenue. One of them was a tax on wares. Defoe suggested that sellers might not even feel taxation since they had the power to reduce the impact of tax by increasing the price of the sale. The retailers of manufactories were another group being proposed for taxation. '...If any shou'd be excus'd, it shou'd be the Poor...' (Defoe, 1697, pvii), who were in low-paid jobs

hardly supporting themselves and yet were taxed. Every man should be taxed according to the value of his estate, which needs to be carried out due to existing fraud in the estate tax.

Of Banks

‘A Bank is only a Great Stock of Money put together, to be employ’d by some of the Subscribers, in the name of the rest, for the Benefit of the Whole’ (Defoe, 1697, p64).

Defoe suggested reducing the interest rate in the banks so that traders could invest more in trade. The existent interest rates offered by banks were not better than at a goldsmith or on Lombard Street. The suggestion was to increase the Bank of England stock to five million pounds sterling, which could double through credit. Other proposals included lending money upon pledges, discount bills, tallies and notes; lending money upon land securities at four per cent interest; foreign exchanges and foreign correspondence; and inland exchanges. The main focus here was on trading. It was suggested that a particular office would be dedicated for each type of business management so that the execution of business matters would be speedy and easy. The operational part of the inland exchanges office was described in detail. The other proposal was for the establishment of fifteen banks within capital towns of the counties with the cashier in London or ‘a general correspondence and credit with the Bank-Royal’ (Defoe, 1697, p62). The function of money transfer between these banks was proposed, so that cash could be obtained in any of the capital towns.

Of the High-Ways

The proposal on highways reflected on the poor state of the roads and the appropriate road tax rates that had been suggested as applying throughout the country. Roads were important for trade and correspondence. They needed to be large, dry, drained, clean, not flooded and free from other inconveniences. The proposal was to build roads over an eight-year period instead of repairing them and roll out the building programme nationally after a pilot project had been undertaken in a single county. This project was presented as benefiting the poor and the country and would be carried out through an Act of Parliament, assuring the satisfaction of the affected landowners. Although at the beginning of the essay Defoe referred to a lack of particulars in his projects, he went into detail on how the roads should be made, their dimensions, the payments involved, etc. Calculations and final sums were provided. Savings on costs were suggested through the employment of prisoners and slaves (Negroes), the involvement of charities, and by purchasing rather than hiring carts and horses. Money for roads was supposed to be raised through tax settled by Parliament, and the rate of some heavily used roads leading to the City of London should be gathered through the City of London.

Of Assurances

In the section on insurance Defoe suggested that someone else already worked on such a project.

Of Friendly-Societies

The next project was on friendly societies, which were a form of insurance (Defoe, 1697, p118):

Another Branch of Ensurance, is by Contribution, or (to borrow the Term from that before-mention'd) Friendly-Societies; which, is in short a Number of People entering into a Mutual Compact to Help one another, in case any Disaster or Distress fall upon them.

Societies were suggested that classified people with similar circumstances into groups; classifications included the likelihood of death, state of their health and the risk involved in their jobs. Two examples of friendly societies were shared in the book.

One of them was for seamen, who were in a high-risk job due to the threats involved, which included a high likelihood of terror at the hands of privateers and their dependence on the weather. In case of an injury, a seaman who served the King should receive a pension for the rest of his life in accordance with the injury. Merchant sailors also needed to be protected as they were at a high risk of injury or death if they fell into the hands of privateers. The proposal was on the establishment of a friendly society for seamen, where each member would pay a fee quarterly and would then receive either a pension for life or a single payoff upon injury. No claims would be accepted for the first six months, and detailed payments for each part of the body were listed.

A friendly society for widows offered support to the wife and children after the death of the breadwinner. Seaman and soldiers' wives could not be part of this society due to the high likelihood of their husbands' death. A six-month no-claim period would apply as well as a 14-day money back period and the subscription would be void in case of falsification of circumstances. Defoe (1697, p142) explained that these are only two examples of friendly societies, but '...the same Thought might be improv'd into Methods that shou'd prevent the General Misery and Poverty of Mankind, and at once secure us against Beggars, Parish-Poor, Alms-Houses, and Hospitals...'.

A Pension-Office

Honest reputable people under fifty years old, except beggars and soldiers, could join a pension fund by paying a six pence joining fee followed by a shilling per quarter. This would cover free treatment after an injury and a free prescription, except under the circumstances of drunkenness and quarrels. The disabled would be either cured or would

receive a pension for life. The widows of seamen, who lost their life at work, would receive a pension. The project proposed a pension for the maintenance of imprisoned debtors, who were broken due to failure in trade or decay. One hundred thousand people should join the pension scheme without claims for a year so that the pension fund would function properly. However, Defoe later suggested that even twenty thousand subscribers would be sufficient. The rationale behind the success of the pension office was provided through various calculations and potential case scenarios.

Of Wagering

Defoe suggested that wagering had become a type of insurance, while in the past it was gaming. Wagering was forbidden during the reign of King James but yet existed in the exchange and coffee-houses, ‘...till the Brokers, those Vermin of Trade, got hold of it, and then particular Offices were set apart for it, and incredible resort thither was to be seen every day’ (Defoe, 1697, p173). Defoe provides an illustration on how the office could always win and argues that this was a way to take people’s money.

Of Fools

Defoe voiced his sympathy to fools or, as he expressed it, naturals, ‘where the soul is dead’ (Defoe, 1697, p179). Care should be taken of these people. This project proposed the building of a fools house by the government, where all fools could be admitted and maintained. The money for this project could be generated through taxing printed books and raising money through a charity lottery. The house should be plain and ‘...out of Town, for the sake of the Air’ (Defoe, 1697, p183).

Of Bankrupts

Bankrupts were doomed to starve or live on charity since no one wanted to pay them wages. As Defoe (1697, p195) expressed ‘to give my Opinion and my Experience in the Methods, Consequences, and Remedies of this law’. The existent law leaves the debtors and their families with nothing and no prospect to be rid of debts for life. Defoe (1697, p206) classified debtors to:

the Honest Debtor, who fails by visible Necessity, Losses, Sickness, Decay of Trade, or the like’ and ‘The Knavish Designing, or Idle, Extravagant Debtor, who fails because either he has run out his Estate in Excesses, or on purpose to cheat and abuse his Creditors.

Creditors were classified as moderate and rigorous severe. The law should be corrected so it would be fit for all these four groups of people and prevent bankruptcy. A court of

enquiries was proposed, and the proceedings of the court and its structure were captured in detail. Procedures protecting the court from false claims were suggested.

Of Academies

Defoe noticed that countries concerned about learning have more academies than England. He suggested that English had the potential to become a universal language in a similar way to French, which was spoken in courts. The proposal was on the establishment of a society, which used correct, polished English and was capable of correcting and censoring writers to perfection and without swearing. They would work as judges of style and language.

The other academy proposed was for military studies. Whilst Defoe (1697, p252) pointed out that peace was cheaper than war, he also observed that ‘...the War is the best Academy in the World, where men study by Necessity, and practice by Force, and both to some purpose, with Duty in the Action, and a Reward in the End...’. The proposal was to establish a Royal Academy for Military Exercise, financed by the public and founded by the King. The academy would be split into four divisions (Defoe, 1697, pp260-262): ‘A College for breeding up of Artists in the useful Practice of all Military Exercises...’, a ‘College for Voluntary Students in the same exercises’, a ‘College for Temporary Study’ and a ‘College, of Schools only’, where their desired exercise would be taught for a payment. Details on the academy building, staff structure, number of students, finance and study subjects were provided.

Another proposed academy was for women. The importance of education for women was emphasized as the way to make them more equal to men. Women should learn to their abilities and there should be at least one academy in every county in England. The ladies would attend the education voluntarily and pay for the house maintenance. They should be taught music, dancing, languages (particularly French and Italian), history and reading in order to make a judgment in conversations and understand the world.

Of a Court-Merchant

Judges in courts did not understand the specifics of a merchant’s business. Constant changes in merchandising circumstances made laws imperfect. A change in the proceedings of the merchant court was proposed, where the six judges ruling the court would be chosen from the best merchants. The courts should become short, speedy and have improved fees. This was a commentary on changes taking in merchant law at that period (Sutherland, 1934).

Of Seamen

War was an issue to the King and trade. The King forced seamen to undertake non-voluntary service during a war, which reduced their availability and increased the cost of their employment to merchants. The proposal was to establish an office, where all seamen were listed, assigned to colleges and paid accordingly to their abilities. The office would assign a particular seaman for a particular duty. The sailors would receive a continuous salary and stay out of other employment. The rules for this setup were also outlined. The King would employ all the seamen in the country and the merchant could hire the seamen from the King. Any losses at sea would be paid for by public stock. Similarly to merchant law this also was a contemporary commentary.

5.2.3 Defoe on projectors

‘An Essay upon Projects’ (Defoe, 1697, p1) was dedicated to the glass commissioner and colleague of Defoe, Dalby Thomas, but the author clarifies that this dedication was not based on a friend’s or colleague’s relationship but rather on the trait of ‘the same ability to evaluate and comprehend projects’. Importantly, Defoe (1697, pii) reassured Mr Dalby, that ‘...Your having a Capacity to Judge of these things, no way brings You under the Despicable Title of a Projector, any more than knowing the Practices and Subtleties of Wicked Men, makes a Man guilty of their Crimes’. Another disassociation with projectors was presented within the highways project section, where Defoe wrote ‘I am nor Proposing this as an Undertaker, or setting a Price to the Publick, for which I will perform it like one of the Projectors I speak of...’ (Defoe, 1697, p74).

Defoe (1697, pxiii) carried on presenting projectors in a pejorative sense, referring to them as ‘...generally to be taken with allowance of one half at least; they always have their mouths full of Millions, and talk big of their own Proposal...’. He (1697, pxiii) disassociated himself from projectors by saying that he could provide calculations and promise a lot, ‘but might easily be made out’. Defoe (1697, p4) continued with his thoughts on projectors:

But I would search for a Cause, from whence it comes to pass that this Age swarms with such a multitude of Projectors more than usual; who besides the Innumerable Conceptions which dye in the bringing forth, and (like Abortions of the Brain) only come into the Air, and dissolve, do really every day produce new Contrivances, Engines, and Projects to get Money, never before thought of ...

Defoe explains that so many projects and projectors emerged in relation to war. Great losses occurred due to ships being overrun by privateers and those losses fell on the shoulders of traders, including merchants and insurers. As a result, numerous people lost their fortunes and their estates and ‘these prompted by Necessity, rack their Wits for New Contrivances, New Inventions, New Trades, Stocks, Projects, and any thing to retrieve the desperate Credit of their fortunes’ (Defoe, 1697, p6). Defoe (1697, p7) suggested that poorer people ‘have not been so fruitful in Inventions and Practices of this nature, their Genius being quite of another strain’.

He dedicated a section for projectors within his book and classified them into two groups: mere projector and honest projector. The former was described as (Defoe, 1697, pp33-34)

a Contemptible thing, driven by his own desperate Fortune to such a Streight, that he must be deliver’d by a Miracle, or Starve; and when he has beat his Brains for some such Miracle in vain, he finds no remedy but to paint up some Bauble or other, as Players make Puppets talk big, to show like a strange thing, and then cry it up for a New Invention, gets a Patent for it, divides it into Shares, and they must be Sold; ways and means are not wanting to Swell the new Whim to a vast Magnitude; Thousands, and Hundreds of thousands are the least of his discourse, and sometimes Millions; till the Ambition of some honest Coxcomb is wheedl’d to part with his Money for it and then the Adventurer is left to carry on the Project, and the Projector laughs at him.

He referred to men who fund projectors as ‘Men who have more Money than Brains’ (Defoe, 1697, p35). The second type of projector was the one,

...who having by fair and plain principles of Sense, Honesty, and Ingenuity, brought any Contrivance to a suitable Perfection, makes out what he pretends to, picks no body’s pocket, puts his Project in Execution, and contents himself with the real Produce, as the profit of his Invention (Defoe, 1697, p35).

Projects were classified very similarly into honest and dishonest projects. Defoe (1697, p33) concluded in terms of mere and honest projectors, that ‘there was always more Geese than Swans’.

5.3 Summary

Whilst Morrell’s (1616) project, explored in the previous chapter, brought insights on projects carried out by a projector. Publication ‘An Essay upon Projects’ by Defoe (1697) was surveyed in this chapter, which when circulated in the seventeenth century shaped readers’ opinions. The culture of projecting was rooted so heavily in the seventeenth century that project proposals were emerging even without ambition to undertake the projects: ‘An Essay upon Projects’ being an example. It enriches previous findings and

adds new insights into the culture of projectors. It is also another great illustration of the diversity of projects proposed by a single person, which was a common feature of projectors' undertakings. Despite bankruptcies, Defoe was an enterprising personality who ran a successful tiles business and published his own newspaper. Defoe was surrounded by influential people. 'An Essay upon Projects' reveals a very modern and visionary person behind the project proposals, who exposes the reader to both desirable and unfavorable projects, and honest and mere projectors.

5.4 Commentary

This chapter adds another layer to previous findings, expanding the understanding of projectors' culture through the eyes of the reading society in the seventeenth century. A number of projects proposed by Defoe echoed with his life choices, events and circumstances, especially in relation to merchants, debtors and bankruptcy (see Table 13 for a summary of projects). Sutherland (1950) noticed that the large-scale road building project emerged from his trips and Defoe was around two hundred years ahead of his time with this project proposal. He also pointed out that Defoe's proposal on bankruptcy was taken on board and the honest bankrupts were treated better, making the bankruptcy process less damaging for creditors. Projects proposed by Defoe fall into two categories: service and infrastructure. Only the project of highways and partially the project of fools have direct tangible outcomes, i.e. actual highways and the fools' house, although in the latter, the objective was the maintenance of fools.

As per Defoe's classification of projectors (see Chapter 6), there were honest and mere projectors, and this theme is still relevant today as equivalents of these projectors can be easily spotted. Although the majority of businesses and entrepreneurs today operate on an honest basis, examples of obvious cheating practices with the intention to profit are constantly discovered. Even well-known and long-standing companies carry out controversial 'projects'. For example, Volkswagen marketed a number of their car models as low emission but in fact installed a device falsifying levels of emissions during tests (Hotten, 2015). This fraud was revealed in 2015 and it was disclosed that 'the engines emitted nitrogen oxide pollutant up to 40 times above what is allowed in the US' (Hotten, 2015). The most disgraceful part of this scandal is that their marketing campaign was built on this audacious and rational fraud. This reduced emissions 'project' had tremendous consequences for nature as well as for customers, competition and even government

finance, since the taxation of cars, at least in the UK, depends on the car's level of CO2 emissions. This is an obvious case of an attempt to profiteer from fraud.

Defoe referred to a project as a large undertaking, which is hard to manage and therefore risks ending in 'nothing'. It combines public good and private benefit and hasn't started yet. Defoe clearly states that colonization is not a project as it already began. This is an interesting view on projects suggesting that a project is what is about to be initiated and it therefore sounds like a project plan only.

Hamilton (2013) pointed out that Defoe was a projector. On one hand he confidently falls within the description but on the other hand it was very unlikely that he wanted to be associated with projectors. His proposed projects were very diverse – a trait very evident within the majority of projectors' work. Defoe was operating as a middleman between the manufacturer and retailer and he had a tile factory which employed the poor (Sutherland, 1950). Also, the projects presented within his book have the following similar characteristics to the projects proposed by projectors: a benefit to society, employment of the poor and public funding. There are many similarities with projectors, however, the references to projectors expressed within 'An Essay upon Projects' hardly suggest that Defoe wanted to be associated with them. This label was presented as unfavorable and even displeasing. Association and disassociation with the title projector are further explored within the next chapter. Controversially, Defoe (1697) referred to men who fund projectors as 'Men who have more Money than Brains' (Defoe, 1697, p35), but contrary to this view, he was also an investor in projects, for example, the South Sea Bubble.

'An Essay upon Projects' presents a picture of the projector to the public; the picture is mostly negative as per evidence within this chapter as well as in Chapters 3 and 6. Defoe also introduced the honest and mere projectors and taught the reader to distinguish one from the other. The representation of the mainly negative image of projectors in 'An Essay upon Projects' must have had an impact on framing public perception of projectors. As per Yamamoto's (2012) findings, when the projector label gained a pejorative meaning, project promoters attempted to disassociate themselves from this label. Disassociation is also present within 'An Essay upon Projects'. Defoe suggests that Mr. Dalby Thomas, to whom the book was dedicated, does not come under the despicable title of projector.

'An Essay upon Projects' confirms Heller's (1999) findings that it became common to communicate profit within the proposals after the 1640s. Defoe expressed that public and private benefits are essential elements of a successful project. Similarly to Morrell (1616), Defoe also promoted his credibility to propose a project. He (1697, p8) referred to the traveled merchant as 'the most Intelligent Man in the World', who is always running

projects as each trip is a project. Projector's credibility was important for projectors in order for them to be taken seriously. Even today investors are looking for 'investable' people with good project ideas rather than just ideas on their own. The next chapter explores the public-private benefit within projectors' undertakings.

Chapter 6. Public-private focus

The public and private benefits associated with projects were one of the key characteristics of projectors' schemes. This chapter presents the public-private interest in the projectors' activities through analysis of five PhD theses on projectors. These scholars took very different approaches to directly or indirectly presenting this matter and therefore fresh insights can be obtained by reviewing their research.

This chapter illustrates a broad range of private and public benefits within projects. Amongst the public interest is increasing revenue, employment of prisoners and the poor, teaching the poor various skills and improved infrastructure, while private interest covers a percentage from profit, payment to recompense the effort, the annual payment to the projector and free or cheap labour. It is important to mention the instant private benefit attached to monopolies. According to Yamamoto (2009), the practice of monopolies included collection of fines, expelling competitors from business and imposing fees. These practices created an environment without competition or at least unequal competition, leading to potentially super-normal profits. Therefore a monopoly is directly related to private interest with generous profits in the event of success or an intention for profit in the event of failure of the project.

Projectors frequently acted on behalf of the real inventors and the acquired profits were shared between the projector and the inventor (Yamamoto, 2009). Projects holding monopoly rights were seen as corrupt as they made consumers suffer exaggerated prices (Heller, 1999). Controversially, it was not unusual for Members of Parliament (MPs) to be engaged in monopolies and only after the Commons decision in 1641, were MPs with such a clash of interest expelled from Parliament (Commons Journals, cited in Yamamoto, 2009, p228):

That all Projectors and Monopolists whatsoever; or that have any Share, or lately have had any Share, in any Monopolies; or that do receive, or lately have received, any Benefit from any Monopoly or Project; or that have procured any Warrant or Command, for the Restraint or Molesting of any that have refused to conform themselves to any such Proclamations or Projects; are disabled, by Order of this House, to sit here in this House: And if any Man here knows any Monopolist, that he shall nominate him:...

This chapter unfolds a tight link between the public-private interest and financing of the project and reveals the importance of influential contacts in projectors' activities. It illuminates how, due to norms within society, profit in projects was either not

communicated or presented carefully in the seventeenth century, particularly in the first half of the century. Furthermore, the impact of projector stereotypes with regards to projects is highlighted.

Sections within this chapter are presented thematically and chronologically. The first section is a brief introduction to the PhD theses surveyed within the chapter, followed by a section exploring acceptability of profit informed by the norms of society and a section on changes in financing projects within the seventeenth century. Further sections provide the backgrounds of the projectors and the role of influential people in their undertakings, examples of projects with public-private benefit and the projector's role as a middleman.

6.1 A brief summary of the PhD theses examined

This section is an introduction to the theses explored in this chapter and presented in Table 14. These were the only theses the researcher encountered on projectors. They are the work of researchers based within different faculties of universities, suggesting the relevance of projectors' work to multiple disciplines. Public and private interest in these theses is both implicit and explicit. Yamamoto's (2009) and Heller's (1999) theses explicitly explore public-private interest within projectors' work and provide examples of projectors or projector-like undertakings, while the theses of Thomas (1979), Roberts (2012) and Hamilton (2013) are dedicated to particular projectors with public-private benefit presented implicitly. A brief introduction to each thesis is provided below.

Name	Title	Time period within the seventeenth century	University	Department/School/Faculty	Year
Rebecca Jane Roberts	Two Meane Fellows Grand Projectors: The Self-Projection of Sir Arthur Ingram And Lionel Cranfield, Earl Of Middlesex, 1600-1645, with Particular Reference to their Houses	First half	Teesside University	-	2012
James Harry Thomas	Thomas Neale, A Seventeenth-Century Projector	Second half	University of Southampton	Arts History	1979
Valerie Hamilton	Moll Flanders and The Old Lady of Threadneedle Street: Projects of a Projecting Age.	Second half	University Of Warwick	Business	2013
Samantha Lynn Heller	Poets and Projectors: Profit, Production, and Economic Paradigms in Early Modern England	Throughout the century	Columbia University	Arts and Sciences	1999
Koji Yamamoto	Distrust, Innovations, and Public Service: 'Projecting' in Seventeenth – and Early Eighteenth – Century England	Throughout the century	University Of York	History	2009

Table 14. PhD theses on projectors

The main focus of Roberts' (2012) thesis 'Two Meane Fellows Grand Projectors': The Self-Projection of Sir Arthur Ingram And Lionel Cranfield, Earl Of Middlesex, 1600-1645, with Particular Reference to their Houses' is on the estates these projectors owned, and their self-projection and social status within society. Whilst the thesis title suggests that the research is on projectors, there is a poor reflection on this subject within the thesis as only a few sentences are dedicated to explaining it. The author hints that the 'meane projectors' label was chosen quoting Weldon's writings about these projectors in 1651 and that it had a negative connotation. However, there is no deeper assessment of projectors' culture or explanation on what reasons lie behind the pejorative connotation of the word 'projector'. The extraordinary label used within the title of the thesis needs further explanation. The researcher did not directly explore Arthur Ingram's and Lionel Cranfield's public and private interest but a number of disclosed facts do illustrate this aspect within their projects, especially in relation to their official posts. Also, there is no explicit reference by the author to the projects, which potentially placed Ingram and Cranfield under the title of the projector, however monopolies may be confidently assumed.

The PhD thesis 'Thomas Neale, a Seventeenth-Century Projector' by Thomas (1979) reveals the life of this projector and his involvement in a wide range of projects. Although projects, which placed Neale under the name of projector were not explicitly specified, a number of them were in line with projectors' undertakings as defined elsewhere within this thesis. In fact, Thomas (1979, p296) refers to Neale's projecting activities as 'his career as projector', which is an interesting angle from which to look at the projector.

Hamilton (2013) within her PhD thesis 'Moll Flanders and the Old Lady of Threadneedle Street: Projects of Projecting Age' explores a novel, 'Moll Flanders' by projector Daniel Defoe, and an organization, the Bank of England by projector William Paterson. She argues that they both 'share fundamental characteristics of form, function and technique: they work in the same way' (Hamilton, 2013, p7) and that with regard to projects, 'the space of composition', the period from which they emerged, sometimes called the Age of Projects (1680-1720), is inherent in, and inherited by the form of the novel and the organization respectively. They are projects of a projecting age' (Hamilton, 2013, p7). While this thesis is about two projectors, the use of this label within the thesis is puzzling. One of the examples is a title of a section as follows: 'Moll and Myself as projectors after Defoe and Paterson' (Hamilton, 2013, p161). Projector within her thesis is understood to be a synonym for an entrepreneur (see commentary within this chapter for further discussion of this choice).

The PhD thesis 'Poets and Projectors: Profit, Production, and Economic Paradigms in Early Modern England' by Heller (1999, abstract) investigates 'the impact of 'projects', schemes and proposals to improve and capitalize on the material world, which began to proliferate in sixteenth and seventeenth century England'. She explicitly explores public and private interest in her thesis. Heller (1999, p218) '... argued that promoters of economic innovations and improvement tried to avoid being perceived as 'projectors', and that those who failed to do so were probably less likely to win the support they needed'.

The last PhD thesis explored in this chapter is 'Distrust, Innovations, and Public Service: 'Projecting' in Seventeenth- and Early Eighteenth-Century England' by Yamamoto (2009). This thesis is a robust account presenting projecting culture with a focus on public service, projectors' distrust and religious rhetoric within projects. Although the label of projector is examined within the thesis, projects of projector-like promoters, who disassociate themselves from projectors, are also presented. Similar to the argument within the commentary of this chapter, association or disassociation with the title 'projector' does not necessarily make a difference to how that person is called by others. Projector or non-

projector is contingent upon self-identification. The following section explores change in communicating profits in projects' proposals through the seventeenth century.

6.2 Profit within proposals of projectors

The communication of private gain within projects changed during the seventeenth century. The reasons behind this change are explored in this section. Yamamoto (2009) suggests that profits obtained by projectors were not always negatively understood and presented; even Queen Elizabeth expressed that such profits were lawful rewards for the work of projectors and were deserved as long as those projects served for public good. Heller (1999) argues that profit was a sin in a Christian principles-based medieval economy and this understanding limited commercial opportunities. Projectors were perceived as greedy and selfish fraudsters. However, profit became presented in a neutral manner and associated with public good in the seventeenth century. Personal interest was embraced in the 1640s. At the same time monopolies were linked to corruption and projectors involved in monopolies were associated with greedy personal gain. Projectors were trying to downplay their desire for profit in their writings mainly due to the central role of religion in society with greed being linked to sin. Negative references to monopolies combined with the social benefit of projects became a common practice when writing proposals in order to mask self-interest.

The status of projects was revisited in the middle of the seventeenth century, when the Civil War took place and the political situation changed (Heller, 1999). 'The Long Parliament showed a legislative commitment to ending monopolies, following up on earlier rulings, like that from 1621, which "expelled" monopolists from Commons' (Heller, 1999, pp190-191). Samuel Hartlib and his associates were proposing regulation of private interest

...projects were institutionalized, made a part of the national program and envisioned as part of the national future by a group of latter-day projectors and writers, many of whom were associated with the writer Samuel Hartlib (Heller, 1999, p19).

The intention of Hartlib and his associates was to lead England to economic prosperity. Promoters linked to this circle disassociated themselves from profits and the label 'projector' (Yamamoto, 2009). '...Hartlib and other promoters in the mid-century, even these more successful promoters could be laughed at and dismissed as 'projectors'' (Yamamoto, 2009, p163). They proposed a number of projects, where private profit and

effective production were interrelated with the role of profit couched with reservations (Heller, 1999).

Yet the economic doctrine of personal interest—the values fostered in the Hartlib circle—did not disappear with the arrival of Charles II; instead, the encouragement of personal interest and of production became part of the platform of many former Parliamentarians (Heller, 1999, p227).

Private interest was secured through patents and printed projects (Heller, 1999). Printed proposals disclosing limited details on a project in order to protect the invention was an approach to claim the rewards, promote the project, and attract sponsors and investors as well as clients. It was an advertisement of the projectors' skills.

These stories show that the self-promotional claims of the projectors were believed and bought in the service of others' self-interests: someone purchased Vaughan's book; King James listened to and invested in Sturtevant's project; Arthur Blackamore believed in and paid for the power of Hugh Platt's secrets (Heller, 1999, p75).

Written project proposals by Vaughan, Sturtevant and Platt, who were associated with the Hartlib circle, are presented later within this section. These discourses helped to bring to light issues, which projectors experienced with regards to expressing their interest in profit. Due to these writings, private interest linked to public benefit in proposals became the norm. However, this change led projects into a massive controversy.

A hunger for personal profit was mixed with the benefit for the nation and was encouraged by the political economy (Heller, 1999). The attainment of profit through praising the general good and promoting efficiency became norms widely communicated in project proposals.

The projects begin to lay out tentative equations, linking the employment and training of these working bodies to national prosperity. As unlimited production is imagined to lead to an unparalleled national prosperity, personal interest became seen both as a plausible means of encouraging English laborers and the English poor to work their hardest, and as a means of justifying entrepreneurial activity; in this way, the power of self-interest began to take hold of English imaginations (Heller, 1999, p16).

The word 'commonwealth' was common and associated with help for the troubled poor in the late sixteenth century (Heller, 1999). 'Common weal' was used in local politics till Kentish rebels used the title at Cade Revolt in 1451 when it was picked up in national and parliamentary politics. The 'Commonwealth' title came into use in 1580s and meant 'country' and 'nation' in a broad sense until the end of the sixteenth century and 'the public' by the mid seventeenth century. It was in constant use after King Charles I's beheading, when 'free-state' was established. 'Commonwealth' in early modern history was closest to meaning 'society' in the twenty first century (Withington, 2010). 'It evoked in the most general way the collective resources, institutions, and well-being (or 'weal') of

local and national communities; and it described the manner in which those resources were, or should be governed' (Withington, 2010, pp136-137).

At the time when personal interest was expressed within the proposals in reference to national good,

...the projectors could not control contemporary representations of their endeavors. Project rhetoric did not remain safely inscribed in their own controlled venues, but, instead, became fodder for the pens of other kinds of writers, including poets, philosophers and playwrights (Heller, 1999, pp78-79).

Heller (1999) highlights the changing perception of profit in medieval and early modern England. This change was reflected in the projectors' proposals. While private gain was a sin in medieval understanding, it became communicated and accepted in the seventeenth century. The following section exposes changes in the financing of projects within the seventeenth century and the reasons behind them as explored by Yamamoto (2009).

6.3 Changes in projects financing

Not only acceptability of private benefit within projects but also their financing changed in the seventeenth century. Yamamoto (2009) highlights that the element of public benefit expressed through titles such as 'commonweal', 'commonwealth' or 'public good' emerged in the mid-sixteenth century due to Renaissance humanism. Promoters were in constant competition over the patronage of their projects. The element of Christian humanism appealed to investors and the motivation behind these projects involved both public and private interest.

The common element of public good through employing the poor alluded to schemes being more acceptable overall (Yamamoto, 2009). Employment of the poor within economic innovations and improvement schemes was a common claim in late medieval, Tudor and early Stuart periods. Yamamoto (2009, p87) suggests the 'characteristics of projecting culture: contribution to public finance, employment of the poor, and the justification of both, as godly public service'.

Project finance was shifting from monopoly grants (government funding) in the first half and middle of the seventeenth century to joint-stock companies (public subscription) from the early 1690s (Yamamoto, 2009). However, joint stock companies date back to at least sixteenth century (see Subsections 3.3.1 and 3.4.2). Abuse of political authority through monopolies in projectors' undertakings was masked by benefit to the public during the Stuart reign. It led to negative stereotypes of projectors. This image was popularized in

pamphlets and transformed with changes in the way in which projects were financed. The stereotype of projectors in relation to privileges provided by monopolies, became irrelevant in the middle of the seventeenth century as the granting of monopolies was very difficult to obtain. The pejorative title of the projector during the stock-jobbing period did remain but was increasingly associated with businessmen, who were perceived as cheating innocent investors. Enormous manipulation of information was a strong characteristic of joint-stock companies since it influenced fluctuations in the stock price. The value of stocks was rarely in line with reality and projector stereotype became closely related to this aspect of projects.

Yamamoto (2009, p18) observed, that a number of historians

...took the negative stereotype of the destructive 'projector' at face value, and interpreted the projectors' demise as a step towards economic modernity. Others, by contrast, portrayed schemes for economic innovations as the precursors of modern capitalism.

Before moving onto the examples of public-private benefit within the projects of projectors or projector-like promoters, their background and influential contacts are presented within the following section.

6.4 The background of projectors and their influential contacts

This section introduces projectors or projector-like promoters and the importance of influential contacts within their undertakings. The first two projectors presented in the following subsection are Ingram and Cranfield explored within Roberts' (2012) PhD thesis.

6.4.1 Projectors Arthur Ingram and Lionel Cranfield

This subsection is informed by Roberts' (2012) PhD thesis and presents the background of projectors Arthur Ingram and Lionel Cranfield as well as the importance of influential people in their undertakings. Projectors Ingram and Cranfield were involved in business and worked in court (Roberts, 2012). They were knighted in 1613. Ingram became a Controller of the Port of London for life in the 1600s. Cranfield held posts of Master of Request (1617), Master of the Wardrobe (1618), Master of the Court of Wards (1619) and Lord Treasurer to James I (1621-1624). He became Baron Cranfield in 1621 and Earl of

Middlesex in 1622. Cranfield experienced imprisonment; he also ended his career in Parliament due to bribery and corruption in 1624. Ingram served less than a year as Cofferer of the King's Household in 1615 before becoming 'a member of Council of the North and sheriff of the county' (Roberts, 2012, p26). Both projectors were involved in the buying and selling of customs farms (Roberts, 2012) (which is the lease out of 'the administration of Custom dues in return for an annual rent' (Trueman, 2016)). They were purchasing estates as business investments and also acquiring and subletting houses. Their involvement in the sale of Crown lands was very profitable. The distinctive feature of these two men was their interest in estates and acquisition of estates through the manipulation of gentlemen's debts. One of the examples is related to Charles Howard, Earl of Nottingham, and his son William, Lord Effingham, who were involved in a farm lease with Ingram and Cranfield, and they borrowed money from these projectors. Due to large debts, William ended up passing his Donnington Castle to Cranfield. In a similar way, a few other debtors lost their land or buildings to these projectors.

Ingram and Cranfield were involved in very profitable trading. The money they gathered was invested in future ventures. Both projectors were involved in a number joint projects, including 'the export of iron ordnance, the farming of the Irish customs, the farming of dye-woods, the farming of tobacco, securing a monopoly on domestic starch production from bran instead of wheat, the purchase and sale of crown lands and leasing the right to sell wine licences' (Roberts, 2012, p25).

Ingrams and Cranfield were surrounded by influential people and their role was very important in these projectors' undertakings. Amongst influential people were: Robert Cecil, Earl of Salisbury; Thomas Howard, Earl of Suffolk; Henry Howard, Earl of Northampton; and George Villiers, Duke of Buckingham. Cecil is illustrative of such interrelationships (Roberts, 2012). The projectors were involved in a venture with Cecil and another partner William Massam, with regards to selling spices and silks in 1602. Cecil was an important connection to court, and Ingram, as a middleman, dealt with Cecil in securing various deals and he also was a link between the Court and City. He helped Cecil to 'secure a higher lease for both the farm of the silk duties and the great farm of the customs by setting up rival syndicates to bid against other groups of merchants for the farms' (Roberts, 2012, p53). Cecil in return increased Ingram's salary as Controller of the Port of London, helped him to get into Parliament in 1610 and safeguarded the alum (the mineral (Turton, 1938)) industry that Ingram managed till 1625.

Thomas Howard, Earl of Suffolk, the nephew of Henry Howard, sublet a farm of currant duties to Ingram and Cranfield (Roberts, 2012). He helped Ingram with a petition 'for the

alum industry to be put under royal control and helped secure the management of the alum farm...in 1615' (Roberts, 2012, p57). Howard's influence secured '£10000 out of the Exchequer for the running the farm but, in 1617, canceled Ingram's debt of £12340 which he owned to the crown under the penalty clause that the works had not produced the full quota of alum' (Roberts, 2012, p57). The alum farm was gaining government support and most likely it was a monopoly. This is another example of getting around assigned charges and securing funding through influential contacts.

Thomas Howard's

trial in 1619 included charges which referred to the alum business and another transaction which concerned Ingram whereby he had colluded with the treasurer to force Sir David Murray to sell his privy seal (which authorized payment to him from the exchequer) to Ingram [and Howard] which was of great profit to him... (Roberts, 2012, p57).

Howard was strongly affected by the trial, while Ingram did not experience significant consequences, supposedly due to his connection with Cranfield, who later became Duke of Buckingham.

Ingram and Cranfield met their influential connections within courts, Parliament, in clubs (Mitre club, Mermaid club), through gambling and card games (Roberts, 2012). These important contacts built bridges to new opportunities. This circle of contacts even expanded to their family members. Ingram developed a good relationship with Henry Ritch, Earl of Holland, whose son later married his granddaughter. Ingram's son Arthur married Eleanor Slingsby, daughter of gentlemen Sir Henry Slingsby. The other son Thomas married Frances Bellasis, daughter of Lord Fauconberg. His daughter, Elizabeth, married Sir Simon Bennet, a wealthy gentleman connected with University College, Oxford. Cranfield's sister Martha married John Suckling, Secretary to the Lord Treasurer Thomas Sackville, Earl of Dorset. Cranfield's sister-in-law, Margaret Sheppard married Exchequer official Henry Osborne. Cranfield's daughter Martha, married Henry Carey, who later became the Earl of Monmouth. His other daughter Elizabeth married Edmund Sheffield, grandson of the Earl of Mulgrave. The Earl of Mulgrave participated in the alum industry with Cranfield. Cranfield's daughter Frances married Richard Sackville, Lord Buckhurst, the heir of the Earl of Dorset. Cranfield married Anne Brett, cousin of the Duke of Buckingham, who was favoured by the King.

Ingram and Cranfield were involved in multiple activities, which benefited their private interest (explored later in Subsection 6.5.1). These situations occurred through their role as projectors, through public service roles and in many cases when combining both these roles together. The influential contacts helped projectors to obtain positions within court

and Parliament as a return of favour. The alum industry example highlights the importance of contacts from obtaining this industry to securing funds and clearing related debts. The following subsection introduces the background of projector Neale as well as his influential circle.

6.4.2 Projector Thomas Neale

This subsection is based on Thomas' (1979) PhD thesis. The background of projector Thomas Neale and the influential circle surrounding him is presented. A number of the projects undertaken by Neale were successful, others were failures and the rest just his aspirations. Amongst his undertakings were dredging, exchequer bills, fishing, land draining, salt duty, street lighting, multiple projects in lotteries, production processes, wreck recovery, property development, promoting financial innovations, mining, gaming, postal services, verdigris manufacture, tapestry corporation, brass plates for kettles, Corinthian steel, imitating Russian leather; making white, brown and blue paper without rags; soldering and joining glass, lead casting, treasury hunting, making wire screens and making cloth. Only projects with potential evidence of public-private interest are explored in this chapter.

Neale held a number of public servant positions, which helped with his projecting activities. He was appointed 'to the commission to look into Mint abuses and irregularities' in 1677 (Thomas, 1979, p220) and became a Master of the Mint between 1686 and 1699. 'He gained access to the Mint by a combination of experience, influence, royal patronage and money' (Thomas, 1979, p220). Neale became a Groom Porter (responsibilities of this post include 'Inspection of the King's Lodgings, and takes care that they are provided with Tables, Chairs, Firing' as well as 'provide Cards, Dice' and 'when there is playing at Court: To decide Disputes which arise in Gaming' (Bucholz, 2006)) for life in 1678 with an annual pension of five hundred pounds. Post-1688 he was a member of 73 committees, with the highest interest in land ownership, bankruptcy, social policy, the poor and mint matters. He was a firm Whig from 1696. Neale was also a Master of the Transfer Office. He was so well connected in the last ten years of his life that he became a well-known public figure. 'From his safe vantage point he launched himself upon a career of promoting projects' (Thomas, 1979, p343), acting as a middleman. Neale's motivation for undertaking projects was financial.

Creditors financed the majority of Neale's projects but not all of them regained their money (Thomas, 1979). Between 1691 and 1693 Neale handled six to ten projects per year.

The bulk concerned mineral processing and production, and were concentrated in a two year period from August 1691 onwards. That Neale rarely worked alone on these projects strengthens the view that he was engaged as broker or middleman for promoting. With Court contacts, high office and powerful friends, he epitomized the 'respectable' agent, the very man who could perhaps secure for interested parties what they wanted. In an age when contact counted much, Neale was well placed to argue the case of such projects (Thomas, 1979, p311).

As mentioned in the first section of this chapter, Neale held a number of public servant positions. These positions opened the doors to powerful contacts amongst which was even King William III. Neale received a '£10,000 reward from William III in 1690' (Thomas, 1979, p327). The King also intervened in the Seven Dials project (presented within the next section). Neale tried to obtain the lease for the project for more than two years and it was 'halted only by William III's personal intervention and his announcement that he wished Neale to have the lease' (Thomas, 1979, p293).

Thomas (1979) highlighted that Neale's contacts, associates and financing were important elements of his project. Neale was a very persuasive and successful borrower, but part of the loans he never repaid. 'Safety and silvery tongue opened to Neale many doors barred to others' (Thomas, 1979, p318). It is doubtful that early projects were profitable. Prior to 1688 Neale was borrowing from many creditors, whilst afterwards he had a few creditors with large borrowings. A £5000 loan was raised from William III for an unknown reason as well as the previously mentioned examples in relation to the King, illustrating his continuing relationship with the monarch. 'Friend of two monarchs, he also consorted with leading politicians, merchant princes, factors and artisans. To many he became indispensable' (Thomas, 1979, p343).

Neale became a very influential person and 'during his last ten years he was a well known public figure, driven on by the desire to win' (Thomas, 1979, p338). Competitions for grants were fierce and powerful and backing was important to the successful presentation of projects. As Thomas (1979) observed, Neale's name was behind a number of patents due to his influential connections, which could lead to the project being granted.

Neale worked with a large number of associates 'drawn from all walks of life and levels of society' (Thomas, 1979, p315). The same people were present in a number of projects with Neale meeting such powerful people through various channels including via people he already knew, posts he held, the Royal Household and the Royal Society.

Neale was involved in an extraordinary number of projects, part of them he carried out and on the rest he acted as a middleman. His knowledge gained in government positions, friendship with powerful people and projectors as well as artisans allowed him to build a career as a middleman. His credentials obtained through holding important positions within government and courts as well as his convincing personality provided opportunities for new ventures. The circle of powerful people, including the King, gathered by Neale throughout the years enabled such undertakings. The following subsection presents the background of projector William Paterson.

6.4.3 Projector William Paterson

This subsection is based on Hamilton's (2013) PhD thesis in which projector William Paterson is presented. Paterson is best known as the projector behind the development of the Bank of England (Hamilton, 2013). He was also involved in a number of other significant projects, mentioned later within this subsection. Paterson was arrogant, confident and opinionated, just like his friend and co-projector Daniel Defoe, featured in Chapter 5. They both approached King William III with their project to colonize parts of South America. Paterson was an advisor to William III and was involved in building the Union of England and Scotland. He sailed and traded in the West Indies and South America and was talented in accounting.

Coffee houses were frequently visited by Paterson, where he was likely to meet co-projectors of his future projects like Sir John Trenchard, who was involved in a project on clean water supply for London from Hampstead Heath (Hamilton, 2013). Paterson became a respected projector with the establishment of the Hampstead Water Company. As a projector he also gathered people interested in the establishment of a bank in one of the coffee houses in London and recruited experienced co-projector Sir William Phips. Many people Paterson knew were familiar to Defoe as well. According to the Bank of England website cited by Hamilton (2013, p115), 'Paterson is recognised as 'the projector of the Bank of England' by pamphleteers of the period'.

The biggest project Paterson undertook was the Darien expedition, which involved the colonization of lands (currently known as Panama) and establishing a trade point there (Hamilton, 2013). This project was under Scotland's flag and not supported by England. It was a very unsuccessful project, with many lives lost due to illnesses, including Paterson's second wife and his child. Paterson himself was taken home very ill. 'The venture virtually

bankrupted Scotland and so facilitated the Union of England and Scotland in 1707; Paterson was one of the chief negotiators of the Union' (Hamilton, 2013, p158). Paterson was part of a number of large projects and involved other projectors in his undertakings, suggesting that the people surrounding him were vital to his projects.

6.4.4 Other projectors

The remaining projectors, whose project proposals are also presented within the following section are featured in Heller's (1999) and Yamamoto's (2009) PhD theses. They took the approach of providing multiple examples of projects by different projectors and therefore the background of those projectors is not as extensive as in other theses, thus is not presented within this section.

A number of projectors were wealthy or at least financially secure and frequently well connected, which led to their ability to borrow money and receive investment (Heller, 1999). Francis Bacon supported large projects and also patents for inventors. He even invested in a number of projects, including colonial schemes, like the Virginia Company. One of his endorsed projects was the Cockayne project, which proposed dyeing and dressing weaved cloth in England, rather than outsourcing this service from the Dutch. Unfortunately, this project backfired as the Dutch started weaving their own cloth. Bacon was positioning himself as a projector when writing a letter to King James and asking for his support for this project. He suggested that the project was for the public good and although he reflected on profit in a very subtle manner within his letter, it was justified as a reasonable motive for the project to go ahead. This is a great example of a powerful person's importance within the projectors' undertakings. The following section uncovers public-private benefit within the project proposals by projectors.

6.5 Public-private benefit within projects

This section reveals public-private interest within projects proposals of projectors or projector-like promoters presented within the PhD theses explored in this chapter. Only selected projects revealing private interest are incorporated within this chapter, irrespective of the outcome of the project. The intention is to highlight successful, failed or never commenced projects so as to understand the overall picture of public-private interest.

Projectors or projector-like promoters linked to the Hartlib circle were surveyed by Yamamoto (2009) and presented later within this section. They were trying to find a middle ground between public and private interest. These projector-like promoters were managing distrust through openly claiming private benefits of their projects or demonstrating no interest in it. A number of the projects, which have been presented here, satisfied both public and private interest.

The list of projects presented within the following subsections is outlined in Table 15. Since public benefit was disclosed with the project plans of projectors as standard, it is excluded from the table. The private benefit obtained from projects was not always very conventional, as per the example of Ingram's marriage listed within Table 15.

Author	Projector/s and projector-like promoters	Projects	Private interest
Roberts (2012)	Ingram and Cranfield	Domestic starch production	Benefits potentially linked to monopoly Posts in Court Positions within Parliament Cranfield meeting the King (top-level connection) Ingram's marriage to daughter of indebted partner to clear debts
		Alum farm	Benefits potentially linked to monopoly
Thomas (1979)	Thomas Neale	Shadwell development	Rent income
		Mine-draining pump	Position in parliamentary committee
		Ballast shore at Jarrow Slake	Not specified but expressed by projector
		Tunbridge Wells development	Rent and sale of accommodation
		Lotteries	Ten per cent of sale Lottery prize
		Postal service	In relation to monopoly
		Seven Dials development	Rent and sale of accommodation
Hamilton (2013)	William Paterson	Bank of England	Compensation for serving the country
Heller (1999)	Hugh Platt	Various writings	Profit
	Rowland Vaughan	Flood control and increase in agricultural yields	Profit
	Simon Sturtevant	Sea coal and pit coal production	Profit
Yamamoto (2009)	Cressy Dymock	Cultivation	Payment, food daily, half the difference in yields and keeping his invention
	Peter Le Pruvost	Colonial plantation, husbandry and fishery	Profit
	Gabriel Plattes	Agricultural tracts	'Being redound to the Readers'
	Walter Blith	Husbandry	No private interest
	Andrew Yarranton	Stour navigation scheme	Benefits potentially linked to monopoly
	Humphrey Mackworth	Mining company Lottery (under mining company) Bank (under mining company)	Profit

Table 15. Private benefit within the projects of projectors presented in the PhD theses

6.5.1 Arthur Ingram's and Lionel Cranfield's projects

This subsection is informed by Roberts (2012) PhD thesis. Monopolies of domestic starch production (which failed) and an alum farm most likely placed Ingram and Cranfield under the title of projector. The evidence is limited in regard to monopolies, but the 'shadowy' side of these projects suggests an involvement of private and public interest on a number of occasions. The following situation is one example: Henry Howard, Earl of Northampton, sublet his starch farm to Ingram and Cranfield in 1608; Howard was a leading figure at court and helped these projectors to get to court shortly after Cranfield attained some Crown lands for Howard in 1611. He also helped with securing the seats in Parliament for both projectors. Cranfield even met the King (James I) through Howard in 1612.

Another example is related to the starch monopoly, where their partner Sir Edward Greville became indebted after the collapse of the monopoly. There are no facts on benefitting from the government through this scheme, although, as explained in the opening of this chapter, profits could have been gained in relation to the monopoly. An astonishing, and to modern eyes ethically suspect, private interest obtained by Ingram was an agreement with Greville to marry his daughter Mary in order to clear her father's debts.

A further public and private interest clash for both projectors was in relation to Ingram's and Cranfield's official posts. Both projectors and their friend Christopher Brooke were advocating home dress industries and filed the bills in 1614 and in 1621 attempting to ban transportation of foreign dresses.

In the Addled Parliament of 1614 Cranfield agreed with Brooke and proposed impositions on foreign cloth, yet just a few years earlier his trade in English broad cloths relied on English demand for the continental cloth he brought back from Germany. He also bought continental materials and clothes himself, despite trying to regulate the balance of trade in an official capacity (Roberts, 2012, p85).

Another example was Ingram's support through £100 given to Sir James Graham from the King's Privy Chamber, which 'secured Ingram's and Cranfield's advancement at court and the means of election to Parliament' (Roberts, 2012, p26).

6.5.2 Thomas Neale's projects

This subsection is based on Thomas' (1979) PhD thesis. Neale was involved in a large number of projects and those projects, which benefited the public with obvious personal gain, are listed in Table 16. Thomas (1979) acknowledges that only a fraction is known

about some of the projects and the outcomes remain mostly unknown. The details of these projects are provided in this subsection.

Project	Public benefit	Private benefit
Shadwell development	Water supply New homes Public facilities	Rent income
Mine-draining pump	Unknown	Position in parliamentary committee
Ballast shore at Jarrow Slake	Water infrastructure	Not specified but expressed by projector
Tunbridge Wells development	Infrastructure Accommodation	Rent and sale of accommodation
Lotteries	Investment	Ten per cent of sale Lottery prize
Postal service	Service infrastructure	In relation to monopoly
Seven Dials development	Accommodation Infrastructure	Rent and sale of accommodation

Table 16. Public and private benefit in Neale's projects

Shadwell development

The Shadwell development project emerged after the Great Fire (1666) due to a need for accommodation. Neale leased land and amenities in Shadwell from Dean Sancroft in 1669. They jointly turned Shadwell into a separate parish with Shadwell society benefitting from the water supply. Neale applied for a charter to raise money for waterworks (£20,000) offering 36 shares. This application was approved after five years, in 1692. Built homes, brew houses, malt lofts, a market and storage facilities completed Shadwell's development in 1676. Neale rented the Shadwell development to a number of investors. 'In late December 1682 Neale and his wife reserved to themselves the 'several rents of Shadwell' totaling £57 10s. annually...' (Thomas, 1979, p130). Neale intended to change Shadwell's estate status from leasehold to freehold, but the Dean opposed it fearing that the church would be blamed for seeking private advantage and the leasehold status remained. 'The project repeatedly involved considerable expenditure and protracted negotiations with official bodies. The advantages offered were new homes, a lifeline to the Thames and public facilities, such as market house and waterworks' (Thomas, 1979, p135). The Shadwell development is an example of a project combining public benefit through the availability of housing and improved infrastructure and a tangible private benefit through renting homes and facilities. In parallel to Shadwell's project, Neale was working on shipping and mining projects.

Mine-draining pump

Another project with potential public-private benefit was a patent for the mine-draining pump which was granted to Neale in 1675 with 'exclusive 'use, practice and exercise' of the invention' (Thomas, 1979, p137). There is no evidence of using this patented pump, but Neale 'was appointed to a parliamentary committee considering pumps in 1677' (Thomas, 1979, p137). Too little detail on this project exists to provide evidence of private benefit, but a consequent position on a parliamentary committee was most likely related to the patent submitted.

Ballast shore at Jarrow Slake

Neale submitted a proposal in the mid-1670s for a project on ballast shore at Jarrow Slake, which is 'a large inlet in the Tyne' (Thomas, 1979, p138). The project idea, already developed by others, was to establish a ballast shore nearer to the river mouth so that ships would be able to make a quicker turnaround and consequently increase supplies directed towards London. The project was controversial, involving a clash of interests, especially between the number of people proposing their projects and the 'Navigation of Newcastle' company. The main arguments were expressed to the King with regards to intervening in trade with Tyne shipping and potential harm for Newcastle. At this point, Neale submitted a proposal. 'The subsequent developments were a clear illustration of the extent to which Neale relied upon political influence for the promotion of his schemes, hoping to reap benefits where others had failed' (Thomas, 1979, p143). The project failed despite the influential supporters. However, throughout the process of defending the project, Neale admitted that private interest in the project was involved but emphasized the benefit of the project for seamen and also highlighted that his opponents had their own private interest. Although the project did not commence, Neale disclosed his private interest, whilst also declaring the public benefit.

Tunbridge Wells development

Another unsuccessful project was the Tunbridge Wells development, where Neale owned and rented properties and built shops, gaming rooms and coffee sheds with his tenants. The project emerged as a result of a lack of accommodation in the area. Accommodations were built on rented ground for sale. Neale leased more land and rented it to others for shops. Unfortunately, a fire in 1688 burnt some of Neale's buildings with the damage amounting to £2,000, but he borrowed money and rebuilt them. Creditors played an important role in Neale's projects. A number of them, like the London merchant Thomas Dashwood, were continuously lending Neale money. The borrowed sum totaled to £3,925 in 1689. 'Thus on

6 May 1690 Neale made over the entire Tunbridge Wells premises to him, with full market rights on the Lower Walks' (Thomas, 1979, p153) and also 'granted manorial lordship to Dashwood'. Neale incurred a large financial loss, although the intention of this project had been for private benefit despite the outcome.

Lotteries

Neale launched a lottery in 1693, which was sold for 10 shillings with fifty thousand buyers. Ten per cent of the sale was kept for his lottery management expenses. He also launched lotteries in 1694 (the Million Adventure Lottery) and in 1695. His last lottery, the malt lottery in 1698, was not successful. There was an intention to prohibit lotteries in 1693, but according to Thomas (1979), it is very likely that Neale or his agent offered money to a committee member working on this matter to delay the bill. He also gained a '£4000 prize in one of his own lotteries' in 1694 (Thomas, 1979, p327).

Postal service

Neale proposed as a project a postal service between the American colonies and England and he was granted a fourteen-year patent in 1692, which meant a monopoly over the postal service. In 1693 it was decided that in the state of Virginia, Neale could develop a postal system out of his own pocket. The project was difficult due to levied postal charges and personal costs amounting to over £2,360. Andrew Hamilton was acting as his agent. Neale was in debt to Hamilton and ended up resigning the patent and assigning the scheme to Hamilton in 1699. The postal project was a monopoly with an associated potential private interest. The public benefit here was an improvement in infrastructure.

Seven Dials development

As part of the Seven Dials development, 200 new houses were built but the innovative twist was that a number of streets met in a square. The lease for land with building permission was obtained in 1692 and the project commenced. The development cost £16,000, which was obtained as a loan over three years, and was raised through creditors. 'During his career as projector' (Thomas, 1979, p296) Neale relied on selected agents' services but this development was dealt with by a new agent Godfrey Woodward, who received the property on behalf of Neale. It is not known if the loans were repaid but he did not make a profit out of this development.

A clash of private interest was not uncommon in Neale's official positions and his projects. There were stronger links between his Westminster actions and his projects. Increasingly, practical financial matters became important to him, particularly lottery creation and floating exchequer bills, just two of the projects on which he was actively engaged after 1688. But the results of his increased efforts were not salutary for his already weak frame (Thomas, 1979, p216).

Neale petitioned ‘for a 31 years lease to sink and work gold and silver mines in Virginia and Maryland, and for general mining rights’ (Thomas, 1979, pp290-291). Both grants were approved the same year for mining gold, silver, lead, copper, tin and quicksilver in Virginia and shipping all silver and gold to London. Thomas (1979) highlights that both projects were the continuation of Master of the Mint activities in 1686 and part of his official responsibilities.

The fact that influential contacts assisted with obtaining patents can be clearly illustrated through the example of Neale’s inclusion in a bill for saltpeter manufacture in 1691, with the patent approved for his nephew in the same year. Moreover, Neale was keen to bring his son Thomas into the Parliament. The votes were obtained not only on a genuine basis but also by inviting outsiders to vote and buying the ‘right’ votes. The next subsection examines the private interest of Paterson within the establishment of the Bank of England.

6.5.3 William Paterson’s project

This subsection is informed by Hamilton’s (2013) PhD thesis. The Bank of England idea was born unintentionally and involved a number of projectors. Paterson invested in a diving machine project by William Phips in order to search for a Spanish galleon close to the Bahamas. The treasure was found and the company paid 10,000 per cent. Interestingly, Hamilton referred to Paterson as an ‘investor/projector’ (Hamilton, 2013, p131) here, although no explanation was provided for the title.

Paterson had taken a risk, which paid off. This accident was formative to the Bank. Phips’ voyage seems to have acted like a beacon of hope to projectors and so encouraged projecting and the project of the Bank; it flooded the market with bullion, the goldsmiths could not cope, and so it emphasised the need for a bank (Hamilton, 2013, p132).

The initial proposal submitted in 1691 was rejected. With the second submission of the proposal, Paterson took on board two influential supporters: Charles Montague, Lord of the Treasury, and a well-known merchant, Michael Godfrey. This support and also the demand for financing the war with France enabled the passing of the bill. As Hamilton (2013) revealed, the King was so desperate for ideas to raise money, that he even introduced taxes for being a bachelor. Merchants wanted safe investment of their money. Paterson (Hamilton, 2013, p61)

...simply proposed that £1,200,000 be raised by subscription and lent to the Government at 8 per cent; the subscribers would be incorporated in order to manage ‘the perpetual Fund of interest’ and the Government would pay a further

£4,000 per year for management of the fund and allow the Bank certain privileges. The perpetual fund of interest was to be levied on ship's tonnage and wine and beer.

The King approved the Bank of England Charter and so national debt was born. The bank was independent of the King and Parliament. The Governor and Company of the Bank of England was established in 1694 by a Royal Charter and Act of Parliament as an independent corporation owned by 1,269 subscribers including the King and the Queen. The Bank as a central bank was a monopoly. The main public benefit of this financial institution was public credit. Paterson received a private gain, although much later, in 1718. He petitioned for recompensation for establishing the Bank and received £16,754 for serving the country. The establishment of the Bank of England created a benefit of public credit and the projector was rewarded financially for his initiative.

6.5.4. Hugh Platt's project

Platt was a 'projector, inventor, alchemist, and author, was an aggressive and prolific entrepreneur, whose work discloses the backstage efforts of projecting' (Heller, 1999, p42). Heller (1999, p24) refers to the late sixteenth-century writing by Sir Hugh Platt's 'A discovery of certain English wants' (1595) as grappling '...with the relationship of self-interest to the national good and personal profit to the well-being of the commonwealth, unsettling an older medieval economic view that saw profit as immoral and commercial possibilities as limited' and he was motivated by profits promoting his ideas in writings. Platt was making a point that personal gain was acceptable as it enables public good through inventions and employing the poor. There were allusions to the Monarch's and God's dependence on inventors.

6.5.5 Rowland Vaughan's project

Rowland Vaughan wrote 'Water Works' (1610), where he explained how to control flooding in fields and consequently increase agricultural yields. He similarly to Platt positioned projectors in relation to the King and God and also expressed the importance of self-interest (Heller, 1999). Vaughan instead of focusing on skills linked to a projector was demonstrating the production side within the proposal, and communicating authority associated with rewards. The power of rhetoric was very persuasive; the proposals

themselves were inventions and these inventors were entitled to profit, fame or status arising out of their invention. Vaughan promised profits to the readers of his proposals and also money in five years if such promises were false.

6.5.6 Simon Sturtevant's project

Simon Sturtevant wrote about his inventions in 'A Treatise of Metallica' (1612), a project on making sea coal and pit coal, which would save money by reducing charcoal costs (Heller, 1999). 'For promises, Sturtevant had received a patent and a share in the profits from King James' (Heller, 1999, p51). He lost 31 years patent work in a year when he was unable to produce the promised invention. Unfortunately, inventor/projector Sturtevant found himself in a debtor's prison despite claims that his inventions and skills were profitable and good for the commonwealth and the country.

6.5.7 Cressy Dymock's project

Cressy Dymock was a projector-like promoter, whose cultivation experiment made large promises including benefiting others and God's glory (Yamamoto, 2009). Dymock for his invention, skills and pains required thirty pounds pay, food on a daily basis, half the difference in yields and the keeping of his invention, which was presented upon a secret. This experimental husbandry scheme gained support from a number of investors, including Hartlib. Dymock received funding because his scheme was neither seeking to obtain a monopoly nor fine the competitors. His credentials and reference to piety and public benefit were the other reason for possibly attracting investors.

6.5.8 Le Pruvost's project

La Pruvost's project elaborated colonial plantation, husbandry and fishery and guaranteed 12,000 pounds income (Yamamoto, 2009). This project was of interest to the Hartlib circle. Similarly to Dymock's project, secrecy was involved. This seemingly monopolistic project was supported by the Hartlib circle through an appeal to piety and public service. According to Dury, cited in Yamamoto (2009, p136) 'a Publique good is nothing else but

the universal private good of every one'. The project was presented as raising revenue of the state and increasing employment of the poor without false inventions, taxation or unjustified privileges. In terms of private benefit, he wanted to gain a part of the profits. However, despite the Hartlib circle's backing, this project failed to receive the support of MPs.

6.5.9 Gabriel Plattes' project

Gabriel Plattes distanced himself from projectors in his agricultural tracts through placing cautions on his knowledge limitations, presenting his financial independence and expressing no interest in obtaining investment (Yamamoto, 2009). His publications encouraged the readers to test the ideas for themselves. According to Yamamoto (2009, p140) 'open communication was a pragmatic means to manage distrust', but despite that it raised skepticism. It was 'persistent distrust of the projector, not only in the sense of monopolists and patentees but also in the sense of promoters of novelties for the public good' (Yamamoto, 2009, p150). Yamamoto (2009, p147) cited Plattes, who explained in terms of profit that 'the pains and charges being mine and the profit being to redound to the Readers'.

6.5.10 Walter Blith's project

Walter Blith in his survey on husbandry managed distrust in a manner similar to Plattes (Yamamoto, 2009). Instead of great promises of the universal knowledge, he pointed out the limitations of his observations, exposed his methodologies, invited the reader to test his experiments and criticized projectors. Blith highlighted that he was only sharing his experience and that there was no private interest involved.

6.5.11 Andrew Yarranton's project

Andrew Yarranton worked on the Stour navigation scheme and disassociated himself from projectors (Yamamoto, 2009). The money for such complex schemes as navigation systems was raised through persuasive project plans and demonstration of the feasibility of the scheme's objectives. According to Yamamoto (2009, p231), 'Yarranton did play key managerial and supervisory role in the scheme...'. There were no fees to the Exchequer

involved. The scheme promised to provide jobs, coal and some other items at a better rate. Petitioners against this scheme highlighted private interest and intention to gain a monopoly on coal supply in the Severn region. The promoters claimed lifetime rights to use the river and rail for free. However, this was a likely route towards a monopoly on coal supply with other potential consequences, such as the undesired impact on local textile and iron water mills due to waterway cuts and the impact on other coal production sites. Thomas Smyth, a Middle Temple lawyer, connected Yarranton with two financial supporters, Thomas Lord Windsor and George Digby. The profits of the scheme were mainly supposed to come from levying tolls for passing barges and from the sales of coal. The latter was expected to raise over £3,000 per annum. The promoters were made liable for compensation payments for a number of people affected by the work they carried out on this scheme.

In January 1678, Robert Yarranton and one, William Farnolls, were appointed as the main undertakers of the navigation scheme, and Andrew Yarranton gave up all his interest in exchange for a life annuity of thirty pounds from the scheme's profits (Yamamoto, 2009, p236).

The project needed to be well organized with synchronized payments (Yamamoto, 2009). The project went into debt and one of the investors backed out. Whilst a constant appeal to the upcoming success of the project was communicated to investors in order to keep them on board, investors felt insecure because they were not in control of daily transactions and could be cheated by overstating expenses or devaluing profits.

6.5.12 Humphrey Mackworth's project

Sir Humphrey Mackworth established the Governor and the Company of the Mine Adventurers of England in 1698 as an unincorporated joint-stock company, changing status to incorporate it in 1704 (Yamamoto, 2009). He became a Tory MP in 1701, most likely due to connections built through the mining venture and possibly bribery. Mackworth launched a company looking for subscribers through a lottery. 'Lottery tickets cost £5 each, and the fortunate ones who drew the prize tickets were given shares ranging from one to fifty shares (a nominal value of £20 per share)' (Yamamoto, 2009, p301) and even blank tickets would receive prime money with percentage of interest. Mackworth secured investment through a promise that the company 'with a large Stock and good Management, would yield It clear Yearly Profit' of more than £171,000' (Yamamoto, 2009, p301).

It attracted around 700 investors (Yamamoto, 2009). Twelve holders of twenty plus shares formed the Board of Directors together with the Governor and a Deputy-governor (Mackworth). The company was presented as creating jobs for the poor and the prisoners, improving the wealth of the investors, contributing to the trade of national product and improving manufactories. The company supported two schools for the mineworkers' children and had intentions to donate money to the poor annually. The struggles started from 1700 and according to Yamamoto (2009, pp305-306):

Put simply, it collapsed primarily because it extended its activities over too many different mines and related refining activities, used paper credit to borrow far beyond the liquidity of its assets, overestimated future profitability, and clung too much to the hope that the scheme might in the end flourish. The Company's mines failed to achieve the expected level of profit; so under Mackworth's direction, the management fabricated false news and 'cooked' its accounts. Some directors manipulated the share price, sold off part of their shares, and thereby paid creditors and shareholders and profited themselves.

The Mine Adventurers was also granted permission for Mine-Adventurers as a Bank in 1704 (Yamamoto, 2009). The bank plunged the project into further debt. It also managed the stakeholders of the initial project through offers of more company shares instead of payments. 'By the end of 1707, however, the Company had incurred debts of over £33,000 above its cash reserve of just £927, and still promised to pay a 5% dividend in May 1708...' (Yamamoto, 2009, p328).

Mackworth was fabricating the reports as a way of managing the stakeholders so that the credit would be maintained (Yamamoto, 2009). Despite the company ending with a big fraud and collapsing in 1710, it returned in 1720 and some of the mines continued working at least until the mid-nineteenth century. 'So while the Company and its first deputy governor might well have perpetrated a great deal of fraud, the scheme had some material basis' (Yamamoto, 2009, p307).

Mackworth admitted that the motivation behind this project was personal profit and reputation, which could help him to build a parliamentary career (Yamamoto, 2009). Although profit projections in a number of mining sites failed to materialize, he definitely took money from profitable ventures, for example, Neath mine's yield was £600 per annum.

6.6 The middleman

This section explores the role of projector as a middleman and is based on Thomas' (1979) PhD thesis, where a great example of the projector Neale as a middleman is presented. Neale had many responsibilities and could not practically be involved in a large number of projects, so 'it might even be misleading to accredit Neale with all the projects, especially as the charge of plagiarism was levied against him more than once' (Thomas, 1979, p320). He encountered a number of projectors and artisans and was involved with 'John Holland, merchant, founder of the Bank of Scotland and adept projector' (Thomas, 1979, p321). Neale was also a Fellow of the Royal Society, where he could meet similarly minded artisans. His position in Parliament provided him with respect and credibility.

Associations with prominent businessmen and membership of the Commons would convince him of the necessity of certain projects. He would know when the government required a particular sum of money, the men likely to be most helpful in raising such sums, and, therefore, could be a ready-made middleman (Thomas, 1979, p322).

He was a JP for Middlesex and Westminster as well as local commissioner for sewers, which put him in the position of making other contacts within his areas of interest (Thomas, 1979). Neale could be perceived as trustworthy since '...the safety of his Court position meant that his credit was good, and, in turn, he could afford to speculate' (Thomas, 1979, p318). As Thomas (1979, p338) observed of Neale '...to others he appeared as a gad-fly, buzzing around everybody with the offers of assistance, a promise that the matter would reach the King's ear, that contacting a particular person would guarantee success for a venture.' Neale obtained grants for a few more treasury recovery projects in the 1690s. His name appeared on the same type of project in Bermuda, but a fellow projector Samuel Weal provided the instructions in this project. Thomas (1979) suggests that Neale was only promoting this project since he had the link to powerful contacts and was an influential figure.

6.7 Summary

The examples of projects presented within this chapter illustrated the importance of influential people in the undertakings of projectors and careful presentation or avoidance to communicate private benefit within projects. The norms in society largely shaped by religion played an important role in communicating interest in profit (see Subsection 6.2).

It was a sin until the middle of the seventeenth century when projectors dared to introduce this aspect within their proposals, while it was essential in project proposals to communicate public benefit.

With an increasing negative connotation attached to the word 'projector', there was a rise in disassociation with the title as in the Hartlib circle's case. Projectors were presented publically, were laughed at and they had no control over it. Yamamoto (2009) pointed out that the negative connotation attached to the word 'projector' led to disassociation from this title. An increasing number of satires on 'projectors' escalated this perception even further. Project financing changed during the seventeenth century in relation to the changing setup of companies from monopolies to joint-stock companies and this change was also reflected in satires.

6.8 Commentary

This chapter focused on public and private interest within the project proposals by projectors, which was explored through five PhD theses on projectors within the seventeenth century. Whilst the accounts of Heller (1999) and Yamamoto (2009) were rich in presenting cultural aspects of projectors and the private and public benefits role within the projects of projectors and projector-like promoters, Roberts' (2012) thesis lacked reflection on the projector title and projecting culture, despite this label being used within the title of the thesis. The characteristics of projectors were not introduced in Hamilton's (2013) thesis either. This raises a question if the authors understood who those individuals were behind the title of the projector, especially given that Hamilton (2013) described herself and the fictional character from a novel, Moll Flanders, (who was not referred to as a female version of projector by the author of the novel) as projectors.

Yamamoto (2009) presented projectors, but mainly the projects of individuals, who wished to disassociate themselves from projectors. However, this phenomenon was part of projecting culture, exposing how these undertakings by projector-like promoters were presented in order to distance themselves from the name 'projector'. The elements of projects associated with projectors were discarded from their proposals. Therefore, analysis of the Hartlib circle alone could reveal elements associated with projectors within that period.

It is important to distinguish the conflict of public-private interest and public and private interest. Modern projects and business setups always hold public interest within them but it

is not common to escalate it as it was in the projectors' age. Common public benefits of projects occur today through employment, products or services benefiting society, taxation etc. These benefits are not that remote from centuries ago. However, contrary to the beginning of the seventeenth century, when projects rarely were carried out without objective to profit, it is normal and expected today to carry out an activity and receive a financial return. However, society is completely different and religion does not play a significant role in most contemporary projects. In terms of the clash in public and private interest, modern understanding and understanding within the projectors' age was not the same. There were multiple examples of this clash presented including Neale's organized lottery, where one of the winners was Neale (Thomas, 1979), or an unethical step by Ingram, who married the daughter of his indebted partner (Roberts, 2012).

Evidently, the importance of contacts in the activities of projectors was immense. Neale (Thomas, 1979), Ingram and Cranfield (Roberts, 2012), Paterson (Hamilton, 2013) and Mackworth (Yamamoto, 2009) were surrounded by powerful people, who were essential to their projects as creditors, supporters, government officials or links to other powerful people. The key benefit was having an advanced position against someone else without such contacts. In fact, people with project ideas, but without influential contacts potentially were 'employing' these connected projectors, as was revealed in Neale's case.

Interestingly, Thomas (1979, p296) referred to the activities of projector Neale as a 'career', which is an unexpected angle from which to look at the projector. A career requires an element of promotion and it seems like the projector title could not fall within this description. However, this reference makes sense in Neale's case, as from carrying projects himself, he became a middleman serving others. The middleman position must have brought private gain as such a busy man like Neale must have been motivated to support other projectors. In Neale's case, his projector and public servant roles were interdependent. His public servant role was more influential to his projector role rather than the other way around.

As Heller (1999) revealed, profit became acceptable within proposals from the middle of the seventeenth century. Her and Yamamoto's (2009) accounts presented the Hartlib circle, which accepted private profit within projects as long as the project was for public benefit. Heller (1999, p19) referred to them as 'later day projectors' and Yamamoto (2009, p117) called them 'projector-like promoters'. Neale (Thomas, 1979) and Paterson (Hamilton, 2013) were carrying out projects during the period when profit from projects was acceptable and communicated. They received their gains. Neither Thomas (1979) with

regards to Neale nor Hamilton (2013) with regards to Paterson, referred to the projectors' wish to disassociate themselves from the title of 'projector'.

All five of the theses studied within this chapter were focused upon projectors in different ways but only Yamamoto (2009) cited Thomas' (1979) thesis within his thesis. Neither Heller (1999), Roberts (2012) nor Hamilton (2013) cited the thesis of any other scholars explored in this chapter despite the fact that there were earlier PhD accounts about projectors. I believe that this is the major flaw within their dissertations, as the most robust research on projectors carried out by fellow scholars was not taken into account when writing from a fresh perspective. For example, Hamilton (2013, p13) quotes and reflects on Defoe's writings as follows: 'the 'essential ends of a project' he declares, in anticipation of Adam's economic philosophy some seventy years later, are that it should fulfil [sin] 'public and private want'. However, as Heller (1999) and Yamamoto (2009) revealed, a private gain in a project beneficial to the public was acceptable from the second half of the seventeenth century. Defoe was a projector and author of the late seventeenth century and early eighteenth century.

Heller (1999) suggested that profit became embraced only after 1640s. Despite this fact, Table 15 (see Chapter 6) clearly illustrates that projectors were benefiting from projects or intended to do so without communicating it at all or by communicating it in a discreet way during the seventeenth century. It has emerged from this chapter was that personal benefit was not necessarily financial. In Ingram's case, he married the daughter of his indebted partner (Roberts, 2012); Ingram and Cranfield obtained positions in Parliament and court (Roberts, 2012) and Neale obtained public servant post in a parliamentary committee (Thomas, 1979).

Another interesting fact is that it was not uncommon for projectors to reach for private benefit much later after the project commenced. This is true in Morrell's (see Chapter 4) and Paterson's cases. Paterson lasted only nine months as a Director of the Bank of England due to a conflict of interest (Armitage, 1994). He petitioned for recompense in 1694, for the establishment of the Bank of England and received it more than twenty years later in 1718 (Hamilton, 2013). Morrell, presented within Chapter 4, petitioned for compensation in 1608 for his efforts in the New Draperies Project, much later than the manufactory was established, and received recompense in 1614.

Another aspect of public-private benefit was trust. Joint-stock companies were built on trusting investors' money. A number of projectors, like Mackworth, were trying to 'manage' that trust by falsifying the financial records of the company (Yamamoto, 2009). This type of incident had an impact on the title 'projector' due to an increasing association

with distrust. In Mackworth's case, he was satirized by an unknown author and also became satirized by Defoe's pen (see Chapter 5). Projects were carried out for public advantage, but usually involved private benefit. These included but were not limited to profits, they included highly desired posts within government and a fast track to establishing a monopoly. Public projects were carried out by private initiatives. Similarities can be drawn with current private finance initiatives (PFI) initiated by the UK government, where private companies carry out government projects. However, many of these projects struggle with government spending remaining high (Mance & Parker, 2018). The government attempted to improve the situation through moving from PFI to the upgraded version PFI2. However, the system is more in the hands of private rather than the public sector as an attempt to terminate private contracts could lead to even higher expenses than the project itself as there are no break clauses included in most cases. Dependence on private initiatives is evident both in the seventeenth century and today.

It is also evident that projectors were not amongst the poorest strata in society. This goes back to Thirsk's (1978) observation that by the end of the sixteenth century, projectors were not inventors anymore but middleman, who were capable of backing up inventions financially and dealing with offenders (see Chapter 3). It seems like this wealth aspect never changed unless the inventor was a prosperous person.

Another essential characteristic of a projector was influence: the capability to influence and have influential contacts. As per the examples within this chapter, influence was obtained through personality traits like oratory, communicability, and also through contacts, bribes and corruption. These aspects are not only particularly evident in this chapter but also connect all three foci. This trait was key for a project's support and funding. Their influence was also raised through the positions of public office that projectors held and the people they met there. Another source of influence was related to dishonest activities like bribery and corruption. Influence allowed them to take over projects, which were initiated by others, for example, the Ballast Shore Project was initiated a long time before Neale decided to submit his proposal (Thomas, 1967). Although this project proposal failed, he was a weighty competitor for others proposing their project plans due to his influential connections. All these findings draw a generalized portrait of a projector as a wealthy, influential and connected person.

Scholars are constantly referring to projectors as entrepreneurs. Cantillon introduced the definition of entrepreneur in 1755 (Filion, 1997). It became popular in English only in the 1870s and the closest word prior to this was undertaker (Bacq et al., 2016). Sternberg and Wennekers (2005, cited in Bacq et al., 2016, p705) defines "entrepreneurship" as an

occupation that refers to someone's process of setting up a business that he or she will (partly) own, or the activity of owning and managing a young business on one's own account, and risk.' A number of scholars suggested that entrepreneur and projector are synonyms (Yamamoto, 2009, Heller, 1999, Hamilton 2013). This statement is not precise. Examples of the proposed projects within this thesis illustrate that projectors did not always carry out their project proposals and therefore they did not necessarily set up a business. However, there are many similarities within these terms. Both entrepreneur and projector could be careers. These titles are generic and could be allocated by others or self-identified. However, after studying projectors' culture, their role in society and society's understanding about projectors, it can be confidently concluded that disassociation from projectors was mostly contingent on self-identification, whilst the projector title was publicly assigned to an individual. Also, it is evidential that an individual could be projector in a number of undertakings and not projector in others. At times, in history, projectors were carrying out their projects (including monopolies) and holding positions in a Parliament at the same time, which would now be understood as a clash of public-private interest, but up to 1641 it was not uncommon. In this case, the individual was acting as projector in some of his activities and as public servant in others. The conclusions of this thesis are drawn in the next, and last chapter, of this research work, where future research is also suggested.

Chapter 7. Conclusions

This thesis explored project planning and persuasion practices within seventeenth-century England through the work of projectors. The literature review explored the history of modern project management and identified the need to extend this history further back in time. This research introduces a historical account of the activities of projectors within seventeenth-century England, who were not featured previously in the history of project management. The projectors' culture over more than four hundred years was explored through a literature review that revealed the genesis of the title 'projector', projectors' activities and the wide range of fields in which they were active. Further focus on seventeenth-century projects of projectors was presented through deliberately chosen three foci: archival, socio-historical and public-private. These foci enabled the generation of a more rounded picture of projects and projectors within the seventeenth century than a single focus point would do (see the objectives of these three foci in Subsection 2.2.1). The archival focus was on a project proposal of the seventeenth-century projector, which echoed within modern project management. The socio-historical focus illustrated projects and projectors as represented in publications, which shaped the opinions of its readers. The public-private focus was on public and private interest within the undertakings of projectors as well as the clash of these interests. Evidently, the themes of public-private interest and influential people's roles in projectors' undertakings ran through all three foci and are still relevant in modern project management.

7.1 Contribution to knowledge

This research falls within the 'degree minus one' of project management classification according to Garel (2013) through presenting a historical account of projectors in the seventeenth century. Since this research focuses not only on projects proposed a few hundred years ago but also on projectors, it is important to point out their relevance to the history of project management. The primary relevance is that individuals under this title were proposing and/or carrying out projects. Before the research herein, projectors were absent from project management history, even though the word 'projector' is suggestively similar to the word 'project'. Whilst the word 'projector' refers to a person involved in projects, the word 'project' is an undertaking. A number of definitions of the title projector were presented in Table 6 (see Chapter 3). Although they were relatively different, all of

them certainly reflected this term. Zell (2001) referred to projector as being ‘public spirited’ in his description, which is not quite correct as this research has revealed. Public and private benefits were an essential part of projects (Defoe, 1697). As Yamamoto (2009) and Heller (1999) pointed out, the public benefit element was compulsory within seventeenth-century projects in order for the project to stand any chance of being considered, despite the project having been proposed by a projector, projector-like individual or non-projector. Therefore, the projectors’ ‘public spiritedness’ was not a trait of projector but rather a necessary aspect of a project.

The research revealed that it is not enough to investigate projects of projectors in order to understand projectors’ culture, which was shaped by politics, the economy and social situation, laws, changes in the establishment of companies, literature, etc. ‘An Essay upon Projects’ by Defoe was shaping readers’ opinions of projects and projectors. This piece of writing by a well-known contemporary revealed that proposed projects were not necessarily written with an intention of carrying them out. ‘An Essay upon Projects’ is an example of a large number of diverse projects proposed by a single person associated with projector. This trait is evident within other projectors’ proposals. The literature on projectors is a potential source of hints to the as yet undiscovered side of projectors’ culture as per Ben Johnson’s satire ‘Devil is an Ass’ (1756), which opened up the possibility of the existence of a projectress.

Satires mainly stereotyped projectors. Yamamoto (2009) referred to the term ‘projector’ as a negative stereotype about innovation practices (see Chapter 3), which this research challenges through Defoe’s writings. Defoe (1697), being a well-known writer of the late seventeenth century, was capable of satirizing anyone in his writings but despite the extensive negative reference to the title ‘projector’, he categorized projectors into two types: honest and mere. Yamamoto most likely referred to the latter. Defoe must have had reason for this classification as a contemporary of the seventeenth century.

It is evident from the research that projectors were active between the sixteenth and twentieth centuries. However, at the end of the nineteenth century, the optical instrument took over the title ‘projector’ and the meaning of this title when referring to individuals faded. As the research has revealed, the title ‘projector’ carried a pejorative connotation at most times throughout its existence. It was stereotyped, which resulted in a wish to disassociate from this title. Therefore, it is not surprising that the title ‘projector’ quietly disappeared from English in its original meaning, giving the title up to the increasingly popular optical instrument. The discussion with regard to the title of projector is controversial, as the title appeared to be generic and assigned by others despite the wish of

the individual not to be associated with it. The use of this title was out of the control of the individuals associated with it. As commented in Chapter 6, the title 'projector' is a generic name and individuals could be projectors in a number of their activities and not projectors in others.

Projectors were carrying out or proposing projects with an exaggeratedly expressed public benefit and an understated or excluded private profit up to around the 1640s. Although profit was communicated from the 1640s, the exaggerated public benefit remained within proposed project plans. The New Draperies Project by Morrell (1616) (studied in Chapter 4) and the project proposals within Defoe's 'An Essay upon Projects' (1697) (explored in Chapter 5) were in line with Heller's (1999) findings. There is only an indirect modest hint to compensation within Morrell's project, whilst entitlement to profit was openly communicated by Defoe, who referred to it as an essential part of a successful project.

Projectors were rightly associated with monopolies up to the 1640s and to joint-stock companies later. Many of the seventeenth-century projectors were involved in numerous unrelated projects. There is no single correct description of projector, especially when looking at hundreds of years of history. The generalized portrait of a projector up to the late sixteenth century is of an inventor, but since the late sixteenth century the portrait becomes one of a wealthy, influential, well-connected and most likely communicable person. The finding within this research indicates four types of projector:

- Projectors as real inventors
- Projectors proposing projects only
- Projectors proposing and carrying out projects
- Projectors carrying out someone else's projects - middleman

Many projectors could fall under a few of these types. For example, Neale was proposing and carrying out his project but he also was a middleman (Thomas, 1967).

Modern project management refers to the importance of relevant knowledge and its application in managing projects. Knowledge was accumulated differently in the seventeenth century. As Morrell's project plan revealed, part of his project plan was 'borrowed' from writings by others and adjusted to the New Draperies Project. It was important to exhibit knowledge and the capability of carrying out projects in the project proposals, which was evident within both archival and socio-historical focus chapters. Both Defoe and Morrell referred to 'traveled' men as wise and intelligent men capable of carrying out projects. There were multiple references within Morrell's plan in reference to

knowledge (see Chapter 4). It is probably safe to suggest that a large part of knowledge was gathered through experience and word of mouth.

Evidently, modern project management is not the same as project practice at the beginning of the seventeenth century. The project plans were very different in terms of rhetoric, reference to public benefit and exclusion of private benefit. However, this research provides evidence of a number of echoing aspects within project proposals a few hundred years ago that are especially evident within the New Draperies Project presented in Chapter 4. The New Draperies Project had a defined objective, budget, set of financial calculations, timeline, location, employment and teaching approach, and defined top-level organization governance and quality control. This is not to suggest that these aspects are identical within modern project management but they illustrate relevance to modern project management and therefore projectors contribution to the history of project management.

One of the reasons for ignoring the pre-history of project management is related to the notion that project management emerged with its professionalization and both Garel (2013) and Morris (1997, 2011) acknowledged the importance of this aspect in project management history. The established professional project management organizations developed tools and knowledge databases promising universal successful solutions to project management for any industry. They sold the success of project management. Project management before the twentieth century is ignored arguing its lack of relevance to modern project management approaches and among the most common reasons are: inconsistency, the trial-and-error approach to project management, lack of planning, and large flexibility in budgets and timelines. This suggests that modern project management dealt with all these issues. However, there are numerous examples of projects, in particular within the UK government, with significant over-budgeting and very 'flexible' timelines as mentioned in the NHS IT system project and the Scottish Parliament building project (see Chapter 1). It seems like 'projectors' could have run these projects. There are many similar examples that question formalized project management's ability to provide tools for successful project management. As per the 'Project Initiation Routemap' example (see Chapter 1), the increasing number of tools suggests that projects are still struggling. Possibly, greater attention to and analysis of previous (historical) projects could help in future success. Expanding the history of project management, both in terms of time and geography, means creating a larger database of project management practices and understanding the origins of the approach to projects. As in this case a historical account of the activities of projectors and their relevance to the field of project management. The

history of the twentieth and twenty-first centuries clearly does not yet have the answers to failure-free project management.

Project practice within the twenty-first century is evidently different from that in the seventeenth century. By extending Navarre's and Garel's (2013) classification of project management history to 'degree plus two', which covers the future, and thinking about project management in the twenty-second century, we might realize that project management will be understood differently. How will this activity be named then? Will it mean that the history of project management within the twentieth and the twenty-first centuries should be ignored? It seems that project practice prior to the mid-twentieth century avoiding to be named 'project management' at any price. However, we talk about projects today, and the seventeenth century used the same word 'project', although the meaning was slightly different. The same applies to the title projector, which changed as per the projector typology introduced earlier. Different centuries, different circumstances, different society, the way of living, and, accordingly, different meanings of the same word, which we define. Even today small businesses might not be able to hire someone into a specific project manager role but they still work with projects. Are they managing projects?

This thesis contributes to project management knowledge in offering a historical account of the activities of projectors dating back to the seventeenth century and introducing their relevance to the history of project management through the aforementioned three foci. The originality of this work lies in introducing a historical account of project practice dating back to the seventeenth century through the work of projectors.

7.2 Limitations

This research was limited in terms of timeframe and geographical location as well as in terms of a number of illustrative sources studied out of the thousands available within the seventeenth century. This is in no way to undermine this project's significance, but it rather suggests that there is space for scholars to write many more historiographies and puzzle out the picture of project management.

7.3 Future research

There are a number of areas for future research in the history of project management. First of all, exploring more projects within the seventeenth century would allow the identification of any patterns and common practices in project management. As it was revealed within Morrell's project, a number of sections within the proposal were 'borrowed' and adapted from other projectors' proposals. While this research focused on the seventeenth century, research on projects in other centuries would provide a more rounded picture of project practices and changes in those practices throughout time. Although it is interesting to understand project practice prior to the seventeenth century, focus on the eighteenth and nineteenth centuries would allow the gap to be closed between the historical account presented in this thesis and modern project management historiographies. This research examined a number of projects with a greater focus on a single textiles project from the project practice point of view; studying multiple textiles projects within the same or a few centuries would allow for a better understanding of the aspects of project practices within this industry. Closely exploring projects in various industries could provide details on similarities and differences in project proposals as well as the transferability of practices between projects. Whilst this research touched on knowledge acquired for project proposal writing, future research could be conducted with a focus on acquisition of knowledge and capability for writing and carrying out projects. Another equivalent research to this thesis could be conducted on the project proposals within other countries, which would allow comparison of international project practices. A comparison between projectors' culture in other countries and England's might reveal new facts about this phenomenon. It would be interesting to understand how the projector title faded out (or not) of other languages, since neither projector as an individual, nor projector as an optical instrument were necessarily named in congeneric words in other languages.

An additional area for investigation is the female equivalent of projector as Ben Johnson presented the 'projectress' character. It is evident that there is plenty to explore in terms of the history of project management. This research potentially could serve as a starting point for carrying out the suggested research.

Appendix 1

Welcome Library			
Projector	Year	Sector	Document type
John Law	1720	Dutch speculation bubble of 1720, which occurred simultaneously with the South Sea bubble and the Mississippi bubble	Image and lettering Caricature
Robert Walpole	1741	Financial administration, in particular the Gin Act	Lettering bribing caricature
John Armstrong	1769	Projector of public dispensaries	Book
-	1821	-	Book, Gentleman's magazine anecdotes of the projector and his early associates
-	1889	Divorce projector	Book
-	1890	Divorce projector	Book
-	1908	Divorce projector	Book
Henry Booth	1906	Railway	Book
-	1912	Lectures	Book
The National Archives			
Projector	Year	Sector	Document type
Mr Dickson	1862-1877	Railway	-
Mr Dickson	1878-1893	Railway	-
William James	1846	Railway	-
Dancein	1723	Export of slaves	-
Dancein	1724	Export of slaves	-
Jackman	1768	Weighing and saving the Fame	-
Mr Blakey	1753	-	-
-	1824-1825	Railway	-
Dickson	1713-1844	Lottery	-
Samuel Philips and Francis Millay	1750	Railway	-
Josias Jessop	1824-1825	Railway	-
-	1737	Concerns re. play 'The Projectors Folio 188'	-
-	1740	Trade	-
-	1751	Projector of compass	-
-	1806	Neutral ship	-
Brown	1811	Ship	-
-	1884	Felt, cloth, webbing and similar materials	-
Bovisand	1898	Electric light	-
Joseph Menchen	1918	Warfare sanitation and liquid fire	-
The National Library of Scotland			
Projector	Year	Sector	Document type
Thomas Scot	1623	Restore the decay of church and state	-
Thomas Scot	1623	Restore the decay of church and state	-
Waller	1712	Mining	-
The Bishopsgate Library			
Projector	Year	Sector	Document type
Charles Povey	1893	Sun fire office	-

Table 17. Mapping of the fields of projectors' activities within the major UK archives online

The Parliamentary Archives			
Projector	Year	Sector	Document type
-	1641	-	-
The British Library			
Projector	Year	Sector	Document type
John Trewer	13th-17th century	Law	Manuscript
Hugh Middleton	1560-1599	New River company	Manuscript
-	1572	Fishery	Manuscript
-	1577	Oil manufacturing	Manuscript
-	1579-1622	-	Manuscript
Hugh Middleton	1617	New River company	Manuscript
William Housley	1703-1710	-	Manuscript
William Paterson	1728-1730	Banking	Manuscript
William James	1761-1814	Railway	Manuscript
William James	1818-1826	Railway	Manuscript
Cyrus West Field	1839-1910	Atlantic cable	Manuscript
Cyrus West Field	1838-1864	Atlantic cable	Manuscript
Cyrus West Field	1858-189	Atlantic cable	Manuscript
Cyrus West Field	1863-1871	Atlantic cable	Manuscript
Cyrus West Field	1864-1874	Atlantic cable	Manuscript
Cyrus West Field	1839-1885	Atlantic cable	Manuscript
Cyrus West Field	1866-1874	Atlantic cable	Manuscript
Cyrus West Field	1868	Atlantic cable	Manuscript
Cyrus West Field	1864-1897	Atlantic cable	Manuscript
Cyrus West Field	1868	Atlantic cable	Manuscript
Cyrus West Field	1872-1875	Atlantic cable	Manuscript
Cyrus West Field	1868-1886	Atlantic cable	Manuscript
Cyrus West Field	1870-1883	Atlantic cable	Manuscript
Cyrus West Field	1864-1894	Atlantic cable	Manuscript
Cyrus West Field	1876-1889	Atlantic cable	Manuscript
Cyrus West Field	1874-1891	Atlantic cable	Manuscript
Cyrus West Field	1877	Atlantic cable	Manuscript
Cyrus West Field	1861-1882	Atlantic cable	Manuscript
Cyrus West Field	1871-1892	Atlantic cable	Manuscript
Cyrus West Field	1876-1890	Atlantic cable	Manuscript
Cyrus West Field	1860-1889	Atlantic cable	Manuscript
Cyrus West Field	1866-1889	Atlantic cable	Manuscript
Capt. Brown	1837	Pier	Journal entry
-	1837	Pier	Journal entry
Heming	1849	-	Journal entry

Table 17 continuation. Mapping of the fields of projectors' activities within the major UK archives online

Warwick Archives			
Projector	Year	Sector	Document type
James Brindley 1716-1772	1844	Canal navigation	-
James Rumsey	1788	Steam boat	-
-	1737	National debt reduction	-
Mr Duncan Campbell	1725	-	-
John Trenchard, Robert Walpole	1719	Making peers	-
Waller	1712	Mining	-
-	1709	Ships of war	-
-	1646	Fen	-
-	1641	-	-
-	1641	-	-
Aaron Hill	-	-	-
John Brooks	1642	-	-
-	1641	-	-
-	1623	-	-
The Senate House Library			
Projector	Year	Sector	Document type
James Brindley	1716-1772	Canal navigation	Letter, diary
-	1731	About projectors by Daniel Defoe	Book
Charles Povey 1652?-1743	1893	Sun fire office	Book
John Law	1880	-	Illustration
William Paterson	1865	Founder of the Bank of England, projector of the Darien scheme on the improvement of Scottish registers	Book
John Law	1864	-	Book
Hugh Robertson, projector?	1852	-	Book
-	1846	-	Microfilm
Don de Garay	1844	Communication between the Atlantic and Pacific Oceans	Microfilm, maps
-	1832	Inland navigation of the Canadian provinces	Microfilm
Hugh Robertson, projector?	1852	-	Book
-	1832	Inland navigation of the Canadian provinces	Microfilm
Mr Samuel Madden's (one that is no projector)	1732	Encouragement of learning in Dublin College	-

Table 17 continuation. Mapping of the fields of projectors' activities within the major UK archives online

London Metropolitan Archives			
Projector	Year	Sector	Document type
Hugh Middleton	1613	New River company	-
Charles Povey	1893	House Fire Office	-
Sir Hugh Middleton	1632	New River company	-
Thomas Coram	1749	Foundling Hospital	-
Thomas Coram	1796	Foundling Hospital	-
William Robert Henry Brown	1807	Golden Lane Brewery	-
Sir Hugh Middleton	1836	New River company	-
John Law	1720	Mississippi scheme	-
Sir Hugh Middleton	1907	New River company	-
Indian projector	1913-1914	An improvement for London of the future	-
Indian projector	1913-1915	An improvement for London of the future	-
Indian projector	1913-1916	An improvement for London of the future	-
Indian projector	1913-1917	An improvement for London of the future	-
Indian projector	1913-1918	An improvement for London of the future	-
Indian projector	1913-1919	An improvement for London of the future	-
Indian projector	1913-1920	An improvement for London of the future	-
Indian projector	1913-1921	An improvement for London of the future	-
OPAC City of London Libraries The Wills Archives (private collection) The Archon Directory City of Westminster Archives The Royal Archives The Business Archives Council The Working Class Movement Library The UNESCO Archives The Museum of London The British Film Institute (BFI) The Old Bailey The Goldsmith Collection Bill Witness Archives (private) The Historic Hansard The IHR Library			
Projector	Year	Sector	Document type
-	-	-	-

Table 17 continuation. Mapping of the fields of projectors' activities within the major UK archives online

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