

Object Relations: Representing changing administrative  
work between 1960 and 2010 in the Manchester Town

Hall

Charlie Southerton



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Department of Sociology

Lancaster University

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## Declaration

I declare that this thesis is my own work, and it has not been submitted in substantially the same form for the award of a higher degree elsewhere.

Charlie Southerton

23/09/22

## Abstract

*This thesis contributes to debates in museology and in sociology by developing a 'relational' approach which emphasises the interrelatedness and interdependency of objects in everyday life. The study works with key concepts from different fields of social sciences, notably 'innovation junctions' (Science and Technology Studies), 'scripts' (Actor-Network Theory) and 'social practices' (Theories of Practice), and relates these to recent work in museology, including that which challenges singular historical narratives, and which argues for new methods of conceptualising, studying and presenting objects. These methods and ideas informed an examination of administrative work and office-related objects found in Manchester Town Hall between 1960 and 2010. Sources included Town Hall records, archived photograph albums and interviews with Town Hall staff. Three principal forms of object relations were identified. These included relations between objects that arose from direct physical connection; from their arrangements within and across spaces and infrastructures; and, from their use in the performances of shared practices. This study shows that objects are multistable, and that at any one moment they are positioned in different ways, depending on how they are understood and the roles and responsibilities to which they relate. Objects (and their relations) are also never static or fixed and can change over time along with the procedures and practices of which they are a part. For museums, this suggests that objects can be used to represent multiple co-existing historical narratives. This approach depends on situating objects not as stand-alone artefacts, but in relation to others at specific (temporal and spatial) moments, and across their trajectories/biographies.*

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## Chapter 1: Representing changing administrative work through objects and their relations

This MPhil was developed from a Collaborative Awards in Science and Engineering (CASE) studentship in partnership with the Science and Industry Museum (SIM) in Manchester, with a shared aim of investigating ways to conceptualise and examine the relations between objects to better represent change in administrative work between 1960 and 2010. This interest in conceptualising and representing change through objects is at the heart of museum work but has also been a subject of significant debate and experimentation among curators and museologists, especially in the last two decades. Contemporary museums like the SIM have focused on becoming more representative and democratic in their exhibitions, and to challenge the expectations of their increasingly diverse audiences. This has primarily involved curators and museologists rethinking how the objects in their collections are used as representations of changing societies and cultures.

The origins of this thesis stem from the SIM's particular interest in using their artefact collections to represent how Manchester's administrative sector has changed over the last 60 years. Since the 1960s Manchester's economy has been transformed with its administrative and service sector doubling in size following the decline of its pre-war textiles industry, contributing to the claim that it is the first industrial city to have successfully reinvented itself after the decline of manufacturing (Kidd and Wyke 2016). The post-war growth of Manchester's service sector is emblematic of a wider national economic shift away from forms of manufacturing and goods production, and towards various forms of service work such as administrative, legal, and advertising industries. Across the UK, these service industries have grown from 46% of the UK's GDP in 1948 to 79% in 2015 (Office of National Statistics, 2016). During this period office work has undergone various forms of change, in particular in relation to: influential technological innovations such as the computer, photocopiers, and internet (Thompson, 1989; Royal Society, 2009); change in the structure and doing of office work (Mills, 1953; Sennet, 1998); and, changing locations and configurations of office spaces (Felstead, 2005; Myerson and Bichard, 2016).

A wide range of studies already exists that focus on whether or how administrative technologies, spaces and practices have changed over the last 60 years (Suchman and Wynn 1984; Sellen, and Harper, 2003; Van Meel 2011; Leonard, 2013; Cole, Oliver and Blaviesciunaite, 2014; Cass, Faulconbridge and Connaughton, 2018; Reuschke and Felstead, 2020). This thesis is specifically interested in how changes can be captured, narrated and represented through objects. Whilst the terms of 'technology' and 'objects' are often used in similar contexts; in this thesis I am distinguishing between them. Objects refer to individual things, whilst technologies refer to the application of



scientific knowledge to the design and production of 'new' things which emerge out of the relationships between marketing, politics, production, and cultural values (Silverstone and Haddon, 1996). In this definition it is possible to separate a discussion of an individual objects such as a single Diablo 630 dot-matrix printer in an office, and the technology of dot-matrix printers and the circumstances and processes that led to their development and emergence.

This thesis focuses principally on examining objects rather than the processes of innovation and adoption of specific technologies. This is done through a focused analysis of the different ways objects relate to each other. One of the central arguments of this thesis is that objects interconnect in ways that make it difficult to examine them as individual entities without losing some important aspect of how to understand and describe them. This thesis also argues that if objects are being used to examine and represent change (for example in administrative work in Manchester), those objects need to be situated in relation to each other. This requires examining objects in a manner that highlights different ways object are grouped or connected to each other, such as directly via interfaces or wires, within or across specific spaces, or part of practices.

Collaborating with the SIM places this research within ongoing debates regarding how and in what ways objects can be conceptualised, studied, and then used by museums to represent both the experiences of individual people, and of broader societal change. Emphasis has been placed on challenging and potentially redressing established historical narratives, particularly those told from singular or hegemonic perspectives. Contemporary curators and museologists (Van Beurden, 2018; Sitizoa, 2018; Loddo et al, 2021; Abungu, 2019) have attempted to engage with these questions primarily through broadening their conceptualisations of objects and expanding their 'toolbox' of methods for studying and presenting them as part of exhibitions. This includes embracing interdisciplinary approaches to conceptualising objects, and to draw methods of study and theoretical concepts from outside museology, such as from the social sciences (Schorch and McCarthy, 2018; Larsen, 2018, Simpson, 2019; Wang and Yu, 2020). This thesis builds on the interdisciplinary traditions through the development and exploration of a 'relational' approach to objects. This approach moves beyond individual objects to show how their interactions and connections are situated within complex sets of relations. This thesis argues that a relational approach to objects presents opportunities to represent multiple co-existing and potentially contradicting perspectives and narratives of change. This approach would also help to avoid presenting singular or totalising historical narratives, which portray history as deterministic, and are often told from hegemonic points of view.

This thesis contributes to museological debates about the roles of objects in exhibitions by considering how different fields of social sciences conceptualise relations between objects, notably

theories of practice, actor-network theories, material culture studies, post-phenomenology, and science and technology studies. It does so by interrogating how each of these different theoretical perspectives conceptualise objects, and their proposed approaches and methods of examining them. These theories vary in terms of how they conceptualise objects, but share a mutual understanding that objects often interact and connect to each other through their use, and that this is an aspect of objects which should be examined. This thesis works with a selection of concepts and methods of study which identify diverse ways objects are related to each other, and how these relations shape, and are shaped by, the configurations, spaces, and practices in which they exist. Key concepts include: affordances (Gibson, 1977); object 'scripts' (Akrich, 1997); social practices (Shove, Pantzar and Watson, 2012); spaces as innovation junctions (De Wit et al, 2002); the multistability of objects (Ihde, 1990); and object 'trajectories', biographies or careers (Appadurai, 1988; Latour and Lowe, 2008). This thesis works at the intersections of these various concepts and ideas, and in doing so identifies three broad (but interlinked) ways in which objects can be related:

1. Material relations: the ways objects interact, consume, and change each other (i.e., staplers binding sheets of paper into a single document).
2. Spatial relations: the ways objects are organised within and across space and held together through various infrastructures (i.e., objects arranged on a desk).
3. Practice relations: the ways objects are used together as part of specific practices, which they are incorporated into, and which recursively shape each other.

In practice these relations are interlinked and inseparable, for example objects being used as part of office practices inevitably involve objects interacting with each other in direct ways and being arranged and used in and across spaces. For this thesis they have been conceptually separated and explored in their own chapters (chapters 4, 5 and 6) as part of an organised examination of each.

### **1.1. Selecting a site of administrative work: the Manchester Town Hall**

The post-war period saw the significant expansion of administrative work in the UK and Manchester more specifically. Administrative work takes place in nearly every organisation, from banks, government departments and the military, to supermarkets, PR firms, and educational institutions. Administrative work is consequently very diverse in nature. It ranges across the public and private sectors, varies with respect to organisational size, can be part of local or international businesses, and encompasses many different types of activities (accounting, marketing, communication, event organisation, document drafting etc.). Given that the core aim of this study is to examine multiple forms of object relations, a focused study allowing for in-depth analysis of object interactions was required. Consequently, rather than try to capture the diversity of administrative work the research

design sought a single accessible and practical site to examine as a case study. Initial exploration of potential study sites in Manchester revealed an on-going curatorial and renovation project at the Manchester Town Hall called 'Our Town Hall'<sup>1</sup>. The 'Our Town Hall' project aimed to present the stories of previous Town Hall staff, whilst also thinking about how to modernise the Town Hall in ways that suit the current and future requirements of its administrative work. The existence of an ongoing curatorial project at the Manchester Town Hall, and presence of enthusiastic Town Hall staff who were interested in participating in research, made the Town Hall stand out as a potential site of study.

The Manchester Town Hall is a particularly interesting and useful site of administrative work, primarily because of its long history as the centre of Manchester's municipal administrative services. The Manchester Town Hall was built in 1877 to house the offices of the Manchester City Council and its various municipal government departments. The Town Hall was expanded with an extension building and accompanying central library which were built in 1934 and 1938 respectively (Manchester Evening News, 2018). Whilst all three buildings are technically separate, they can be considered a singular or coherent site of City Council work. The extension was built to accommodate the increasing number of departments and offices needed by the City Council to keep up with the expanding scale and scope of its municipal administrative responsibilities (Wildman, 2016). These responsibilities continued to expand during the post-war period, notably when the Local Government Act was passed by Parliament in 1972 leading to the formation of the Greater Manchester metropolitan area. This led to the combined administrative and law enforcement responsibilities of various local governmental institutions across: Manchester, Salford, Bolton, Bury, Oldham, Rochdale, Stockport, Tameside, Trafford, and Wigan (Wollmann, 2019). This greatly expanded the administrative responsibilities of the Manchester City Council, and its need for communication and administrative efficiency and innovation (Brand, 2022). The formation of the Greater Manchester Area would eventually lead to the establishment of the Greater Manchester Combined Authority in 2011 as the highest local administrative body for Greater Manchester, and the office of Mayor of Greater Manchester in 2017 (Lupton et al, 2019). The Town Hall continues to develop to this day, and is undergoing the 'Our Town Hall' project, which is partially a curatorial program to record the experiences of previous Town hall staff. It is also part of an extensive renovation project with the aim to look at the history of the Town Hall's past development and changes to bring the building to contemporary standards, and to meet both current and future demands of municipal administrative work (Manchester City Council, 2022).

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<sup>1</sup> I want to give my thanks, again, to Meg McHugh and the staff at the Town Hall who took the time to meet with me, and who helped me navigate their archives and records. This includes a special thanks to the anonymous staff members who took part in interviews as part of this project.

The Town Hall is more than just a municipal building. It is a Grade 1 listed heritage building (which it received in 1952) and has been recognised for its architectural, cultural, and historical significance in Manchester (Manchester Evening News, 2018; Crinson, 2022):

*“Manchester has an enduring monument of the vastness of her riches and of the vigorous enterprise which marks her municipal government. For present purposes she possesses a Palace fit for the entertainment of Princes, which offers a luxurious home to her chief magistrate and which, while it is the centre of municipal life and action, exalts and dignifies the municipality”* (Waterhouse and McLeod, 1980).

The Town Hall reflects the transformation of Manchester as a city and some of the more thematic aspects of the thesis’s historical work, having been built during the height of the city’s expansion and the boom of its textiles industry, but has gone on to outlive this industry and has become a central hub in Manchester still growing administrative sector.

Whilst the Town Hall has a long and interesting history, ultimately the Town Hall was selected as the sole site of study because it met a few important methodological and practical requirements. It is a prominent example of a municipal building in which people have been engaged in administrative work, with the same aims, for over 150 years. At the same time however, the Town Hall has changed over time to adapt to the shifting administrative requirements of Greater Manchester and houses many distinct areas of administrative work such as: accounting, architects, policy development, customer service, social services, community event organisation. The Town Hall as a building has also remained mostly unaltered in its physical layout during its 150-year history, providing a mostly consistent site of study which allows a focus on examining changing office arrangements and practices without having to consider dramatic architectural or infrastructural shifts that come when offices completely renovate or move to new locations. In terms of data resources, the Town Hall is a public government building with extensive archives and records of its office practices and spaces, which can be used to gain insight into its past practices and arrangements of the office work. Methods for collecting and analysing this diverse body of potential data are further discussed in chapter 3.

The Manchester Town Hall served as the sole site of study and is not representative of other kinds or forms of public or private offices or administrative departments of other industries, which have their own staff organisation, office space layouts, and administrative tasks and responsibilities. Similarly, the selection of the Manchester Town Hall places constraints on what kinds of information and records are accessible for this research (Frasso, Keddem and Golinkoff, 2018). Overall, the Town Hall serves as a broadly consistent site of administrative work and provides direction for the kinds of data

sources which the thesis could access. Selecting the Town Hall provided a starting point for identifying what kinds of data and methods would be needed examining different forms of relations between objects, and how these relations change within specific sites of administrative work between 1960 and 2010.

## **1.2. Summary of chapters**

This thesis has two aims: first to show how material, spatial and practice-based object relations form, and change; and second to generate ideas about how these relations might potentially be interpreted and represented by museums in their curatorial and exhibition work. This involved approaching the examination of objects from multiple angles and considering a variety of concepts and methods with which to identify, examine, and articulate these changing relations.

Chapter 2 *'From Objects to Object relations'* moves through a discussion of how objects (and their various forms of relations) have been interpreted in museology and the social sciences, and the potential of a 'relational' approach for using objects to narrate change in administrative work in the Town Hall between 1960 and 2010. The chapter introduces a selection of disciplinary perspectives from across the social sciences which provide different approaches for examining object relations, namely: anthropological and material culture studies; science and technology studies; Actor-Network Theory; studies of consumption; and theories of practice. These different perspectives provide a range of key concepts for thinking about object relations. This chapter groups these concepts together to discuss three broadly different forms of object relations: 1) how objects are related through their material features; 2) how objects are related within and across spaces; 3) how objects are related through the practices they become part of and used in. The chapter concludes by briefly discussing the potential for using a 'relational approach' to examine and present objects, and how this approach might be used by contemporary museologists and curators.

Chapter 3 *'Methodologies for Examining the Changing Administrative Work in the Manchester Town Hall'* explains the methodological rationale and design of the thesis and systematically discusses the methods used for collecting, sampling, and analysing three sources of data: archive records, photographs of the Town Hall, and interviews with Town Hall staff. This includes reflecting on the challenges of the various methods employed in this research, and the ethical considerations that needed to be addressed. The chapter concludes by outlining how chapters 4, 5 and 6 examine different objects, spaces, and practices in the Town Hall, and often across different periods of time. Each chapter uses different combinations of archive records, photographs, and interview data to suit their specific lines of inquiry and examinations of objects relations in the Town Hall.

Chapter 4 '*Originals and Copies*' focuses on how objects are related through the ways they physically interact, consume, and change each other (i.e., staplers binding sheets of paper into a single document). To examine these material-based relations, a biographical approach was adopted which examined how these relations shape the trajectories of objects like original and copied documents. The key aspect of this approach was to compare three different copying configurations which co-existed in the Town Hall during the 1980s and 1990s: carbon copying; photocopying; and computer copying. The chapter 'follows' the trajectories of the originals and copies being used and produced in each configuration and shows how the roles and understandings of these originals and copies for different Town Hall office workers were informed by some of the direct and physical ways they interact and connect to other objects.

Chapter 5 '*Desks, Offices and Infrastructures: Object Relations across Space and Time*' focuses on how objects are related and organised within and across spaces and held together through various infrastructures (i.e., objects being arranged on a desk by workers, or networked together across offices by the internet). This chapter examines and re-examines these spatial-based relations across three spatial scales (the desks, offices, and infrastructure of the Town Hall treasury) and two periods of time (1960-62 and 1979-80). The chapter examined and re-examined these relations using three different conceptualisations of 'space': space as a container of objects which are configured and spatially related via their physical properties and design; space as a dynamic intersection of relations between objects and people; and space as a dynamic dimension of relations which can extend across the globe.

Chapter 6 '*Appropriating Email into Administrative Practices and Existing Object Relations*' is about how objects relate through their shared appropriation and roles within administrative practices in the Town Hall. These relations between objects are often informed by the ways in which 'new' objects are incorporated into administrative practices. The analytical approach used in this chapter was to 'follow' email as an object which was introduced and appropriated into the Town Hall during the 1990s and early 2000s. This approach focused on presenting the multistable, diverse and sometimes contradicting narratives of email appropriation into the Town Hall, based on the first-hand experiences of a small selection of eight Town Hall staff. The research included examining how the introduction of email into different office practices led to the reshaping of previously established relations between objects, and performances of office workers across the Town Hall's departments.

In conclusion, chapter 7 reflects on the key concepts which emerged during this research, in particular the ideas that objects are simultaneously multistable and have trajectories. This concluding chapter ends with a discussion of how concepts such as object relations can be conveyed and

represented in part of exhibitions and displays in ways which facilitate telling non-conventional and non-linear narratives of changing administrative work in the Town Hall. Contemporary museums already have some of these methods in their 'toolbox' which could be adapted to this purpose, such as vignettes, object biographies, and interpretive dioramas.

## Chapter 2: From ‘objects’ to ‘object relations’

This thesis is located within debates regarding how and in what ways objects can be interpreted and used as representations of societal change by museums. The definition of what museums are and what their purpose and function in society is has constantly evolved, especially in the last few decades. The International Council of Museums (ICOM) has recently approved a new general definition for a contemporary museum, that it is a “*museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection and knowledge sharing.*” (ICOM, 2022). What the roles of objects should be in museums remains a central and ongoing debate across different museological discourses and philosophies: notably whether objects themselves are the focus of museum or are in service to the development of narratives and themes; and what features, characteristics or aspects of objects should be focused on empirically.

One of the ways in which contemporary museologists (Van Beurden, 2018; Sitizoa, 2018; Abungu, 2019; Loddo et al, 2021) have attempted to engage with these questions has been to consider interdisciplinary approaches to conceptualising objects, and to draw methods of study and theoretical concepts and ideas from outside museology, such as from the social sciences (Schorch and McCarthy, 2018; Larsen, 2018, Simpson, 2019; Wang and Yu, 2020). This interdisciplinary tradition is continued in this thesis, which argues that one approach to representing changing administrative work is to focus on the relations that are shared between office objects.

This chapter moves through a discussion of ‘objects’ to ‘object relations’, considering in turn: what they are; how they can be interpreted in museology and the social sciences, and the potential of an ‘object relations’ approach for using objects to present multiple non-linear narratives of changing administrative work in the Town Hall. Section 2.1 discusses the roles of objects in museums, and important developments and debates around the conceptualisation of objects in museology in the last three decades, focusing on the work of Van Mensch (1992), Vergo (1997), Witcomb (1997), Lorente, (2012) and Shelton (2013).

Section 2.2 introduces key disciplinary perspectives from across the social sciences, namely social practice theory, actor-network theory, post-phenomenology, and science and technology studies, and briefly reviews how each conceptualises objects, and their proposed approaches to empirically studying them. Objects are conceptualised differently across these perspectives, some placing objects as the focus of analysis (e.g., affordance theory) whilst others conceptualise objects as part of more



extensive social, material, and cultural arrangements (e.g., social practice theory). A range of key concepts for exploring object relations have been identified from across these disciplinary perspectives, including: affordances (Gibson, 1977); scripts (Akrich, 1997); social practices (Shove, Pantzar and Watson, 2012); spaces as innovation junctions (De Wit et al, 2002); and the multistability of object lives (Idhe, 1990). It is argued that these concepts place more or less emphasis on material, spatial, and practice-based relations. This chapter concludes by summarising the potential of using a relational approach to examining and presenting objects as part of museological and curatorial work (i.e., in the development of museum exhibitions).

## **2.1. What is museology? The roles of objects in museums**

*“All of our research starts with objects – things that people have made and used – from ancient flint tools found at the oldest ancient human site in Northern Europe to contemporary Middle Eastern art.”*  
(The British Museum, 2022: p.1)

Museology is *“the study of museums, their history and underlying philosophy, the various ways in which they have, in the course of time, been established and developed, their avowed or unspoken aims and policies, their educative or political or social role”* (Vergo, 1997: p.1). Objects occupy a key role in the work of museums which collect, study, interpret and present objects in exhibitions and research to describe historical narratives (Alberti, 2005). There has been continuous debate within museology as to the degree to which museum exhibitions should be about presenting the objects themselves (object-driven exhibitions) or presenting a historical narrative, theme, or idea through objects (idea-driven exhibitions). In the late 1980s a new wave of European museologists, such as Peter Vergo, Georges Henri Riviere, and Pierre Mayrand, critiqued museums for their often-hegemonic presentation of past peoples, especially of non-western cultures (Vergo, 1997; EVE Museology, 2015). Such critiques have led to debates that are often characterised as ‘old’ and ‘new’ museology (Vergo, 1997; Recupero et al, 2019; Lee et al, 2020), the former rooted in objectivist and positivist approaches, and the latter in constructivist and interpretative approaches (EVE Museology, 2015). At the core of this debate are questions about what the goals of museums should be and the role of objects in realising those goals.

In simple terms, ‘old’ Museology considers the primary goals of museums are to curate and present objects objectively, with the belief that objects are capable of being neutral representations of the cultures from which they originate (Stam, 1993; Witcomb, 1997; McCall and Gray, 2014). Vergo (1997) concisely summarised this perspective, stating that central to the philosophy of ‘old’ Museology is a focus on the objects themselves, and that *“the idea that artefacts can be, and should be, divorced from their original context of ownership and use, and redisplayed in a different context of*

*meaning, which is regarded as having a superior authority*" (Vergo, 1997: p.9). 'New' Museology emerged from criticisms that museums were institutions that reinforce elitist and hegemonic cultural views. Proponents were critical of how traditional museum methods portrayed accounts of history from a 'realist' perspective (Witcomb, 2003; Witcomb, 2013; Lee et al, 2020; Rose, 2016). This critique is especially seen in debates around the use of museum dioramas, which are three-dimensional miniature or life-sized representations or interpretations of historical or natural scenes which use furniture, objects, mannequins and sometimes taxidermized bodies (Wiel, 2014; Nielsen, 2017). Dioramas have been a staple method in museums since the 19<sup>th</sup> century and were seen as useful tools for embedding objects within a historical or geographical context (Marandino et al, 2009; Reiss and Tunnicliffe, 2011). Contributions to the Museum sciences literature (Bitgood et al, 1990; King and Stewart, 1996; Baluyut, 1998; Low et al, 2001) often discuss dioramas as being able to display a (more or less) accurate account of history or of past events and places. This literature broadly falls in line with 'realist accounts of history that suggest that history is a part of an objective reality that is separate from human perception and understanding (Casti, 1989; Yarusso, 1992; Osborne, 1996). This explains De Chadarevian and Hopwood's (2004) description of the 'authentic' power of dioramas as portrayers of objective or 'real' historical reality (Chalmers, 1976; Campbell, 1998). Dioramas have been criticised for presenting a fixed view of historical events and places, with Reiss (2019) arguing that dioramas "present a distinctive staging of reality" (p.1) and that their designs are heavily shaped by the intentions of the designers and constructors.

New Museology discourse recognised the inherently political and subjective nature of museums and their work in portraying historical narratives, and that "*reality can never be reached in any pure objective sense. It is always mediated by social and cultural values—it is always "constructed". All we ever have, therefore, are representations and abstractions of the real, even when dealing with objects.*" (Witcomb, 2007: p.385)<sup>2</sup>. In 'New' Museology objects are less important than the ideas and themes they can represent as part of crafting a historical narrative or discussion, the key to which is the interpretation of objects: "*The making of meaning, the construction of understanding, is reached through the process of interpretation*" (Hooper-Greenhill, 1994: p.12). Reiss (2019) suggests that whilst methods like dioramas cannot portray 'authentic' or 'real' history, they can be used to construct subjective narratives of the past. The concepts of 'milieu' and 'context' become especially important for curators and museologists, especially for thinking about how objects are presented in

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<sup>2</sup> This shift in museology is possibly relates to similar developments of social constructivist ontologies found in sociology which gained traction in the 1970s and 1980s, which also include a focus on the concepts of 'milieu' and 'context'. For example, Latour and Woolgar's (2013) 'Laboratory Life' which debated the positivist and objective nature of the production of science and scientific facts, laying a groundwork for further social constructivist discourse.

exhibitions (Hooper-Greenhill, 2000; Kim, 2018). The aim of this interpretive approach is to provide more democratic and less hegemonic interpretations of history (Vergo, 1997; EVE Museology, 2015).

Witcomb (1997) suggests that part of displacing objects as the focus of exhibitions is embracing other forms of visual media to craft narratives: *“Ideas driven exhibitions tend to have a heavier use of non-traditional media to tell stories. Photographs, film, video, oral histories, and computer interactives are all recruited to help construct the narrative.”* (Witcomb, 1997: p.387). This focus on enhancing the experience of museum visitors is seen today in new projects such as Lee et al’s (2020) use of virtual reality in museum tours, and De Jong’s (2018) use of video interviews to provide first-person testimonies intertwined with exhibition narratives. These approaches fit into the wider philosophy of interpretation, subjectivity and constructivism espoused in the tenets of New Museology (Rose, 2016; Kim, 2018; De Jong, 2018; Lee et al, 2020). Researchers in different museological fields continue, however, to critique the degree to which museums have successfully adopted the (admittedly wide ranging) ideas and philosophies of New Museology (Dewdney, Dibosa, and Walsh, 2012; Kirsten et al, 2019; Lee et al, 2020). A key criticism is that whilst New Museology provides an alternative discourse for the goals and theoretical approaches of museums, it does not provide a particular praxis or method of study for museums to adopt (Lorente, 2012; EVE Museum Journal, 2015).

In the late 1990s this debate was furthered by a turn towards interdisciplinary perspectives that captured in what is described as critical Museology (Stam, 1993; Lorente, 2012). Critical museology shares many of New Museologies’ ideas and principles, including the recognition that the work of museologists is *“a product of the society in which they are created, and thus are defined by the historical, political, and economic context in which museologists are immersed”* (Rojas and Tsagaraki, 2010; Lorente, 2012; Deschamps, 2019). These approaches are distinguished through the ways in which they emerged in the late 20<sup>th</sup> century, and by the ideas and disciplines from which they emerged. New museology discourses were written primarily by European ethnologists and museologists critical of established traditional museum practices and approaches to presenting historical narratives, such as Mayrand (1985), Vergo (1989), Riviere (1989), Van Mensch (1992), and Stam (1993). Critical Museology, in contrast, developed globally from a range of disciplines ranging from critical art history (Berelowitz, 1991; Duncan, 1995), and critical anthropology (Duncan and Wallach, 1980; Karp, 1991; Shelton, 1992a, 1992b; Butler, 1993; Cameron, 1997). This includes sociologists such as Walter Benjamin (1940), Max Horkheimer and Theodor Adorno (1944) and Michel Foucault (1966, 1970), who were arguably early contributors to what would become critical museology by way of being critical historians (Alberti, 2005).

Shelton (1997, 2013a, 2013b) argues that Critical Museology is defined by its examination of museum methods from an interdisciplinary perspective, with specific attention to examining the narratives and themes produced through museums as a form of cultural, artistic, and historical production (Bennett, 1995; Canclini, 1995; Morse, Rex, and Richardson, 2018). This includes considering alternative and creative ways of conceptualising and using objects to understand societal change (Shelton, 2013a; Eklund, 2020; Geismar, 2018; Kreps, 2019). Critical Museology, as with New Museology, encourages the development of more creative and non-traditional approaches to conceptualising, studying and eventually exhibiting objects to challenge museum visitors with alternative ways of viewing historical narratives (Lorente, 2012; Walz, 2015; Kirchberg, 2016; Sitzia, 2018).

Emphasis is placed on critically examining the methods by which historical narratives are conceived, developed, and represented through objects. The ways in which museums (alongside companies and governments) can shape public perception of objects and historical narratives is discussed in Pantaloný's (2011) historical and biographical analysis of the Theratron Junior machine. The Theratron Junior uses gamma rays to treat cancer and is part of the Canada Science and Technology Museum's nuclear exhibit (as opposed to its medical exhibit) and historically has been presented by the Canadian government and by Atomic Energy of Canada's Limited (its creator) and as an example of the positive contributions of nuclear technology. The Theratron was subsequently used by these various organisations to shift public perception of broader nuclear technology during the post-war period, moving the discussion away from nuclear weapons and dangerous radiation and associating nuclear technology with progress, health, and human achievement. The Theratron Junior has since become strongly associated with the history of Canadian and American nuclear technology, rather than medical history, despite being used as a medical device. The case of the Theratron is illustrative of the influence that organisations (and their agendas, goals, and methods) have in shaping how objects are displayed, grouped together and then discussed in the public sphere.

The influence of both New Museology and Critical Museology is felt in contemporary museological practices and discourse, a notable example being the development of post-colonial museum studies and practices (Butler, 2003; Bouquet, 2013; Van Beurden, 2018; Abungu, 2019). Post-colonial museum studies involve the re-assessment of concepts like 'power' and 'economics' in museum practices, and how museology and museums are still shaped by colonial and imperial structure of power (Wintle, 2013; Brown and Mairesse, 2018; Loddo et al, 2021). It draws from emphasis within New Museology that *"what museums are, what they become, boils down to a question of power: who controls their research and their collections"* (Chaplin and Klein, 1992: p.63), and from Critical Museology's emphasises on re-assessing museum operations by examining how the political and economic context of museologists produce abstractions of history which inevitably reflect these

contexts (Lorente, 2012). Post-colonial museum studies develop these ideas by discussing how visual methods (including the presentation of objects), can entrench or challenge established cultural stereotypes and cliches, and provide new experiences and perspectives (Faulkner and Ramamurthy, 2006; Van Beurden, 2018; Fuggle, 2021). This stresses the importance of continuously re-examining the processes by which museums conduct their theoretical and practical and the roles that objects play in this.

The focus on re-examining established and traditional historical narratives through museum collections has become a key objective of many contemporary museum groups. For example, National Museums Liverpool, the largest group of museums in the UK, has a 2030 strategic plan which outlines its core goals for the next decade, which is titled 'Creating Memorable Experiences for Everyone - Challenging Expectations'. This strategic plan is shared across its eight museums and galleries and includes aims to become more representative of diverse audiences, and to engage and empower people from different cultures and backgrounds (National Museums Liverpool, 2019). This thesis engages with these continuing debates in museology around how to conceptualise objects, and their roles in representing historical narratives. Importantly it is argued that one potential approach to re-interpreting established and traditional historical narratives is through examining and presenting museum collections with an emphasis on portraying the connections and relations between objects.

## **2.2. Conceptualising changing relations between objects**

In the last few decades museologists and curators (such as Schorch and McCarthy, 2018, and Wang and Yu, 2020) have drawn inspiration from outside museology itself, such as from the social sciences, in an effort to expand their 'toolbox' of approaches to examining and presenting objects. Object relations are at the core of enquiry for a number of social science disciplines, including anthropology, Science and Technology Studies, Actor-Network Theory, sociology of consumption and innovation studies. This section provides a very broad introduction to these disciplinary approaches, followed by the identification and discussion of key concepts relevant for the study of object relations. To organise the discussion, concepts are grouped with respect to the degree of emphasis placed on: direct material and physical object relations; object relations within and across space; and relations through practices.

Anthropological theories, such as those developed by Appadurai (1988) and Miller (1987; 2013), focus on how the conception, development, and production of objects (as a unit of analysis) reflects the cultural and social circumstances in which they are located, especially in the study of material culture (Fleming, 1974; Miller, 1987) and the social life of things (Kopytoff, 1986; Appadurai, 1988).

Methodologically, this often involves developing object biographies which detail how objects were

made, and how they came to be used, with an understanding that objects can come to be understood differently and hold different meanings throughout their 'lives' (Tilley et al, 2006; Miller, 2013).

Authors writing in the tradition of Sciences and Technology Studies (STS), for example Wiebe Bijker (2001), Steve Woolgar (1990), and Lucy Suchman (2005; 2007), are interested in the innovation, diffusion, and adoption of technologies within society. These theories draw from a constructivist ontological position to studying social phenomenon. STS includes a wide variety of key ideas, not all of which are compatible with each other, including social shaping (MacKenzie and Wajcman, 1999) and sociotechnical change (Bijker and Law, 1994; Bijker, 1997). However, a commonly shared idea across STS is that technologies are developed within specific times and places, and are often intrinsically connected to social, cultural, political, and economic contexts. Understanding objects, and how they integrate and change within society subsequently involves examining technologies within these contexts.

Actor-Network Theory (ANT) is broadly associated with the works of Latour (1992), Law (2009), Akrich (1997) and Callon (1999). It is a theoretical paradigm of material and object analysis developed from STS (Cressman, 2009; Stockbruegger and Bueger, 2017). ANT distinguishes itself from STS through its material-semiotic approach to exploring social phenomena, in particular through its central concept of actor-networks. Actor-networks are diverse arrangements or groups of human and non-human actors which relate, connect, and interact with each other as part of different activities. To examine these networks of human and non-human actors, and how they 'act upon' each other, ANT proposes an approach which involves 'following the actor' through a network to identify its many interactions and connections to other actors. In doing so a 'picture' is formed of a network of inter-related and connecting actors, or actor-networks (Law, 2009). According to Stockbruegger and Bueger (2017), it is in this way that ANT is more of a method than a theory, which does not seek to explain how or why networks take a specific form or structure but to identify networks and the inter-relational ties of their actors.

Relations between objects are also a core focus in studies of consumption, which focus on the meanings and uses of consumer goods. For example, in his overview of the sociology of consumption Warde (2014, 2016) describes how studies of consumption bring attention to how objects are acquired, appreciated, and appropriated in everyday lives. 'Acquisition' refers to how and why people get things and is often researched in the context of debates around inequality and welfare (Hirsch, 1977). 'Appreciation' is concerned with the understanding the symbolic, communicative, and cultural value of objects (Bourdieu, 1979), and their roles in expression and identity making (Featherstone, 1991; Giddens; 1991; Bauman; 1997), and the relationships between social groups (Hebdige, 1979).

'Appropriation' is about how objects are brought into and become normalised within everyday lives (Welch and Warde, 2015). In the sociology of consumption, object relations are mediated by the processes through which they are consumed (and the people that consume them) - whether that is in terms of the accessibility, through forms of expressive lifestyle, or in the ways in which they are appropriated into practice (Warde 2005).

Theories of practice are particularly helpful with respect to drawing insights from studies of consumption and its focus on how objects are consumed with those from STS which emphasis the contexts in which objects are situated (Halkier, 2009). Theories of practice emerged in the 1970s<sup>3</sup> as a broad constellation of theories which seek to explain how heterogenous elements of society interact and shape one another to form identifiable social practices (Reckwitz, 2000; Warde, 2014). At the core of theories of practices is the concept of social practices, which are broadly conceptualised as being both recognisable entities, and as coordinated performances enacted by people. As entities, social practices are easily recognisable and identifiable through the materials (i.e., objects, infrastructures), understandings (i.e., the meanings associated with the practice), and forms of competence (i.e., skills) that constitute and characterise them (Shove, Pantzar and Watson, 2012). Here, objects are considered to be one of numerous elements through which practices are arranged (Shove, Pantzar and Watson, 2012; Shove and Spurling, 2013; Yli-Kauhaluoma, Pantzar and Toyoki, 2013). The latter conceptualisation recognises that it is in the performance of practices that the materials, understandings, and competencies that make up practices are reproduced, improvised upon, and can change (Shove, Pantzar and Watson, 2012; Shove, 2016).

The approaches discussed above each identify different ways of conceptualising how objects connect and interact. Importantly, they vary with respect to the degree of emphasis placed on the materiality of objects, the significance of spatial contexts, and the extent to which the ways that objects are appropriated into practice (or used). One study which places heavy emphasis on the variations of relations between objects is De Wit et al's (2002) STS-based analysis of the sociotechnical history of typewriters and other office technologies in the Netherlands. They argue that objects cannot be understood as individual things isolated from the relations which characterise and define their understanding and use in specific locations and times. They argued that because objects/technologies *"were used in the same location and for more or less interconnected tasks, they had to be geared to each other to an increasing extent and so became, in various ways, more and more interdependent"* (De Wit et al, 2002: p.54). Importantly for this thesis, De Wit et al indicated diverse ways in which

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<sup>3</sup> Theories of practice encapsulates the work of a wide variety of social theorist including Foucault (1979), Bourdieu (1979), and Giddens (1979, 1986).

relations between objects are mediated: objects can physically interact and alter each other; objects can influence how other objects are organised and arranged within spaces; and objects often require people to develop sets of rules or systems of coordination to be effectively used in practice. The remainder of this section explores these three different forms of object relations in more detail and brings out key concepts from the disciplinary perspectives outlined above which might be used to further examine object relations.

### How are object relations shaped by material features?

Objects are designed with material attributes and features that influence (often directly) how they are used and understood by people. Examining the materiality of objects, and how this shapes their understandings and use, is a feature of several conceptual and methodological approaches. Gibson (1979) (an ecological psychologist) for example, developed an approach in which he argued that the values and meanings that underpin objects could be revealed through the physical affordances of objects (Ye et al, 2009). Part of this approach is arguing that the material properties and features of objects 'afford' and 'constrain' the potential ways in which they can be used, and how people perceive their environments (Greeno, 1994; Norman, 2013; Chong and Proctor 2020). The affordances of an object are not inherent, but perceived by users and are relational in nature, and in simple terms affordances of an object refers to what that object can offer, provide, or do for a particular user (Gibson, 1977; Gibson, 1979). This means the meanings and value of an object can vary from person to person. Gibson explains that affordances of objects can influence users even if they are not aware of them. The affordances of objects are learnt and are a consequence of how things are used in practice, changing depending on who is using the object (Greeno, 1994; Gibson, 2000). This means that affordances are relationships, between people, their surrounding environment, and the objects they interact with (Gibson, 1979; Norman, 2013).

Actor-Network Theory (ANT) has a similar focus on examining the relationship between objects and users, most notably in Akrich's (1997) concept of 'scripting' and 'describing' objects. Law (2009) argued that objects and humans occupy approximately equal status as actors within social networks, and that objects can shape human behaviours and activities in much the same way that humans shape the usage of objects (Cressman, 2009; Stockbruegger and Bueger, 2017). Akrich (1997) argues that objects are 'inscribed' by how they are designed by their manufacturers, often reflecting the specific ideas and predictions the designers make for how their products could and should be interacted with by people. These features shape how objects are understood or 'read' by users, and then subsequently used in practice. How users read these objects is also influenced by the cultural, economic and social contexts in which the human-object interaction takes place, allowing for the



same objects to be re-read differently in different contexts by different people. The key point highlighted by Akrich is that objects can 'act' on other actors (objects or humans), shaping interactions through how they are 'inscribed', and subsequently can be understood to be social elements in society in many similar ways as people (Akrich, 1997; Silverstone and Haddon, 1996; Law, 2009).

Gibson's notion of object affordances and Akrich's concept of object 'scripts' both emphasise the importance of identifying and then examining the relationship between objects and people. De Wit et al (2002) takes this examination further, arguing that objects exist in complex configurations which are held together and constituted through sets of relations between objects (including the ways in which they directly and physically interact with each other). De Wit et al found that these forms of material-based relations are location-specific and identified two separate ways objects can be related through their interactions. First, two or more objects can be used in tandem, either through a shared user (i.e., a typewriter and a dictaphone) or more directly via a shared technological interface or attachment (i.e., punchcard attachments for typewriters). Second, objects can replace or merge the functions of other technologies or people, such as the typewriter which combined the activities of writing and copying. However, De Wit et al do not examine how individual objects can go through divergent phases or periods in their 'lives' and subsequently move through different sets of relations (Cortada, 2013; Blue and Spurling, 2016).

Latour and Lowe (2008), by contrast, present an approach to examining objects which focuses on 'following' specific objects over time, using their idea that objects have trajectories/careers. Over the course of these trajectories/careers, it is possible to examine how objects enter different sets of relations over time, and in turn see how their roles, understandings and uses in practices can change. This approach is based in Latour's earlier work arguing that objects are in a constant state of potential change and can exist in various sets of relations during different periods of their life (Latour, 1992). Latour and Lowe's approach is itself also rooted in cultural anthropological ideas of cultural biographies developed from Appadurai's (1988) 'the social life of things', the central idea of the biographical approach being *"that the meaning of an object and the effects it has on people and events may change during its existence, due to changes in its physical state, use, and social, cultural and historical context."* (Van der Vall et al, 2011: p.3). This approach focuses on the idea that individual objects (even of the same make or model) have their own separate stories that follow their own timelines and manifest their own specific sets of dynamics with both other objects and people (Van der Vall et al, 2011; de Leon, 2016). This is often revealed through object interviews which involves asking several questions that frame the understanding of objects in terms of:

*“Where does the thing come from and who made it? What has been its career so far, and what do people consider to be an ideal career for such things? What are the recognised “ages” or periods in the thing’s “life,” and what are the cultural markers for them? How does the thing’s use change with its age, and what happens to it when it reaches the end of its usefulness?”* (Kopytoff, 1986: p.66).

Latour and Lowe encourage examining the life of an object as a whole trajectory, consisting of various partial biographies involving the beginnings and endings of different sets of relations which that object was immersed in during different periods in their trajectories.

This section brings attention to how object relations are based (at least in part) within their material and physical features and designs and, for the purpose of identifying concepts to inform data analysis and interpretation, can be grouped together as concepts focused on ‘material-based relations’. An important idea introduced in this section is that objects have trajectories and the potential to leave and enter different practices and locations over the course of their ‘careers’ or ‘biographies’<sup>4</sup>.

Following this logic, this thesis considers how objects might also leave and enter different sets of relations with other objects over their trajectories through the Town Hall. These material relations between objects will be examined further as the focus of chapter 4.

#### How are object relations spread within and across spaces?

Objects can be examined through the ways they are configured and relate to each other within and across space. This examination depends on how ‘space’ is conceptualised and defined, which is its own debate across different disciplines of social science (Gregory, 1984; Lefebvre, 1992; Zieleniec, 2007; Werlen, 2003). Space can be conceptualised as a ‘container’ in which objects are organised and arranged based on their features (i.e., size, electricity requirements) and how they are used (i.e., at a desk). Alternatively, space can be understood as a junction or intersection of relations between objects and people, and in this sense is constantly changing in tandem with these relations. Finally, space can be understood as a constantly renegotiated site of both intimate and global networks between objects, people, infrastructures, and organisations.

Gibson’s (1979) notion of object ‘affordances’ has a conceptual focus on the physical and material features of objects. Part of this involves considering the ways the physical features and design of objects also affords and contains the ways in which objects are organised within spaces (i.e., on a desk). In this context, the affordances of objects play a role in determining how objects are arranged

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<sup>4</sup> Across Appadurai (1998) Latour and Lowe (2008) the terms ‘biographies’, ‘careers’, and ‘trajectories’ are used to describe the same general idea that objects change over time as they enter new arrangements, practices, meanings and uses.

in space (i.e., their size, weight, power requirements, hazards) including what kinds of spaces certain objects are likely to be found in (Fayard and Weeks, 2014). Similarly, Akrich's (1997) discussion of scripts supposes that objects are intentionally designed with specific uses and contexts in mind, which are imagined and hypothesised by their designers. Part of this hypothesising involves designers imagining the spaces within which the relationships between objects and users play out. 'Space' is something that designers consider as part of how they inscribe their products (Latour, 1996; Smith and Bugni, 2006; Søliland, 2021). Gibson and Akrich's accounts of space are similar, in that they both effectively conceptualise space as a bounded and bordered 'container' into which objects are 'fitted' and their relations configured, at least in part, by the spatial properties in which objects are located. Empirically, seeking to identify familiar setups or configurations of objects within spaces (i.e., typewriters on desk surrounding by paper, see Symes, Ellis and Tucker, 2005), represents a method for analysing the spatial aspect of object relations. Both Gibson and Akrich's accounts of space identify that spaces (buildings, rooms etc.) are designed or 'scripted', with features, physical properties and dimensions that influence how those spaces are used. An example is the infrastructure of buildings and rooms, such as the electricity grid and the locations of plug sockets in rooms, which affects where certain kinds of objects will likely be placed and used. In this sense, spaces like offices are similar to being very large objects, that contain within them, various sets of people and smaller objects.

A different interpretation of 'space' comes from De Wit et al's (2002) study of typewriters in 19<sup>th</sup> and 20<sup>th</sup> century Dutch offices, a key aspect of which was their own conceptualisation of space, arguing that spaces like offices are 'innovation junctions'. Innovation junctions are defined as metaphorical spaces where different objects co-exist in location specific arrangements that are collectively directed towards shared social or economic activities. Objects then become interdependent via their spatial relations, and within these junctions objects become part of configurations of relations organised within and across different spaces. Important to this definition of space, is that innovation junctions create the conditions for technological change and development. De Wit et al explain that 'innovation junctions'<sup>5</sup> like offices can change with the introduction and integration of even a single object, which can reshape established relations of objects organised across that space (De Wit et al, 2002; Dale and Burrell, 2007; Burrell, 2012). This involves the potential to reorganise established arrangements of objects, and through this lead to new sets of spatial relations between objects. In De Wit et al's study, these changes came with the integration of computers, which played a role in displacing typewriters and other related objects such as carbon paper, Dictaphones, and typewriter ribbons. In this sense,

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<sup>5</sup> In this context, De Wit et al refer to innovation as the ways in which objects become interdependent on each other to function, and the types of systems, rules, and orders that people create to organise themselves alongside the objects they engage with in specific contexts, such as how people create rules for typewriting in offices.

space is conceptualised as an intersection for relations between objects which is always changing as objects emerge and disappear from them.

There are also broader interpretations of space, which argue that space can be conceptualised as having no specific location or borders. For example, Silverstone and Haddon (1996) used their Design-Domestication Interface Model to argue that there is no such thing as 'technology itself' as it is the wider context and situated circumstance of a time that allows a technology to emerge. Relations between objects are situated within and across multiple scales of space, from intimate actor-networks contained within spaces like rooms and desks, to more extensive actor-networks where space is a site of interactions, and interactions between actors taking place across the globe.

Conceptualising space without fixed boundaries is at the core of the work of cultural and social geographer Doreen Massey (1994, 2005, 2013). Massey sets out three propositions regarding her conceptualisation of space. First, space is a social dimension that is "*the product of interrelations; as constituted through interactions, from the immensity of the global to the intimately tiny*". Second, space is "*the sphere in which distinct trajectories coexist; as the sphere therefore of coexisting heterogeneity*" and that, "*[I]f space is indeed the product of interrelations, then it must be predicated upon the existence of plurality*". Third, space is "*always under construction. Precisely because space on this reading is a product of relations-between, relations which are necessarily embedded material practices which have to be carried out, it is always in the process of being made*" (Massey, 2005; p.9). Collectively, these propositions conceptualise spaces as borderless 'sites' of extensive networks of relations and is also subjectively realised by different groups of people. Objects can then be seen to be part of more extensive, and often less visible networks of relations which extend to broader institutions and forms of infrastructure (i.e., telephone lines).

Massey presents a flexible account of space which shares similar, and potentially compatible, ideas to those found in ANT. For instance, Massey argues that space is never 'done' but is being constantly renegotiated through the process of making and remaking of relations. As such, Massey examines space as something that is always made 'in the moment' where interrelations (from the intimate to the global) come together (Massey, 2013). Likewise, Murdoch (1998) and Hinchliffe (1996) argue that in ANT space and time are intrinsically relational in nature and are configured and defined as part of actor-networks themselves, or as Harvey (1997) explains "*space and time are not... independent realities, but relations derived from processes and events*" (Harvey, 1997: p.256). In actor-networks, time and space are subsequently conceptualised in ANT as being generated together, creating temporal-spatially specific configurations of relations between human and non-human actors (like objects) (Hinchliffe, 1996; Murdoch, 1998). Massey's approach is to examine the simultaneity and

multiplicity of how things like objects and people exist together in a particular moment, and likewise the approach of ANT is to examine spatial and temporal relations of objects simultaneously, recognising that networks of scripted objects are part of their own space-time.

Overall, the ideas in this section highlight that how objects (and their relations) are examined is influenced heavily by the conceptualisation (or conceptualisations) of space being used. Three broadly distinct ways of conceptualising 'space' have been discussed, each bringing attention to different ways objects are related to each other across space. Gibson (1979) and Akrich (1977) suggest that spaces are 'containers' where objects and people directly interact, and that spaces themselves are also designed or 'scripted' with features that shape how objects or positions are used within them. De Wit et al (2002)'s conceptualisation of space differs by focusing on how objects and people become interdependent on each other as part of activities in specific locations like offices. Finally in Massey's understanding of space, the distance between things is not particularly relevant for understanding the relations between objects, and indeed the distance between objects doesn't stop them from having relations (Massey, 1994, 2005). This thesis will investigate how these conceptualisations can be applied to the examination of objects in the Town Hall across different scales of spaces, which will be the focus of chapter 5.

### How are objects relations mediated through practices?

Relations between objects are also formed and mediated through people, and how they use objects as part of practices. De Wit et al argued that 'new objects' are appropriated into practices through the efforts and organisational actions of people, which can mean other objects must be reconsidered or even replaced for office work to function properly. However, De Wit et al's focus was on the implications of integrating technologies into established office practices and systems of organisation more generally, and "*not so much on what actually went on in the office—at the shop-floor level*" (De Wit et al, 2002: p.54). They do not discuss the specific ways through which objects are organised through the work practices in specific office settings, or how the introduction of objects into offices reshapes the established everyday practices and experiences of office workers. This focus on the dynamics of everyday practices (and the roles of objects within them) is found in theories of practice, within which a variety of conceptual frameworks can be found that offer different interpretations of how objects can become related to each other through the ways they are used within, and appropriated into, practices.

Schatzki (2011) provides one framework for understanding the relationship between objects and social practices, starting with the idea that "*Social life, that is human coexistence, inherently transpires as part of nexuses of practices and material arrangements*" (Schatzki, 2011: p.129). In his view, social

practices (and their practitioners) and material arrangements (which include objects) are separate but do co-construct each other. On the one hand, practices shape how particular material arrangements are configured and how specific material entities are engaged with. Simultaneously material arrangements shape the locations and ways in which practices are engaged and performed by practitioners (Schatzki, 2010). Following this logic social practices and material arrangements are inseparable in nature and must be investigated alongside each other. This suggests that understanding how relations between objects are made and unmade requires looking at those connections through the context specific of practices and arrangements of which they are part.

Shove, Pantzar and Watson (2012) by contrast, argue against Schatzki's separation of practices and material arrangements, suggesting that objects and other material things make up practices, alongside the meanings and understandings of practitioners, and the skills and knowledge needed to perform that practice. Shove (2016) argues that the roles of objects in practices are not fixed but relational and as such the same objects can be understood and used differently from one practice to the next. How objects are understood, and how they are connected through various material arrangements and social practices, are defined through the specific roles that objects have within a given practice or arrangements of practices. Furthermore, Shove (2016) suggests that objects can be: (a) infrastructural and are not directly (or necessarily consciously) interacted with by people in the performance of practices; (b) specific devices that are directly used in the performance of practices, and by extension likely become associated with the identification and doing of a practice; (c) resources to be consumed, used up or spent as resources in the performance of practices. Objects then, can occupy a variety of roles within practices, and can similarly relate to and exist in multiple different groups of objects associated with various separate practices. The status of an object therefore changes depending on the specific practice being examined. These 'practice-based relations' between objects are inconstant, unstable, and related to the changing understandings and performances of practices.

Objects do not always fit into and assume their own roles within practices seamlessly, and 'new' objects can emerge which can fulfil the same roles or be used in to complete the same activities as other pre-existing objects. Yli-Kauhaluoma, Pantzar and Toyoki (2013), suggest that objects don't simply replace one another over time based on notions of their 'performance', 'convenience' or 'efficiency'. Instead, objects like notepads or post-it notes can become ritualised into practices, despite the introduction of digital note taking. Similarly, relations between objects can be anchored in routinised activities. This suggests that within the same office setting objects can be disconnected from each other in the sense that they do not interact or work together, or otherwise struggle to co-exist alongside each other. Objects can also be in 'competition' with each other over particular roles

or functions in a practice, especially in the circumstances where new objects are introduced into existing practices (De Wit et al identifies a similar process when observing how Dutch offices slowly replaced their typewriters with computers) . In this manner, studying relations between objects in office practices is as much about understanding the ‘disconnectedness’ of objects, as it is their ‘interconnectedness’.

The work of Shove, Pantzar and Watson (2012), Yli-Kauhaluoma, Pantzar and Toyoki (2013) and Shove, (2016) suggest that the same objects can be experienced in multiple ways by different types of people (i.e., different workers in different types of work) (Yli-Kauhaluoma, Pantzar and Toyoki, 2013). This idea of multiplicity in how people experience and understand objects is also explored in post-phenomenology, in which multiplicity is a key concept. Post-phenomenology is a philosophy of technology that focuses on empirical analysis of specific technologies and objects in practice, with emphasis on human-object relations. Post-phenomenology differs from theories of practice in that the former focuses on how people take up the use of objects as part of their lives, whilst the latter considers how objects are enrolled into practices. Objects are seen as mediators of human experiences, perceptions and activities, and objects are viewed as the starting point for empirical analysis (Verbeek, 2015; Rosenberger, 2017). A key concept of post-phenomenology is that objects are multistable in nature, appearing *“differently to different people and taken up in different ways”* (Turville, 2019: p.4), and subsequently both technologies and objects do not unfold in one context in a singular trajectory, and instead unfold and emerge in multiple ways (Ihde, 1990; Ihde, 2002; Rosenberger, 2014). Multistability has been described by Ihde (1990, 2012) through the analogy of an optical illusion, where objects can take on different appearances and uses, depending on the context. Experiences of objects can be contradictory from person to person, place to place, and practice to practice, with Turville highlighting that an object or technology *“can bring people together and keep them apart. It can create a freedom from time and place, and at the same time can make us feel like we are shackled to it”* (Turville, 2019: p.24).

The approach of post-phenomenology is to examine, in depth, how specific objects shape human-object relationships in practice, with an emphasis on examining the many, and often contradicting and subjective experiences and narratives of objects (Aagaard, 2017; Scharf, 2020). Post-phenomenological research often applies a genealogical approach to examining the history of objects, which involves examining how they emerge and become part of everyday life, often from multiple points of view (Ihde, 2012; Wellner, 2016). Foucault’s (1966, 1970) argument that there can be no homogenous account of history has been particularly influential in the development of this approach to historical examination. Post-phenomenology continues these ideas, by attempting to highlight the irregularity, inconsistency, and multiplicity of history. The concept that objects are ‘multistable’

highlights that there cannot be a definitive or 'typical' account of an object and its history (which like the object itself, is also multistable).

Together, ideas from theories of practice and post-phenomenology highlight that objects are constantly in flux in terms of their relations to each other, as well as in terms of their roles within various practices (which themselves also change over time). Both emphasise that examining objects in practices involves considering the multistability of objects and their relations, and the potentially many and contradicting narratives that emerge and co-exist with respect to how objects are experienced, understood and used in practice. Chapter 6 specifically considers the multistability of email in the Town Hall through comparing the accounts of Town Hall staff who experienced the introduction of email into their office work during the 1990s.

### **2.3. Conclusion: a relational approach to representing histories through objects**

The conceptualisation of objects, and their role in realising the social, cultural, and political goals of museum work remains important within museology. This thesis engages with these debates through the application of concepts drawn from the social sciences to analyse everyday office objects and considers the extent to which these concepts complement the increasingly reflexive philosophies of contemporary museums. Following the interdisciplinary example set out in *Critical Museology*, the thesis focuses on how conceptualisations of object relations, drawn from different disciplines across the social sciences, can be used to inform approaches to the use of objects to represent societal change within the field of museology. For the purposes of analytical clarity, concepts are grouped into three forms of object relations: material, spatial and practice-based.

Objects have material-based relations, which are the everyday ways in which they interact with, consume, and change each other as part of their use. For example, using a typewriters also involved the consumption of ink ribbons, and the use and combining of plain paper and carbon paper to produce documents and copies. These relations also compile into more extensive configurations of objects, networked together by their interplay of interactions. This leads to the following set of inquires which direct my research:

- What kinds of configurations of material relations exist in the Town Hall?
- How do these material relations shape the trajectories/careers of objects as they enter into different practices and activities over the course of their 'lives'?

Objects have spatial-based relations, which are the ways in which they are organised within and across space and held together through various infrastructures (i.e., objects arranged on a desk,



within and office, or across a building). In terms of how museums might examine and then represent spatially (and arguable temporal) relations between objects, the key questions that emerge are:

- How are objects in the Town Hall physically located and organised in relation to one another within and across spaces like desks, offices, and infrastructures?
- How do objects enter and leave spaces, as the working practices and details of office life in the Town Hall change over time?
- To what extent do the relations of objects spread across spaces and distances, from within the Town Hall and beyond?

Finally, objects have practice-based relations, by which I mean they are used together as part of specific practices into which they are incorporated. The same objects can be diversely experienced and understood by different types of practitioners, and the roles of objects (and their relations with each other) are not fixed or stable. The introduction of new objects into existing practices can lead to the reshaping of the roles of other objects, and the performances of users. This leads to the following lines of inquiry:

- How does the introduction of a 'new' object reshape established practices, and the established relations between objects in those practices?
- What kinds of diverging experiences and narrative tensions emerge with the introduction, integration, and normalisation of a 'new' object in the Town Hall?
- How are the relations between objects in practices shaped by the established expectations, procedures, and norms of the practices they become a part of?

These three forms of object relations offer different perspectives for examining how objects are situated within everyday lives, how they are organised and experienced, and the ways in which they may or may not change. In turn, developing understandings of how object relations are incorporated into everyday lives offers potential insights into debates within museology regarding how objects can be used to represent historical narratives and changing forms of everyday lives. Part of this interpretivist approach is to explore and emphasise the multiplicity of objects with respect to how they can be interpreted and used as representations of societal changes. Realising the potential of an 'object relations' approach requires examining how the relations between objects change over time in specific situations. To this end, the concluding chapter of this thesis reflects on the empirical findings to the above research questions and considers how those findings can inform museological and curatorial practice.

## Chapter 3: Methodologies for examining changes in administrative work in Manchester Town Hall between 1960 and 2010

The methodological approach of this thesis was developed to enable an examination of how various office objects were used in the Town Hall between 1960 and 2010. This period was selected based on the core aims of the study to examine changing administrative practices in the post war period (as discussed in chapter 1). As this chapter will discuss in detail, the 1960-2010 time-period was also a pragmatic choice given the limited availability of archive records and photographs from before the 1960, and 2010 marked the last years of employment for the interviewees selected for this study. Given the lines of inquiry discussed in the previous chapter, the methodology focused on investigating the ways office objects: physically connected and directly interacted during tasks; were located and arranged together within and across office spaces; and were appropriated into various office practices by different kinds of office workers. The key challenge of designing this methodology was that the relations between objects were situated within specific practices and spaces in the Town Hall, some of which no longer exist or have consistently changed over the last 60 years.

The methodological challenge of analysing objects, and the relations that emerge between them in specific spatial and temporal contexts, has been faced by others. De Wit et al (2002), Shove and Southerton (2000), and Wellner (2016), despite coming from different fields of social science, all faced similar methodological challenges and looking back at their own approaches highlighted potential methods to draw inspiration from. De Wit et al's (2002) methodological approach examined how typewriters in Dutch offices changed between 1880 and 1980 in terms of its design, and relationships with other technologies such as Dictaphones. Their primary source of data came from analysis of written records of Dutch offices, copied from public and private archives. Although De Wit et al were able to examine broad patterns of interactions and interdependencies between various objects and users across the 100-year scope of their study, they could not examine how these interactions played out in terms of everyday life. Shove and Southerton (2000) examined everyday interactions between objects and users in their study of how domestic freezers became normalised within UK domestic kitchens. In addition to analysing text-based materials, they also carried out in-depth interviews with staff at electric goods stores and people from suburban households. The personal experiences captured in these interviews provided key insights into how users/people understood and defined their relationships to freezers, and how these relationships changed over time. Wellner's (2016) study of cell phones employed a genealogical approach which (unlike the previous approaches) focused on considering multiple and potentially contradicting accounts of the same object or technology, in her case of cell phones. Using a wide selection of manuals, journal

articles and blog posts to develop multiple different perspectives, Wellner examined how cell phones (and objects more generally) were taken up in different ways by users based on their level of comfort and skill.

These three studies have different methodological approaches, but all emphasise using diverse kinds of data for identifying different aspects of objects, and their relations, within specific spatial and temporal contexts. These studies highlighted potential methods and kinds of data which this thesis could use to explore different forms of relations between objects, notably: textual data such as minutes, reports, manuals; visual data such as photos and catalogues; and primary data in the form of interviews.

This thesis sought a consistent office setting to study which would have access to these types of data. As discussed in chapter 1, the Town Hall was selected for its extensive records, accessibility, and consistency as a site of administrative work. Selecting the Town Hall also provided a clear direction for the initial scoping work of the thesis, which identified three sets of accessible data which fit the requirements of this research:

- 1) As a public government building, the Town Hall maintains publicly accessible archive records such as minutes, reports, and correspondence from the administrative work of the City Council from 1960 to present.
- 2) As an important historic landmark in Manchester, the Town Hall has often been the subject of various projects, renovations and events involving the photographing of its office spaces, between 1960 to 1990. These photographs are primarily held in the city archives.
- 3) Access to Town Hall staff, some of whom having worked in the building for over 30 years, who could be interviewed about their first-hand experiences engaging in administrative work across their careers.

These three types of data were not collected at the same time, and the thesis initially only collected and analysed selected archive records and photographs of Town Hall offices. Through this analysis certain office objects, being used with specific practices and spaces (and in certain time periods) stood out, for example, the early use of email in the Town Hall during the 1990s. Interviews with Town Hall staff were carried out later, following up on the objects, practices and spaces identified in the records and photos. These interviews focused on providing more detailed accounts of how office objects were: interacted with and used; organised within and across office spaces; and appropriated into administrative practices such as copying and communication.

This methodological design compliments an interpretivist research philosophy (discussed in chapter 2) and enables an examination of objects (and their relations) which recognise that specific objects such as individual computers have ‘trajectories’, over the course of which their uses, roles and understandings can change. Similarly, the variety of sources of data allowed for an emphasis on presenting the multiplicity of objects in terms of how they were combined and appropriated into different office practices. The remainder of this chapter explains how the archival records, photographs and interviews were collected, sampled, and analysed, and the practical and ethical challenges that were faced for each method.

### **3.1. Manchester City Council minutes, reports, and records**

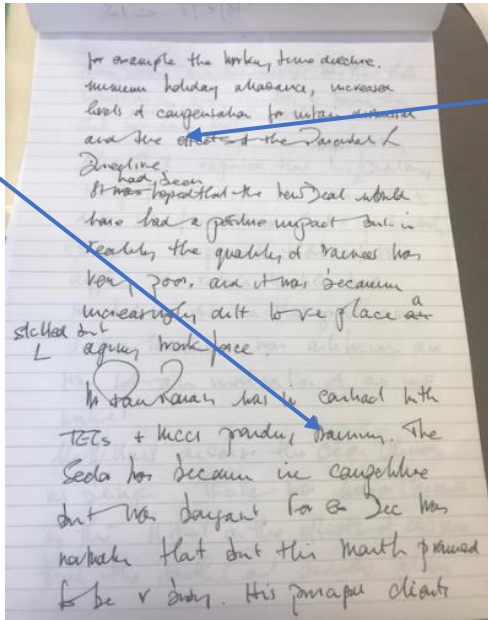
The Manchester City Council stores its departmental and committee records (minutes, reports, and correspondences) in the adjacent City Archives building. These archives were interrogated to provide insights into the roles of objects in different kinds of administrative practices. For example, how inter-departmental correspondence was drafted, produced, and copied as part of the performance and organisation of committee meetings (Moore et al, 2016; Grant, 2018).

The City Archives store physical records in boxes sorted by date and department/committee, with an online search engine providing a summary of what each box of records contained (Moore et al, 2016; Moss, 2017). The process of accessing these records had two stages, beginning with using the City Archives online search engine to find boxes of records with any reference in their descriptions of specific office objects, using a key word search that included: carbon, copying, photo, photocopier, computer, email, correspondence, letters. The second stage was reading the contents of these boxes in person at the archives to identify which records contained the details of the use of different kinds of office objects like typewriters, carbon paper, email, and computers. Records which contained these details were then scanned at the archives and stored on an online One Drive (Moss, 2017; Grant, 2018).

Through this initial process seven boxes (approximately 400 total pages) of written records were collected which were somewhat relevant for this thesis. These were primarily sourced from the IT committee, and small firms’ committees, and the Manchester Chamber of Commerce. Following the collection and initial examination stage, the 400 pages of written records were analysed in two ways. First, each document underwent content analysis to identify references and discussion of how certain office objects were used and fitted into administrative practices in the Town Hall (Macdonald, 2001; Bowen, 2009). These records contained discussion and references to the use of specific objects in the Town Hall between the 1980s and early 2000s (such as email, photocopiers, typewriters, and computers), and what kinds of activities and practices they were used in (notably in copying,

communication, word processing, and organisational practices). The types of records ranged from copies of unused policy proposals, printed out emails between members of various committees, and original copies of committee minutes and agendas. A full description of each box of records is found in Appendix 8.1. Secondly, the documents underwent material analysis which focused on identifying the physical properties and features of the documents, and how they were written, edited, moved around, and stored (Wolff, 2004; Coffey, 2014). This analytical approach treats documents not just as sources of textual information but as physical artifacts and tools of the Town Hall's administrative practices, with their own material properties to be examined (Wolff, 2004; Coffey, 2014). An illustration of this joint material/content analysis is found below:

*Photograph 3.1 of handwritten notes taken from a Small Firms panel meeting minutes held on December 7<sup>th</sup>, 1999.*

|  |  |  |
|--|--|--|
| <p><b>Material Analysis:</b></p> <ul style="list-style-type: none"> <li>• What type of paper and ink were used (i.e., thick, or thin paper, headed or plain paper)?</li> <li>• Who made them and how?</li> <li>• Were they edited or altered (i.e., tippex, annotations, stapled, folded), and if so by who?</li> <li>• How and where were they stored?</li> </ul> |  <p>The image shows a photograph of a handwritten note on lined paper. The text is written in cursive and includes phrases such as 'for example the books, time machine', 'museum holiday absence, increase', 'look at compensation for urban', 'and the others of the', 'Deadline', 'It has been', 'to have had a positive impact but in', 'reality, the quality of services has', 'been poor, and it was because', 'increasingly difficult to place an', 'stalled in', 'L agency work force', 'to have been in contact with', 'TGCs + local groups, warning. The', 'Seda has become in competitive', 'but was delayed for a Dec has', 'narrative that but this month passed', 'to be v busy. This purpose clearly'.</p> | <p><b>Content Analysis:</b></p> <ul style="list-style-type: none"> <li>• What is the document (e.g., a report, printed email)?</li> <li>• What is the topic (e.g., an event, a meeting, policy)?</li> <li>• What objects are discussed (e.g., typewriters, email)?</li> <li>• What practices or activities are discussed (e.g., communication, copying)?</li> <li>• What is the purpose of the document (e.g., organisation)?</li> </ul> |
|--|--|--|

This approach allowed for an examination of both the material properties of the documents themselves and of how this shaped their use in office work, but also of the roles and purposes of these documents in administrative work. For example, photos of selected committee records are used in chapter 4 to provide visual examples of the types of originals and copies being discussed, and to supplement the interviews with Town Hall staff.

### 3.2. Photographs of the Manchester Town Hall offices

The photographs used in this thesis were collected from three different sources:

- 1) 29 photos were selected from the Greater Manchester Lives online archive, which contains thousands of photos relating to Greater Manchester's heritage. This collection of photos was

varied, some staged and others reportage, and were of various Town Hall events and offices from between 1959-1990. A key words search was used to find relevant photos, using words such as: Manchester, town hall, city council, chamber of commerce, extension building.

2) 38 photos were selected from the 'Refurbishment Album', which contains approximately 1100 photos showing the complete interior (every corridor, office, bathroom, and storage area) of the Town Hall between 1979-80. These photos were taken to record changes made during the Town Hall's 1979-80 refurbishment. PDF copies of the full album were provided by the head curator of the 'Our Town Hall' project.

3) The full 'Treasury album' of 20 photos. The album contains photos of various punch card and computing machines found in the Town Hall Treasury from between 1960-62, with each photo coming with annotations describing the machines shown in each photo. The full album was photocopied during a visit to the City Archives to inspect other written records.

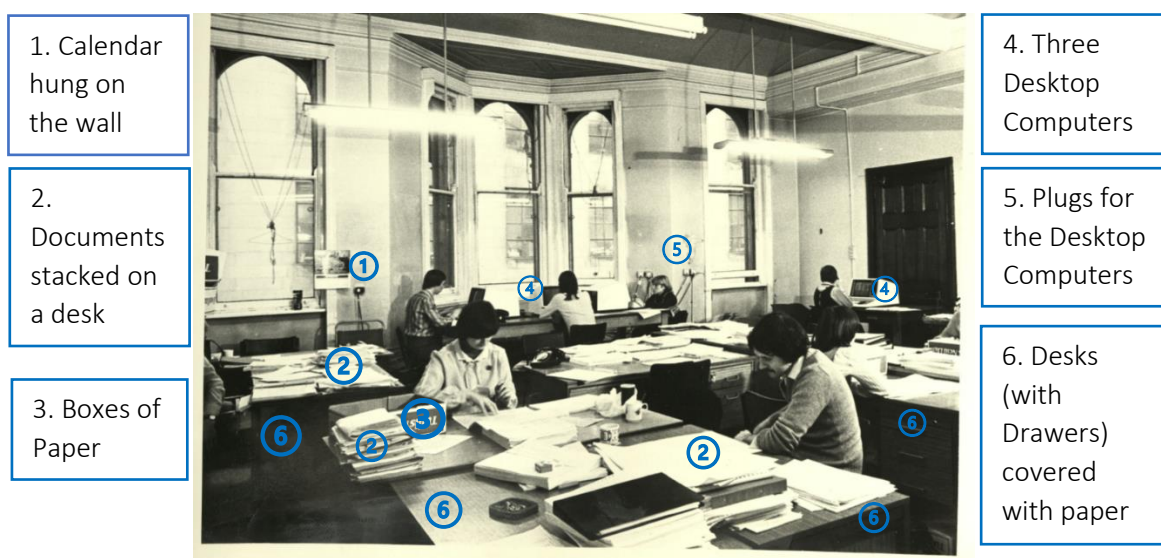
A more detailed summary table of these sources is found in Appendix 8.2<sup>6</sup>. The photos went through a preliminary sorting stage, in which photos were removed from further analysis, on the basis that they were too dark, blurry, shot at the bad angle, or did not show enough identifiable objects (Tinkler, 2013; Rose, 2016). This sorting stage was especially necessary for filtering through the 'Town Hall Renovation Album' which had approximately 1100 photos.

The 87 photos that remained underwent visual content analysis focusing on highlighting the specific objects found in each office, and how they are positioned in relation to one another within office spaces. This includes identifying any ways in which the objects are shown to be interacting with each other in the moment of the photograph, for example computers connected to printers by wires, or with paper being fed into a typewriter (Martinez, 1995; Rieger, 1996; Dewitz et al, 2019). Below is an illustration of this analytical approach:

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<sup>6</sup> Again, I am grateful to the Head Curator of the 'Our Town Hall' project, who advised on the sourcing of this material.

Photograph 3.2 of a second floor general office from between 1979-80



This visual content analysis approach provided insights into the ways in which specific office objects were arranged and organised within office spaces. Some photos visually capture moments which show specific objects in use with both people and other objects (Lord, 2012; Andres and Braster, 2020). This provided some of the inspiration for chapter 4 'Originals and Copies' which examines the ways in which objects physically and directly interact, edit, alter, and consume each other as part of everyday office activities (e.g., they show how a document is altered through interaction with an inepad and stamp).

Across the three sources of photos, some of the same Town Hall office spaces have been photographed at different periods of time, notably the Treasury department which was extensively photographed in the 1960-62 and 1979-80. This provided the opportunity to examine how objects are configured and arranged in relation to each other within the same spaces, and how these spatial relations between objects change (and do not change) over time (Ball and Smith, 2001; Emmel and Clark, 2011; Tinkler, 2013). This became the foundation for chapter 5 'Desks, Offices, and Infrastructures', which examined and compared the Treasury and its office spaces in 1960-62 and 1979-80.

### **3.3. Interviews with eight Manchester Town Hall staff**

Some of the concepts that this thesis works with suggests that objects can emerge in practices in many simultaneous ways, and that there are likely multiple co-existing (but equally valid) experiences of this object which vary from person to person. The archive records and photographs provided

insight into how objects are positioned in relation to each other as physical things sharing the same spaces which can interact with each other. However, in-depth interviews were needed to gain insights into how specific objects were taken up and used in everyday administrative practices in the Town Hall (Cummings, Kohn and Hulley, 2013; Lauterbach, 2018). Designing the interviews began in 2020 and was modified during its development to adapt to the outbreak of COVID-19 (Gruber et al, 2021).

### Selecting Interviewees

Finding and recruiting interviewees involved in administrative work in the Town Hall sometime between 1980 and the early 2000s started with an initial strategy involving a targeted appeal-based recruitment, using the Curatorial Manager of the 'Our Town Hall' project as a gatekeeper (Corben and Morse, 2003). An email advert (see Appendix 8.7) was circulated through the Town Halls departmental 'listservs' in June 2021 (Fricker, 2008). The advert outlined the focus of the study, the requirements of the interviewees, and their rights to anonymity and to withdraw from the study up to two weeks after the interviews (Shapka et al, 2016). This led to an initial list of 21 potential interviewees who broadly had relevant experiences (Gubrium, 2012; Cummings, 2013). Of these initial 21 responses, only ten responded to subsequent emails, and of these four failed to meet the following criterion:

- 1) Employed in the City Council in some capacity for at least a few years between 1960 and 2010, and preferably worked in the offices of the Town Hall themselves.
- 2) Had personal experiences with at least either: the use of email, preferably in the early 1990s; and/or, performing carbon copying, photocopying or computer copying tasks.

This criterion was important for ensuring that the interviewees had personal experiences of the types of objects, administrative practices, and time periods in the Town Hall's history which this thesis focuses on (Emerson, 2015). This first stage of recruitment was successful in identifying six interviewees for the thesis, which was then followed up with a snowballing sampling strategy in which a further two interviewees were found (Browne, 2005; Baker and Edwards, 2012).

The relatively small number of interviewees was the consequence of the interview selection criterion and the outbreak of COVID-19 (discussed later in this chapter). However, the purpose of these interviews was not to develop an overview account of administrative practices, but rather to provide a few varied and in-depth discussions of personal work experiences (Hollway and Jefferson, 1997; Lucas, 2014). The eight interviewees worked across a wide range of jobs in the Town Hall, within



different departments and specialised teams, and across different time periods. These eight interviewees provided the diversity of experiences needed to examine office objects from a variety of perspectives, within different offices spaces, and as part of different administrative practices, responsibilities, and tasks. What follows is a breakdown of each interviewee’s career at the Town Hall:

Figure 3.1 summarising the careers of interviewees in the Manchester Town Hall and City Council

| Interviewee (Pseudonyms) | 1965                                 | 1970 | 1975                                     | 1980   | 1985                             | 1990   | 1995                              | 2000   | 2005  | 2010                          | 2015 | 2022 |  |
|--------------------------|--------------------------------------|------|--|--|----------------------------------|--|-----------------------------------|--|---|-------------------------------|------|------|--|
| Mary                     |                                      |      |  | Accountant (Treasury Dept)                       |                                  |  |                                   | Performance and Insight Leader and Researcher (Treasury Dep) |   |                               |      |      |  |
| Erica                    |                                      |      |  |  | Administrator (Architect Dept)   | Computer Assisted Design Team (Architect Dept) |                                   | Property Review Team (Architect Dept)                        |   |                               |      |      |  |
| Yvonne                   |                                      |      |  |  |                                  |  |                                   | Community Organiser and Women’s Officer (Social Services)    | Policy Developer (Social Services)                  |                               |      |      |  |
| Regina                   | Office Junior in the Chief Executive |      | Office Junior (Regeneration Policy Team) |  | Assistant to the Chief Executive |  | Policy Developer (Transport Dept) |  | Head of the Voluntary Sector Policy and Grants Team |                               |      |      |  |
| Haley                    |                                      |      |  |  |                                  |  |                                   | Community Organiser  | Digital Communications Manager                      |                               |      |      |  |
| Sharon                   |                                      |      |  | Treasury Department Office Junior and Accountant |                                  |  |                                   | Accountant (City Council Library)                            |   | Office Worker (Treasury Dept) |      |      |  |
| Chris                    |                                      |      |  |  |                                  | Consultant (Economic Development Dept)         |                                   |  |   |                               |      |      |  |
| Arthur                   |                                      |      |  |  |                                  | Consultant (Economic Development Dept)         |                                   |  |   |                               |      |      |  |

*\*Some interviewees were employed in positions in a particular department (i.e., Mary), whilst others were part of teams or groups that were not specific to one department (i.e., Haley). See appendix 8.3 for a more detailed description of the careers of each interviewee.*

### Performing online guided interviews during COVID-19

The interviews were designed to have a conversational approach steered by an interview guide (Wilson, 2016). This approach was chosen to give interviewees the space to go into detail and to add their own ideas, whilst ensuring the discussions stayed relevant to the thesis. The start of the guide contains opening questions which asked interviewees to briefly describe their careers at the Town

Hall, the jobs, and positions they held, and the types of activities and responsibilities they had. The opening questions helped to narrow down which time periods and jobs to focus on in the interviews and avoid any generalised conversations (MacDougal and Fudge, 2001; Clifford et al, 2016).

The rest of the interview guide was divided between two topics dedicated to separate chapters which followed their own lines of inquiry and required different types of discussions with interviewees (Kallio et al, 2016). The full interview guide is found in appendix 8.4. The first topic, and focus of chapter 4, concerned the examination of the material relations of different forms of copying carried out in the Town Hall in the 1980s and 1990s. Interviewees were asked to describe in detail how they carbon copied, photocopied or computer copied a document from beginning to end. Selected photos of photocopiers (shown in Appendix 8.9) were used to help interviewees recall and articulate the specific features of the photocopiers that they had used (Suchman, 1987; Harper, 2002; Kjellstrand and Vince, 2020). The second topic, and the focus of chapter 6, focussed on personal experiences of the integration of email into the Town Hall during the 1990s and early 2000s. In this topic, interviewees were asked about how they had to adapt and learn to use email as it became part of their everyday work, especially as part their communication practices.

Interviews were originally intended to be conducted in-person in a location comfortable to the interviewee, such as their homes, a café, or potentially the Science and Industry Museum (Wilson, 2016). Two additional techniques were considered: photo-elicitation, using photos of specific objects as memory aids to help interviewees describe how they used them and how they worked (Davis, McMahon, and Greenwood, 2004; Parker, 2009); 'paper dioramas', which would have involved interviewees sketching their offices on A3 paper to help interviewees articulate the 'sense of space' of their offices (their layout, dimensions, locations of objects and their desk) (Bagnoli, 2009; Wilson, 2016). Following the COVID-19 outbreak in-person interviews became unfeasible (Gruber et al, 2021). This led to some methodological adjustments, and a redesigning of the interviews to be online instead whilst attempting to keep the guided but conversational approach (Chia et al, 2020; Moises, 2020).

Three pilot interviews were performed with family members with office work experiences (Turner, 2010). These pilot interviews also helped to refine the interview guide, and test if the photo-elicitation and 'paper diorama' techniques could work with online interviews (Mcnamara, 2009). Whilst the dioramas proved to be unfeasible as part of an online interview design, the photo-elicitation techniques were viable for online interviews and were especially useful for helping interviewees describe specific models of photocopiers (Harper, 2002; Tchoula and Copes, 2021).

Following the refinements made through the pilots, the procedure for the online interviews went as follows. Interviews were carried out and recorded using skype, Microsoft teams, or Zoom, whichever

was preferred by the interviewee. Each interview lasted between one to two hours each, depending on whether the interviewee wanted to continue beyond the agreed timeframe of 1 hour. Web cameras were used in the interviews to help with the conversational approach of the interviews, but only the audio recordings of the interviews were kept with the video footage being deleted after the interview ended. These audio files were then transcribed using the Otter.ai transcription service (Otter.ai, 2022), and then checked through using the original audio files to correct mistranslated text (Brinkmann, 2014). Following transcription, the transcripts and original audio files were stored on a Lancaster University One Drive on password protected folders (Seymour, 2001; Janghorban et al, 2014).

### Thematic analysis of experiences with objects and office work

The interview guide provided data on two separate topics, relating to copying and emailing respectively. Each topic was developed using different lines of inquiry, focusing on different practices and objects, and cover different time periods. Thematic analysis was then used to identify sets of themes which would go on to contribute to two different chapters.

The first topic concerned the interviewee's experiences of copying in the Town Hall, and interviewees were asked to give their own stories which detailed from beginning to end the process of copying a specific document. Themes of analysis were the three different forms of copying: carbon copying; photocopying; and computer copying<sup>7</sup>. For each form of copying, a single interviewee's story was selected to be used developing a 'vignette', a stylised but detailed snapshot into a first-hand experience of each form of copying. The discussion in each vignette was then supported by, and explored in relation to, other data, which included archival materials and details from other interviewee's stories (Rizvi, 2019; Harrits and Moller, 2021). The comparison of these three vignettes served as the basis for chapter 4 ('Originals and Copies'), and its examination of how documents are copied and their subsequent 'lives' in the Town Hall.

The second topic was concerned with the introduction of email into the Town Hall during the 1990s, and the varied experiences and narratives of using and understanding email that emerged in that period. The thematic analysis focused on identifying themes of email's introduction into the Town Hall which were experienced and described from a variety of perspectives across the interviews. These themes were used to highlight areas of debate or of contradiction in the experiences of email across the interviewees and provide different interpretations of email as it became part of Town Hall office work over the course of the 1990s (Jacobs and Tschotschel, 2019; Freiberger, 2021). This data

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<sup>7</sup> In this context computer copying refers to a broad range of ways that documents can be duplicated through computer-related activities, such as sending copies of documents via email, or by printing off copies from a computer.

became the foundation for chapter 6 'Appropriating Email into Administrative Practices and Existing Object Relations', and its exploration of different experiences of email in the Town Hall in the 1990s.

### **3.4. Reflecting on the methodology of the thesis**

Identifying potential sources of data began early in the thesis, and as part of the scoping work several other sources were considered: 1) responses to online Mass Observation Diaries discussing 'work', 'new technologies', 'using a telephone' and 'doing a job'; and 2) Manchester Chamber of Commerce annual reports from between 1960-1996. These were explored for their potential to provide insights into how people understood and used office objects, and the development and growth of Manchester's administrative sector between the 1960s and 1990s. However, the decision was made to not include Mass Observation Diaries or the MCCI records. In the case of the former, the very generalised discussions of office objects, spaces and practices did not provide the kinds of insights that were needed for the specific aspects that this thesis was investigating. In the latter case, it was not possible to trace the ebb and flow of administrative work in the Town Hall through the Chamber of Commerce reports because they discussed trade meetings and administration across Manchester and did not specifically discuss the internal administrative work found in the Town Hall.

The advantage of using the archive records and photos in this thesis was that they were already collected, centrally stored, organised for easy access, and covered a period of over 60 years (Pauwels, 2010; Moore et al, 2016). This data was consequently highly relevant to the aims of the thesis to capture, in particular to capture how objects and their relations changed over time alongside administrative practices. The primary methodological challenge came from how to analyse, format, and discuss these materials, especially considering that there was little control over what kinds of data the archives contained or how it would be presented (Rapley and Rees, 2018). For example, whilst the archive records spanned approximately 60 years of Town Hall history, committee records for the 1970s or after 2005 were difficult to access because they were stored in a permanent offsite storage. Similarly, photos of the Town Hall were difficult to source outside of the three albums which only cover 1960-62, 1979-80 and sporadic moments between 1959 and 1990. This often meant that the subjects and empirical examinations of the thesis were heavily shaped on which time periods and places/departments had the most available data, including the topics of the interviews.

The interviews coincided with the COVID lockdowns which placed heavy demands on Town Hall staff, some of whom were redeployed into frontline roles, were placed on furlough, or required time off to home-school or care for family members. This likely reduced the overall responses to the recruitment email which was circulated via their work emails (Robinson, 2014 Emerson, 2015). One interesting reflection was that changing from in person interviews to online interviews turned out to be a more

considerate and appropriate approach for this research given the specific demographic of interviewees (Vogl, 2013). The initial worry was that performing the interviews online instead of in-person would make it more difficult to find and recruit interviewees. However, as it would turn out many of the interviewees would have been unable to meet in-person regardless of COVID-19 restrictions (Davis, McMahon, and Greenwood, 2004). In some cases, this was due to their health and age, and in other cases because they lived too far away making it too inconvenient for me to meet with them in person (Parker, 2009; Bagnoli, 2009).

There was also the concern with interviewees struggling to recall often mundane and unmemorable workdays from potentially 30-40 years ago. The primary means of mitigating this issue was to move strategically between the two interview topics and their lines of inquiry in a flexible manner to maintain the momentum of the interviews without losing the in-depth and detailed descriptions needed for the thesis. If/when it was apparent that an interviewee was struggling with a topic or line of inquiry, which could frustrate them, the conversation was redirected to a topic the interviewee was more confident discussing (Mcnamara, 2009). This flexible design had the benefit of encouraging interviewees to introduce their own topics that might otherwise have been overlooked (Garbarski et al, 2016).

The use of archival records, photos and interviews provided a way of examining office objects, spaces, and practices in the Town Hall, primarily between 1960 and 2010. The archive records and photos worked well in conjunction with the interviews by highlighting the first-hand experiences of Town Hall staff (Winter, 1992; Koscieljew, 2017). For example, the records of the original and copied correspondence between committee members were useful as 'artefacts' that could be physically examined as part of the analysis (Wolff, 2004; Coffey, 2014). Likewise, the photos of the Town Hall's interior spaces provide a means to visually analyse and present the spatial organisation of objects in the Town Hall, avoiding a reliance on lengthy written descriptions (Reigler, 1996 and 2003; Rose, 2016).

### **3.5. Ethical considerations: data collection, analysis, and storage**

An advantage of using publicly available archived records and photos is the minimal ethical challenges that come with using them (Fogel, et al, 2010). They are part of the public domain which can be accessed by anyone with little restriction, and as such consent and anonymity has already been secured for the individuals in these records (Tesar, 2015; Hamer, 2018). Regardless, this thesis does not overtly reference or single out any individual who appears in any of the archive material or photos (McKee and Porter, 2012).

For the interviews, issues of anonymity and confidentiality, informed consent, and the power dynamics between the interviewees and interviewer were considered. Maintaining anonymity for participants involved ensuring that personal details like names, addresses, and physical characteristics (including those of other colleagues that they mention) were omitted from all published data (Hughes, 2012). Omitting these details from the data happened during the transcription stage, so that they were suitable for upload to the One Drive repository without further amendment. Each interviewee has been given a pseudonym (as shown in the figure 3.1) (Saunders et al, 2015).

For acquiring informed consent, interviewees were directly informed of the nature of the study in both the email advert, in the participant information sheet (see Appendix 8.8), and at the start of the interviews themselves (Weeden, 2012). Consent was recorded in one of two ways: 1) a signed physical consent form (see Appendix 8.6); 2) a verbal consent protocol (see Appendix 8.5) which was recorded at the start of the interviews. Offering both methods to record consent was done for the convenience of the interviewees, some of whom struggled with accessing and signing the physical document through their computers (Vogl, 2013; Mealer and Jones, 2014). The physical consent forms, and verbal consent recordings were then securely stored on a Lancaster University One Drive account.

There was also the potential for power imbalances produced by having the Head Curator of the 'Our Town Hall' project directly contact other Town Hall staff on my behalf. This created the potential for staff to feel compelled to participate due their pre-existing work relationship to the Head Curator (a senior member of staff) (Kinney, 2017). To address this imbalance, the original email advertisement circulated throughout the Town Hall was circulated generally (like any other notification) and was not directed to specific individuals within the Town Hall. It was also made it clear in the email advert, participant information sheet, and at the start of the interviews that participation was voluntary, that they would be anonymised in any published work, and that their careers would not be affected should they choose to not take part or withdraw later (Vogl, 2013; Kinney, 2017).

### **3.6. Examining material, spatial and practice-based object relations**

This thesis developed a methodological approach to explore how objects in the Town Hall: combined, interacted, and consumed each other; were arranged and organised within and across spaces; and, were used together as part of administrative practices. Focusing on the Town Hall's office spaces and practices between 1960 and 2010 provided a direction for finding a diverse body of data consisting of archival records, photographs, and a set of in-depth interviews. These sources of data are combined in a variety of ways across three discussion chapters, each homing in on a different aspect of relations between objects how they changed.

Chapter 4 considers how objects interact, alter, and consume each other as part of carbon copying, photocopying, and computer-based copying activities during the 1980s to early 1990s. All three sources of data were used together to develop vignettes detailing how each copying activity was performed, focusing on what happened to the originals that were used and copies that were produced. These vignettes of carbon copying, photocopying, and computer-based copying were then compared to highlight the various object relations which characterised each activity. Chapter 5 examines the specific spatial arrangements of objects found in the Treasury Department in the Town Hall, and how these arrangements changed over time by comparing photographs of the Treasury from 1960-62 and 1979-80. This examination was supported by archival records and secondary materials which describe in-detail the various computing and calculating technologies seen in the photos. Chapter 6 considers the processes by which email was integrated into the Town Hall during the 1990s and early 2000s, primarily using interview data (but supported by archival records) to present different experiences and narratives of the impact of email’s introduction on established communication practices and objects in the Town hall. Figure 3.2 below summaries the distribution and use of the analysed data across chapters 4, 5 and 6.

*Figure 3.2 summarising the use of archival records, photograph, and interview data across the thesis*

| Sources                 | Chapters   |  |  |
|-------------------------|--|--|--|
|                         | Chapter 4: Originals and Copies: Examining Material Relations in Carbon Copying, Photocopying and Computer Copying | Chapter 5: Desks, Offices, and Infrastructures | Chapter 6: Appropriating Email into Administrative Practices and Existing Object Relations |
| <b>Archival Records</b> | Main Data Source   | Supporting Data Source                         | Supporting Data Source   |
| <b>Photographs</b>      | Supporting Data Source   | Main Data Source                               |  |
| <b>Interviews</b>       | Main Data Source   |  | Main Data Source   |

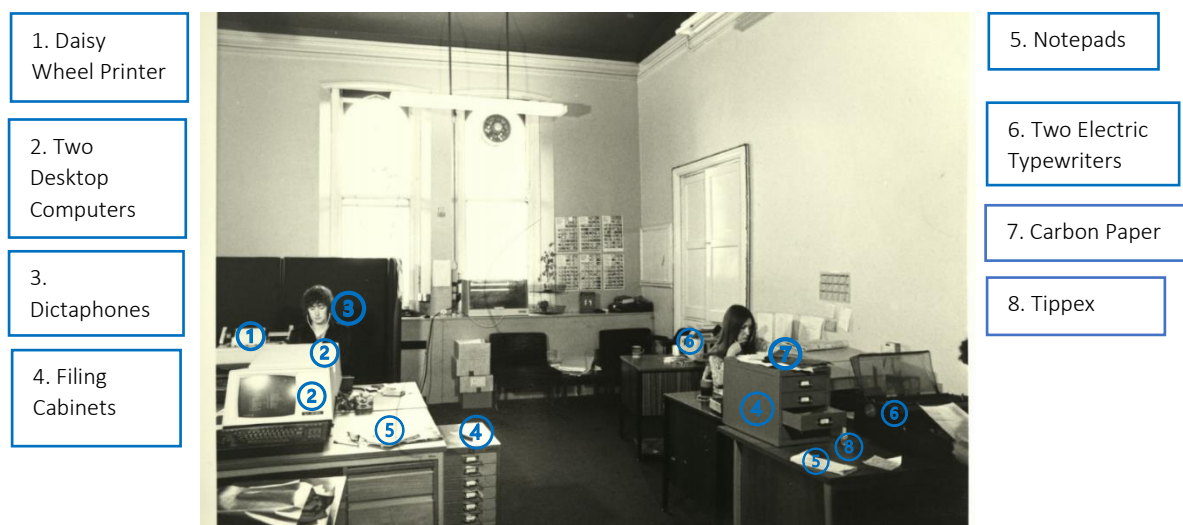
The concluding chapter reflects on the outcomes of this methodological approach, its application to the examination of histories of office work and processes of change in the Town Hall, and the potential for using similar approaches to present object relations as part of museum exhibitions.



## Chapter 4: Originals and copies – examining material relations in carbon copying, photocopying and computer copying

Objects constantly interact with each other and connect in direct and physical ways as part of their everyday use. Objects can: attach or plug into to each other, like a keyboard does to a computer; hold, contain, or store each other, like a filing cabinet often stores paper; physically edit or alter each other, like a tippex on a document; and consume each other, such as a typewriter exhausting ink ribbons during typing. These interactions can be understood as ‘material-based’ relations, rooted in the interactions between the physical properties and design of objects and the people who use them. Any singular interaction between objects is often situated within more extensive instances of objects, especially in cases where the performance of office tasks is increasingly complex. One example of how objects interact and collaborate is in the performance of copying tasks. Photographs from the Town Hall in 1979-80 reveal that multiple different means of copying co-existed, as illustrated below.

*Photograph 4.1 of a second floor office in the Manchester Town Hall (labelled ‘spare room’ on floor plans) from 1979-80*



This photo highlights two different ways of copying based around different instances of objects: carbon copying (i.e., carbon paper, typewriters, and tippex), and computer copying (i.e., computers and printers). Another means of copying in the Town Hall was with photocopiers, which were typically found in their own room on each floor of the Town Hall (and subsequently not shown in the photo).

This chapter explores how instances of carbon copying, photocopying and computer copying are characterised by how the objects that make up these instances interacted, combined, and connected with each other. These three instances are examined during the late 1980s and early 1990s, a period when they overlapped and co-existed in the Town Hall. Rather than describing all the possible

material relations objects might have, this chapter focuses on ‘following’ the careers/trajectories of the originals and copies being used and produced in each instance.

This chapter frames the discussion of originals and copies by drawing on Latour and Lowe’s (2008) idea that individual objects have their own distinct trajectories, or ‘careers’. Developed from Appadurai’s (1988) ‘The Social Life of Things’ (see chapter 2), Latour and Lowe argue that to examine an object, an approach is needed that allows researchers to trace the trajectories of objects, rather than focusing on one moment in time.

The concept that objects have trajectories, can change, and enter into new relations, practices and spaces over time, is particularly useful because it emphasises that relations between objects are similarly in flux. This chapter compares the diverging trajectories of originals and copies from carbon copying, photocopying and computer copying.

Three vignettes are presented, each describing how a specific Town Hall worker went about the task of carbon copying, photocopying or computer copying at some point during the 1980s and 1990s. These vignettes provide a detailed snapshot into a first-hand experience of each instance of copying, and how objects in each instance interacted with each other as part of the copying process. These snapshots are then explored in relation to other data, including secondary research, discussions from other interviewees, and archive materials (i.e., technical manuals, Town Hall records). This body of data was used to compare each copying instances using the following lines of inquiry:

- What is the nature/meaning of being an original, or source of copies, in the contexts of office copying?
- What are the subtle and overt material differences of copies and originals from different configurations of copying?
- What does correcting mistakes, editing, and creating documents mean for the relationship between originals and copies?
- What happens to originals and copies after copying is done (do they have different statuses in the office, and where do they go)?

The chapter argues that each of the three instances produces their own kinds of originals and copies based on the specific ways in which objects like typewriters and carbon paper interact to copy documents. Different kinds of originals and copies come with distinct characteristics, which play a part in shaping how these documents are used, and the meanings they are given by people. For example, a prominent difference that shaped the trajectories of originals and copies in the Town Hall was whether documents were produced or reproduced digitally (via a computer) or physically (i.e., via photocopying). Another example was that some kinds of originals and copies (namely digital ones)

existed in highly fluid states of ‘versionality’, in which numerous slightly altered versions of a document existed across different devices. This blurring of versions was only possible through digital copying via computers and how it affords easy and continuous saving, editing, and sharing of digitally copied documents. This means that even similar or identical objects (like originals and copies) can go on to have very different trajectories based on their material connections and interactions with other objects (i.e., being storied in different ways such as on hard drives or in filing cabinets).

#### **4.1. Stories of copying from the Town Hall**

Interviewees who worked in the Town Hall during the 1980s and 1990s, were asked to describe the process of copying a specific type of document (i.e., letters, graphs, memos, posters) from beginning to end. This included describing the objects that were part of this process, how the interviewees used those objects to carry out the copying, and what happened to the originals and copies after the copying process was done. Each vignette tells the story of a single interviewee’s experience performing either a carbon copying, photocopying or computer copying task. These vignettes are supported by additional data from other interviewees who discussed aspects of copying not covered in the vignettes, as well as archive materials and photographs of originals and copies.

##### **Carbon copying policy documents – Regina’s story**

The first instance of copying is based around typewriters and focused on reusable (rather than single use) carbon paper that was commonly used with typewriters during the 1980s in the UK (Made How, 2009; Van Meel, 2011). Carbon paper started to be produced in the UK around the same time as the first typewriters in the early 19<sup>th</sup> century (Beattie and Rahenkamp, 1981; Bailey, 1985). The carbon paper and typewriter combination had the benefit of circumnavigating illegible handwritten documents and combined the processes of producing and reproducing documents into one process (De Wit et al, 2000). By the 1970s and 1980s reusable carbon paper was one of the primary methods of copying in office work in the UK (Sheridan, 1991). From the Town Hall, Regina provides an account of how she engaged in carbon copying activities as part of her office work routine in 1983:

##### *Box 4.1. Regina’s story*

*In 1983, Regina was working in the regeneration policy team in the Town Hall, responsible for drafting policies around social regeneration, equality, and diversity programs, to be discussed at bi-monthly committee meetings. This involved a carefully planned six-week timetable of work drafting, reviewing, editing, copying, and eventually circulating policy documents. Regina timed this process so that ‘finished’ copies of policy documents were circulated to committee members at least two weeks before the committee met. A key part of this was the ‘laborious’ process of getting the draft*

carbon copied. Regina started this process by writing out a first draft of the policy document on pads of lined paper called a docket. If the policy she was working on was short she would type it up herself, but often Regina relied on sending her docket to the typing pool in the Town Hall. Outgoing dockets going to the typing pool were stacked in wicker baskets for outbound mail, which the office juniors would take to the typing pool once a day.

The process of typing and carbon copying policy documents was the same for Regina and the typists from the typing pool. Paper and carbon paper were layered on top of each other, with a top page of plain paper, and underneath that top page alternating layers of carbon paper and pages of thinner plain paper (often called flimsies). Regina never made more than three or four carbon copies of a policy document, as the more copies being made at once, the more faded and blurrier the bottommost copies would be. The typist (be it Regina or a someone in the typing pool) would then type out the documents, creating copies at the same time. Often Regina would make changes or alterations to the text as she went. Sometimes these were small changes like new titles or rearranged paragraphs, but sometimes these were significant changes to the structure of the whole document. This meant retyping entire pages or even the entire document (and its carbon copies) from scratch. Small mistakes could be corrected by Regina herself with white tape or tippex which she kept on her desk. However, a common problem for Regina was that policy documents would be returned to her missing entire paragraphs. This resulted in documents being sent back and forth between Regina and the typing pool until they were correct.

For circulation bottom copies would be sent to relevant committees for meetings where they would be discussed and potentially approved, whilst the top copy would be kept by Regina for reference. If additional copies were needed the top copy would be photocopied at the print room (a process called a short run). Policy documents that were sent to committees or line managers for review and debate could be returned with various amendments, starting the process of retyping/recopying all over again. Once 'completed', Regina would sign the top copy (which would be considered the 'original' version of the policy document), and in some cases stamp the completed policy document with the City Council seal. The top copy would then be sent to the line manager, and Regina would keep a carbon copy for her own records. Meanwhile, 'completed' bottom copies would be sent out to committee members for their own records.

### Photocopying correspondence letters – Yvonne's story

The second instance of copying is based around the photocopier. Photocopiers were developed and first put into commercial use roughly during the 1960s (Van Meel, 2011). During the 1980s and 1990s, the most common form of photocopier used a process called 'xerography' to develop exact duplicates

of pre-existing documents (Britannica, 2021). Photocopiers like those produced by Xerox could copy almost any document<sup>8</sup>, and by the 1990s photocopiers were commonplace in the UK (Carbon Pilgrim, 2012). Photocopiers were still considered both relatively slow and expensive when compared to the accessibility, cost, and ease of copying a document with typewriter and carbon paper (Fayard, 2007). Instead, photocopiers were often rented by offices from manufacturers and were used alongside other means of copying (Haigh, 2006). Yvonne's story describes how she used a xerographic photocopier to copy documents as part of her work in the Town Hall in the 1990s:

*Box 4.2. Yvonne's story*

*In 1998, Yvonne was working as a women's officer and community organiser in the Town Hall extension, working to protect women and promoting gender equality in businesses and local communities. In one instance, Yvonne was working with an elected member of the Manchester Council to develop ways of legally protecting sex workers in Greater Manchester, which meant coordinating and communicating with often dozens of other organisations. This would require Yvonne copying the letters using her offices 'terrible' photocopier.*

*Before the photocopying began, Yvonne worked with the elected member to draft a letter inviting relevant groups to a meeting to discuss the issue of protecting sex workers. The elected member drafted a version of the letter on a notepad which Yvonne then sent to the typing pool to be typed up on headed paper (so that the photocopies would also be headed). Yvonne would need over 50 copies of the original letter made for this project, for which she would need to use her floor's shared photocopier located down the corridor from her office. This photocopier was a large xerox which took up roughly the same space as two large desks.*

*The photocopier was shared, meaning that Yvonne followed a few unofficial rules for maintaining and using the photocopier. For example, there was a pecking order for who got priority when multiple people queued for the photocopier. People with small copying jobs (i.e., one or two copies) were giving priority, as well as chief executives or senior management who photocopying requirements were potentially more important than Yvonne's. Another important rule was not to use the photocopier to make more than 50 copies, as this would take too long and would increase the chances of the photocopier overheating. If more than 50 copies were needed, Yvonne would attach a special top sheet to the document and send it to the print room in the Town Hall basement. In either case, the letter was placed onto the photocopier on a glass screen, closing the lid and setting the photocopier to scan and print a specific number of copies. This photocopier was*

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<sup>8</sup> By the 1990s, most photocopiers were capable of being set to print up to 99 copies in one go, could be set to 'remember' multiple scanned pages to produce multiple, multi-page documents (Xeroxnostalgia, 2021a; Xeroxnostalgia, 2021b).

*sometimes used by other colleagues to resize or change the format of documents during scanning, but Yvonne never used this feature herself.*

*The photocopier would often overheat after too much continuous use, increasing the chances of jamming and becoming unusable until cooled. Yvonne's trick to avoiding overheating and getting her copying done was to do it in the mornings before anyone else, especially when she had a large photocopying job to do.*

*Yvonne would take the photocopies of the letter and sit at her desk, putting each copy into envelopes and then into her outgoing mail tray ready to be sent out. The original letter was signed by Yvonne and the elected member, and kept by Yvonne in a large filing chest near her desk, whilst the elected member received a photocopy of the signed letter for their own filing cabinet.*

### Computer copying expenditure spreadsheets – Sharon's story

The third instance of copying is based around copying using computers, primarily through printing or by digital copying (via email, saves, and backups). By the 1990s, desktop computers could be connected to several different types of printers such as: inkjets, dot matrixes, laser jets, and daisy wheels (Ahl 1983; Hogan, 1984; Falk, 1986; Carter, 1987; Mindmachine, 2020). Different types of printers came with their own features and characteristics, for example dot matrix printers could print any characters but was also only capable of producing limited images and charts (Nadeau, 2002; Noronha et al, 2017). Additionally, during the 1990s, computers in the Town Hall were starting to be networked together through mainframes, and through email programs, facilitating the copying and spreading of documents digitally rather than physically (Ceruzzi, et al, 2003; Campbell-Kelly, 2007). Sharon provides a story of how she used her computer to create both physical and digital copies of expenditure spreadsheets as part of her work as a City Council accountant in 1992:

#### *Box 4.3. Sharon's story*

*In 1992 Sharon worked as an accountant in the Town Hall treasurer's department. Developing, circulating, and recording the City Council's monthly and annual expenditure spreadsheets and budgets was her primary job. She shared her office with five other accountants, each with their own desktop computer terminals which were themselves all connected (by wire) to a dot-matrix printer, and to a central mainframe computer located in the treasurer's department.*

*Sharon would need to produce copies of the City Council's monthly expenditures and collate the data into spreadsheets for public record. This process started by using detailed breakdowns of costs to produce an initial version of the monthly expenditure spreadsheet on her desktop computer. Her*

job was then to update this spreadsheet with new information over time (accounting for changing costs of projects and payroll). Sharon was encouraged to keep records of each iterative version of the expenditure spreadsheets she made to keep track of any changes and additions to the budget that were waiting to be approved or denied. The more complicated the expenditure spreadsheet was, the more iterative versions were saved and recorded on her terminal and then backed up onto the mainframe, which happened once or twice a week. However, Sharon always kept an unchanged original version of the spreadsheet in case future iterations of the spreadsheet came out wrong. Sharon was also encouraged to store versions of her spreadsheets and other work through other means to ensure her work was not lost. Notably, Sharon started to save recent versions of her spreadsheets on floppy disks. Another way she copied her work was by emailing it. Sharon worked in a team, and as such was often asked to share recent versions of her spreadsheets to colleagues or supervisors. Her colleagues would often email a version back to Sharon with edits and updates, which Sharon would then work with. Finally, towards the end of the process, more versions of spreadsheets would often be printed off by Sharon using her office's dot-matrix computer printer. This was done simply to be able to hold and view the spreadsheets physically, see how they looked printed off (they were for public record and needed to be legible), and to be used in meetings. However, the dot-matrix printer Sharon used would jam or produce printing errors, especially when attempting to print off documents with many pages, or pages with graphs. To try and avoid jamming and printing backlogs, Sharon's office adopted a general rule where if someone needed to print more than 20 pages, it would be sent to the print room in the Town hall basement to be done. At the end of this process, Sharon would send the finalised monthly spreadsheets to be combined with other documents and bound as a single book of the City Council expenditures for that month. Several copies of these books would be reproduced by the Town Hall print room, which involved printing the pages using a computer terminal connected to specialised, large-format, printers which would print, order, and bind pages with covers, turning the pages of copies into completed books. These books were then kept as part of public records in the Manchester City Archives.

## 4.2. What is an 'original' and what is a copy?

When comparing the three vignettes, carbon copying, photocopying and computer copying appear to produce their own kinds of originals and copies based on the specific ways in which objects like typewriters and carbon paper interact to copy documents. These different kinds of originals and copies have their own characteristics (i.e., what kinds of paper they are produced on) which shape how these originals and copies are understood and used in practice by Town Hall staff. Originals and copies produced/reproduced through different instances of objects come to have different uses and roles in office work, leading them to have distinct trajectories in the Town Hall.

A key feature of originals and copies in carbon copying highlighted in Regina's story, is how it simultaneously produces a 'top' copy with potentially several 'bottom' copies, as opposed to having an original come first and then be copied. De Wit et al (2000) similarly note that the interaction of carbon paper and typewriters merged previously distinct processes of writing and copying. In carbon copying there is no 'original' in the sense of a pre-existing source document that is reproduced. Carbon copying does produce distinct 'top' and 'bottom' copies because of their differing physical characteristics, and as a result top and bottom copies often occupied different roles and uses in office work (Dahlstrom, 2019). There are a few key differences in the characteristics of 'top' and 'bottom' copies. First that the 'top' copy was often produced on thicker higher quality paper that was often headed, whilst 'bottom' copies were made on thinner lower quality paper called 'flimsies' and less likely to be headed (Hoke, 1979; Nadeau, 2002; Gitelman, 2014). Second, 'top' copies were made with the higher quality ink used by the typewriter itself, whilst 'bottom' copies were produced by the ink from the carbon paper, which was often blurred and faded (Sheridan, 1991; Polt, 2015). Third, there could only ever be one 'top' copy, whilst there could be numerous 'bottom' copies<sup>9</sup>. The differences between 'top' and 'bottom' copies distinguish them from each other and are a product of how each was produced through the interactions between typewriters, carbon paper, and plain paper.

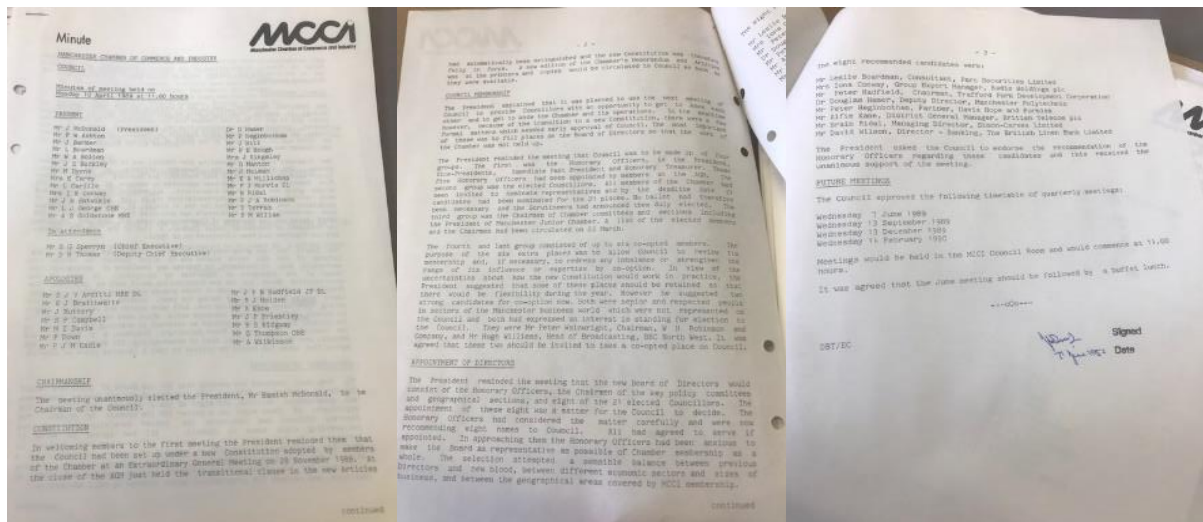
The different characteristics of top and bottom copies shaped how they were used by staff in the Town Hall. The 'top' copy was often treated as the original document, which Regina would sign, stamp and would be sent to her boss. Similarly, 'top' copies were used for official meetings due to their higher quality and be kept as records. An example of a typewritten top copy of minutes is shown below:

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<sup>9</sup> Though often only approximately 4-5 copies could be made at a time, with additional layers of under copies becoming less legible (Hoke, 1979; Campbell-Kelly et al, 1997).



Photograph 4.2 of copied minutes from joint MCCI-City Council meeting held on April 1990



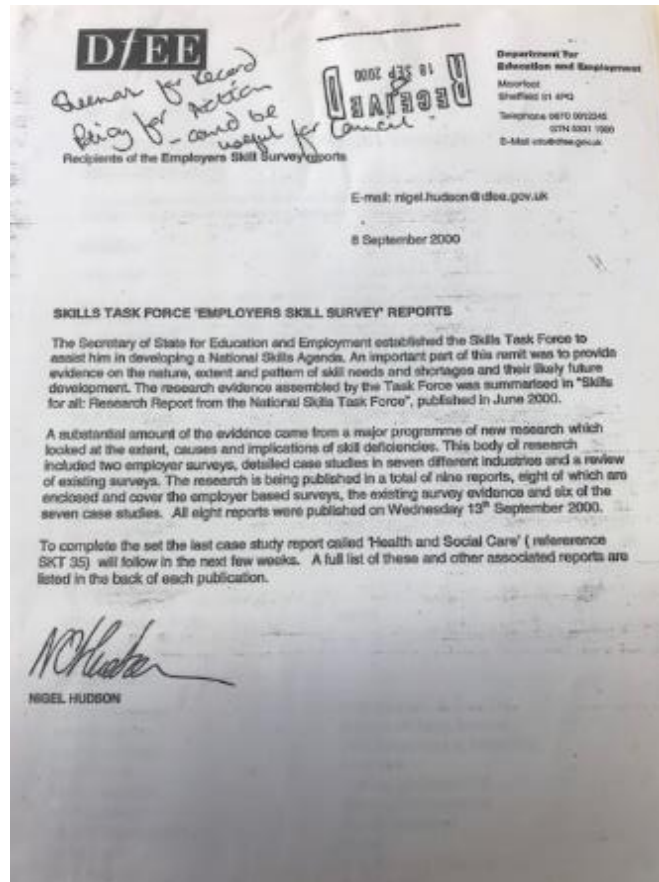
These top copies were made on headed paper, that was signed and eventually became part of official city records. Meanwhile ‘bottom’ copies were more likely to be discarded or sent to other interested groups. In this sense, ‘top’ copies were given a greater sense of status, whilst ‘bottom’ copies were more expendable, despite having identical text produced at the same time and by the same means. This not only shaped how these two different kinds of documents are used but where they went after the copying process was done, and ultimately leading them down different trajectories.

By contrast, a prominent feature of photocopying configurations was that they could reproduce almost any document (Van Meel, 2011; Xeroxnostalgia, 2021a; Xeroxnostalgia, 2021b)<sup>10</sup>. Originals in photocopying are defined as pre-existing eventual photocopies, and because photocopying can copy almost any type of document, almost any document can serve as an original (Proudfoot, 1972; Smith and Alexander, 1999; Fayard, and Weeks, 2007; Carbon Pilgrim, 2012). Yvonne’s story (alongside other accounts) provides some examples of the range of originals used in photocopying in the Town Hall. Yvonne describes using carbon copies made on a typewriter, Erica<sup>11</sup> describes photocopying housing plans for the Architects department, and Mary photocopied pages of handwritten check receipts in the Treasurers department. Through photocopying, any document could be endlessly copied and recopied, as shown in the photograph below:

<sup>10</sup> One exception to this rule was that original documents made in other colours (especially darker colours) made it difficult for the photocopier to ‘distinguish’ between marked and unmarked parts of documents, and to clearly and cleanly copy writing (Nelson, 1978).

<sup>11</sup> Erica started work in the Town Hall in 1965 as an office junior and assistant to the chief executive. She remained in the Town Hall until she retired in 2010, moving through various positions such as being a policy developer for the transport department.

Photograph 4.3 of a photocopied 'Skills Task Force' letter from Small Firms committee meeting records held on September 2000



The original version of this was document drafted, signed on a computer before a physical copy was printed and at some point, annotated in pen and then stamped. This copy was then itself photocopied to produce the document in this photo, which was then kept as a record in the city archives. Photocopiers were also used to create copies of other types of documents such as newspaper clippings, as shown below:

Photograph 4.4 of a photocopied newspaper clipping from IT committee records held on November 2000

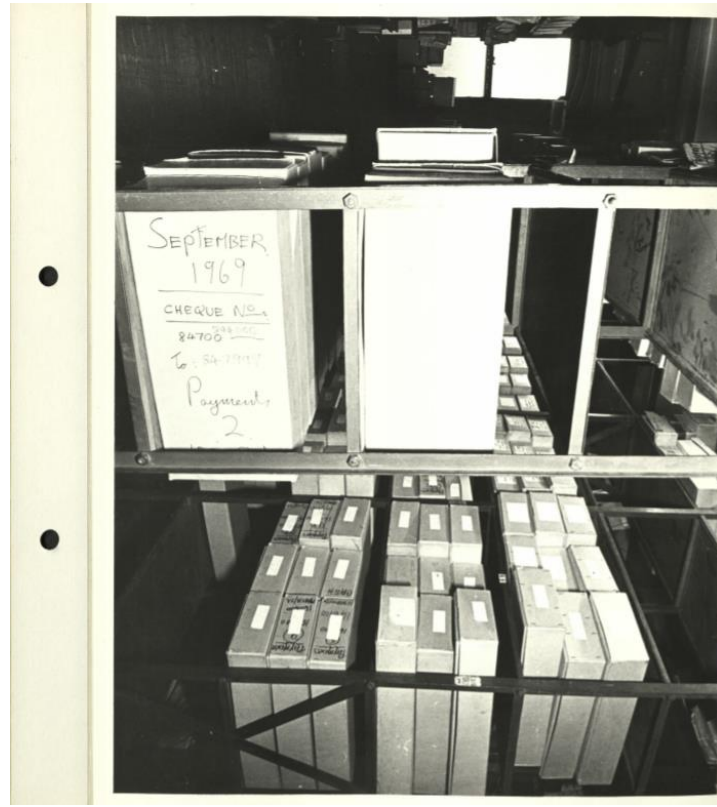


In this case, the clipping was cut out of the newspaper (itself a copy) and photocopied for use in the IT committee meeting, and then kept as part of official records. This is illustrative of how photocopiers can make copies of nearly any kind of document, including documents that might already be a copy. Brown (1998) describes this as a “proliferation of copies and of copies of copies” (p.231), with documents being endlessly reproduced, with each copy itself fulfilling the role of an original when being put into a photocopier to produce new copies. This leads to a different relationship between original and copy in the case of photocopying than in carbon copying.

What distinguishes an original and a copy becomes a matter of how they are used, rather than necessarily any physical differences. This is evidenced by Yvonne, Erica, and Mary’s similar accounts, in which they all signed the top copies of the letters they had written which were then kept by elected officials, whilst photocopies of the same letters were often mailed away or stored as records. This difference is a consequence of the material relations between the objects like between typewriters and carbon paper, and between photocopiers and original documents.

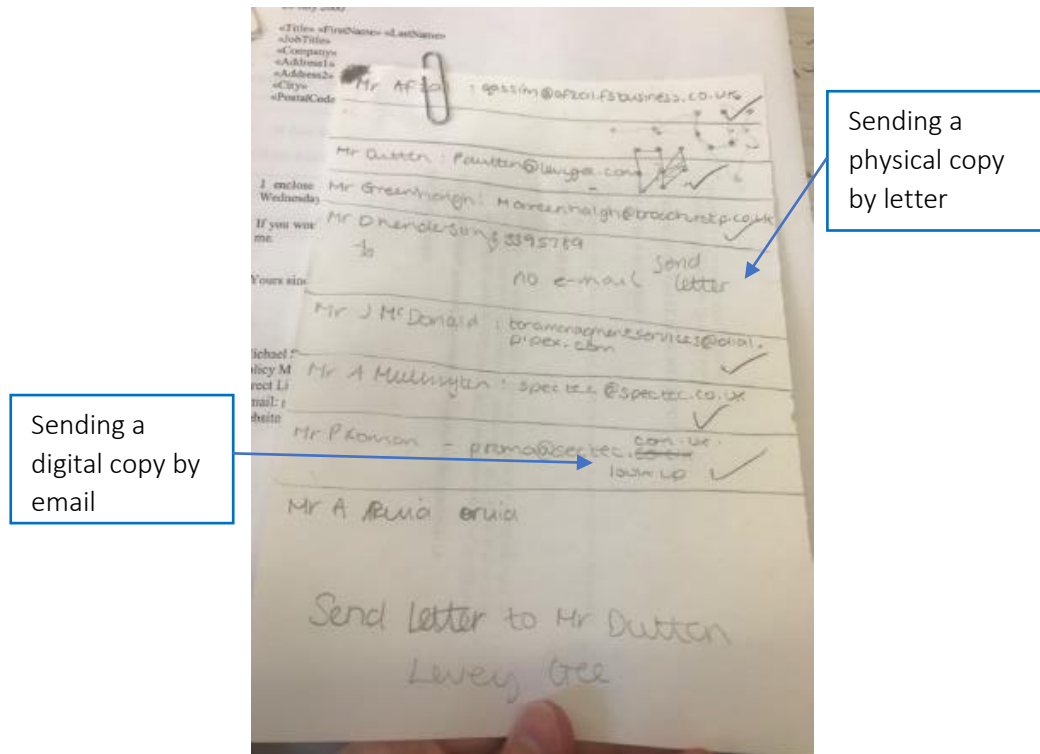
In the context of computer copying what constitutes an original and copy must again be rethought, in this case the key feature (and comparison) is that the original is not a physical document, but a digital one. Sharon describes first needing to type out the original spreadsheet using her desktop computer, based on information she would get from cheques and payments stored in the basement storage in the Town Hall (see photo below).

*Photograph 4.5 of the cheques and payments storage for the Treasurer's department in the basement of the Town Hall in 1982*



Once she turned the information on these physical cheques onto a digital spreadsheet, the document would be stored digitally on her computer's hard drive. However, whilst the 'original' must be stored on a computer or other storage device in digital form, the copies that are reproduced from this original can take either paper or digital forms. Sharon's story (alongside similar accounts by Erica, Regina, and Arthur) illustrates multiple ways computers could produce copies involving instances of different objects: duplicating documents onto hard drives or floppy disks; having the computer files backed up onto servers and mainframe computers; email a version to colleagues or bosses; and, printing out a physical copy of the documents via a connected printer. The use of email to proliferate digital copies of documents allowed for copies to be disseminated across the Town Hall and beyond almost instantaneously (as shown in photo 4.6):

Photograph of 4.6 a handwritten list of email addresses from Small Firms committee records held on September 2000



The photo shows a handwritten list of email addresses attached by paperclip to a letter from the committee, the note indicating who needs to receive emailed copies of the letter. Also indicated in the list are people who would need a printed copy of the letter instead. Different kinds of copies are being reproduced, which have different trajectories in the Town Hall. This is also shown in Sharon's story where digital copies of her spreadsheets (like those stored on floppy disks) were eventually discarded, whilst printed copies were used to create the official City Council budget books which would eventually become public record. This is illustrative of different types of copies, each being stored, accessed, edited, and used differently, based on their different characteristics (such as being physical or digital). As with carbon copying and photocopying, these distinct characteristics are based in how they are copied and the material relations between computers, printers, floppy disks, email software and more.

This section shows that different kinds of 'originals' and 'copies' exist in office work, distinguished, and defined by their different characteristics ranging from ink and paper quality, to being physical or digital. In the case of carbon copying, the only distinction between the original and the copy was that one was produced on better paper and with better ink, but these 'minor' material differences led to the original being kept longer and with greater care than its carbon copied counterpart. The production and reproduction of originals and copies with different characteristics in the Town Hall

meant that originals and copies were taken up and used in diverse ways by Town Hall staff. The material and physical differences between originals and copies played an important role in the shaping of their trajectories and careers in the Town Hall, and in some cases determined how long these documents existed until they were destroyed or discarded.

### **4.3. Editing and altering documents during and after copying: the versionality of originals and copies**

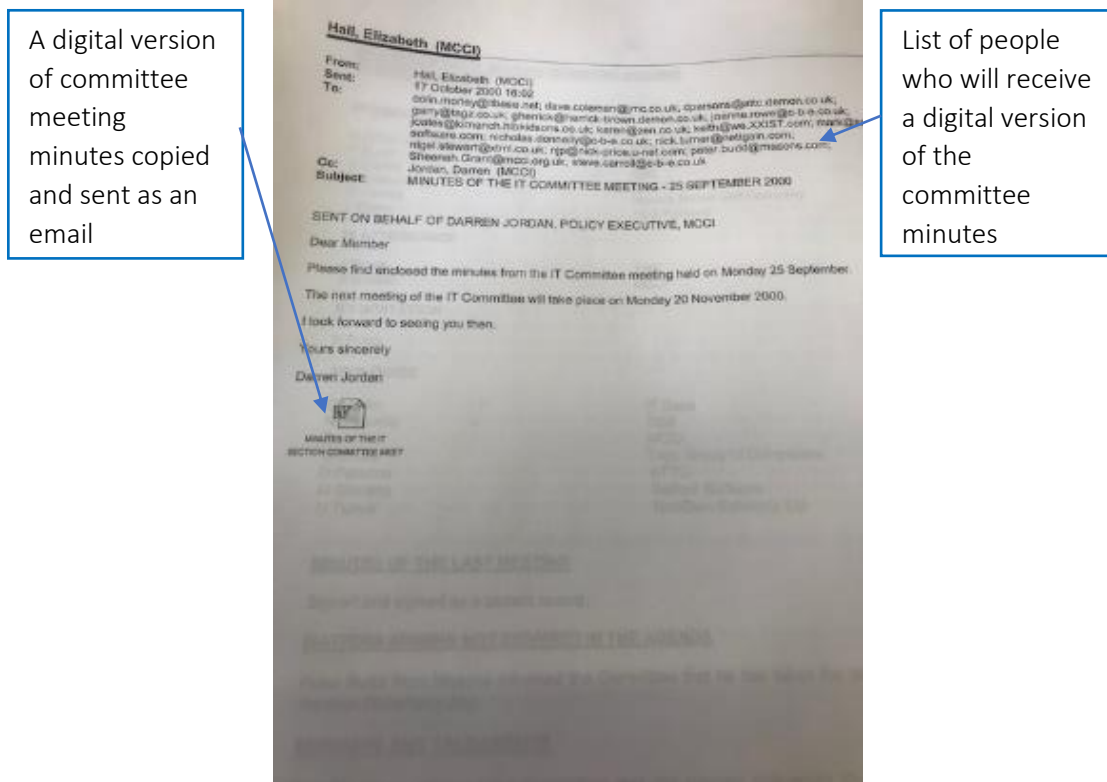
The stories of Regina, Yvonne and Sharon describe how the process of copying is often connected to the process of drafting documents, something which happens iteratively through various edits, changes, and corrections. Not only can distinct kinds of originals and copies exist, but also many co-existing iterations or versions of originals and copies. This section argues that documents produced/reproduced by carbon copying, photocopying and computer copying exist in varying states of 'versionality' (Owen, 2004). This is because each instance involves and affords varying degrees of editing, altering, and correcting through their respective copying processes. The idea that documents have versionality is primarily referring to computer copying and digital documents and was discussed by Owen (2004) who argues that a digital document "*simply exists in a fluid succession of related states*" (p.8). Through computers there is potential to edit, copy, distribute and develop many (and sometimes only slightly different) versions of a document which co-exist simultaneously. This contrasts the clearer distinction between originals and a copies found in describing carbon copying and photocopying, and stems from the ways computers can interact and collaborate with other kinds of objects such as networks, servers, floppy disks, and softwares (namely email).

Dahlstrom (2019) considers the idea of versionality during his examination of the influence that digitising documents had on the nature of original and copies. He argued that every time a digital original is distributed to another device or form of storage (i.e., floppy disks, pen drives, hard drives, another computer) new versions of these documents are made. In this sense, computer copying is not only varied (in terms of the number of ways to produce a copy), but also affords a high degree of 'versionality' for documents which might have many different versions of itself stored and accessible in different forms. The potential for digital documents to existing in highly fluid states of 'versionality', as suggested by Dahlstrom, is only made possible because of the relations between digital documents and computers, in particular the ability for computers to save, share and edit digital documents easily and quickly.

Sharon's story illustrated the potential versionality of digital documents in computer copying. Her spreadsheets often existed duplicated in multiple simultaneous versions stored in different ways: floppy disks, computer hard drives, routine mainframe backups, emailed to other colleagues, or

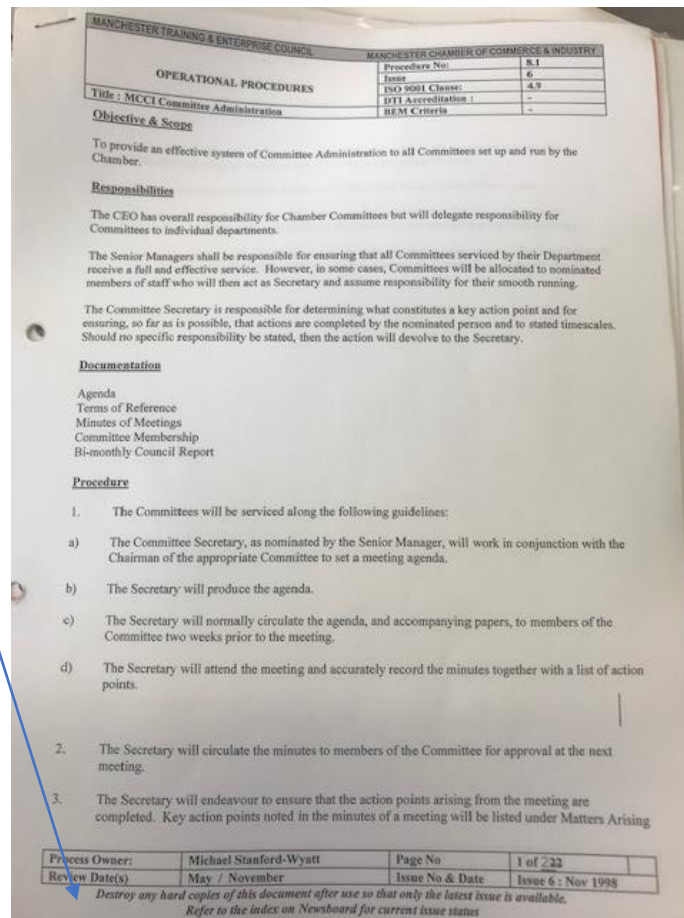
physically printed and filed away. Emailing especially, allowed users to proliferate digital versions of a document easily and quickly (see photograph 4.7)

*Photograph 4.7 of a printed email with attached minutes from the IT committee records held on September 2000*



In this photograph the initial version of the minutes stored on a computer is turned into multiple digital versions disseminated across many computers via email. These emailed copies are then stored, with the potential to be edited and further disseminated. Not only does computer copying expand the possibility of many co-existing digital versions of documents, but also open new ways for these versions to co-exist in different formats (Sellen and Harper, 2003; Haigh, 2006). There is also the potential for computers to collaborate and interact with printers to create physical copies of a document (see photograph 4.8).

Photograph 4.8 of a printed copy of the Manchester Training and Enterprise Council's Operational Procedures from the City Council IT committee records held on November 2000



Instructions in italics that specify the destruction of previous copies of this document after their use.

This document came with instructions to destroy any 'hard' copies produced so that only the most recent version was kept. This is another example of how different versions of copies, produced by different means, go on to have different trajectories, in which earlier versions are destroyed whilst newer ones are kept. This high degree of proliferation of different versions of document is only made possible because of the ways computers relate and intersect with digital documents alongside a diverse range of other objects like printers, and software such as email.

Whilst the concept of versionality is primarily used in reference to digital copying, it can also be applied to the iterative editing-drafting-copying process seen in carbon copying. In carbon copying, the processes of copying and drafting documents take place simultaneously, and subsequently affords office workers (like Regina) the chance to edit and change documents as they are being typed and copied. For Regina, carbon copying fits into a more iterative process of drafting documents. In this process, top and bottom copies are produced simultaneously and by hand, meaning any mistakes are also duplicated. Mary described this process of making carbon copies as being lengthy and time consuming, as any edits or mistakes meant starting entire paragraphs or even pages of a document



over. Versions of documents were also often sent out to review by superiors and colleagues, or in Regina's case by committee and could come back with more edits, leading to new versions of top and bottom copies to be retyped and re-copied. Despite the potential for constant editing and versionality, office workers like Regina were required to 'complete' their documents and produce a final version, which in Regina's case was then signed, stamped, and made official (implying a certain degree of inalterability). Through this iterative drafting process, top and bottom copies go through various versions of themselves, differing sometimes in significant and sometimes minor ways. Typewriters and carbon paper interact and collaborate in ways that allow or encourage users to edit and copy in this iterative manner.

Photocopying by contrast does not involve as much editing, altering, or correcting during the copying process or changing an original during the copying process. Instead, because photocopiers will copy originals exactly as they are, emphasis is placed on making sure documents are in a state of relative completeness, as any mistakes on the original will also be duplicated. In all three vignettes, Regina, Yvonne, and Sharon discuss sending their respective documents to the print room photocopiers when they needed many copies produced or if they needed copies to be bound into books (as was the case with Sharon's spreadsheets). In these cases, the process of drafting, editing and correcting mistakes took place before the photocopying process, with photocopying taking place at the end. There is less potential for 'versionality' in originals and copies through photocopying when compared to carbon copying and computer copying.

This section shows that the process of copying often involves more than just duplication, but also editing, altering, and correcting documents. This is highlighted by how carbon copying, photocopying and computer copying facilitated (to varying degrees) the proliferation of many versions of a document. In computer copying, versions of copies could be made and distributed physically and digitally, resulting in documents existing in a potentially high degree of versionality. Carbon copying also affords versionality of both top and bottom copies through its iterative process of drafting-copying-editing documents. Photocopying by contrast does not afford many opportunities to change originals or copies during the copying process, instead this is done before photocopying happens. This degree of versionality in computer copying, is not found in carbon copying, or photocopying because the objects (and relations) that constitute these other instances of copying cannot afford the same degree of flexible and iterative document editing, saving, and sharing. This section also showed how the order of certain tasks, like drafting, editing, or correcting, is determined in part by the affordances of different instances of copying objects, for example photocopiers (at least those in the Town Hall in the 1980s) encouraged office workers to complete editing prior to copying.

#### **4.4. The roles of users in copying**

The previous sections in this chapter have focused on the direct physical interactions and connections between objects. However, discussing the different ways in which objects physical interacted as part of carbon copying, photocopying and computer copying inevitably leads to the roles of office workers in the production and reproduction of originals and copies. Objects almost always require users<sup>12</sup> because of how they interact or connect with each other, but the degree to which users are required depends on how autonomous objects are in how they function and how they are designed to work together. This section argues that carbon copying, photocopying and computer copying each encouraged (or required) their own types and levels of interactions and collaboration between objects and office workers in the Town Hall. In doing so it highlights the interconnection between the direct material and physical relations between objects, and the relations objects have to each other (and people) through the performance of copying practices.

As mentioned earlier in this chapter, carbon copying was a mostly manual process, requiring a typist to type out each character in the document by hand with little automation (Flewitt, 1984; Greenbaum, 2004; Clandfield, 2005). This was illustrated in Regina's story through the typing pool that copied documents and shown in photograph 4.1. Regina describes and characterises the performance of carbon copying as being 'laborious', with a sometimes-lengthy back-and-forth drafting and copying process. The heavy involvement of users in the carbon copying process reflects a temporal arrangement that requires users to be simultaneously present and active in the copying process. This illustrates how the performance of office practices, such as how long it takes to complete them and how involved users are in actively completing them, are partially determined by how objects interact and collaborate.

Photocopiers, by comparison, are more automated, and internalise the copying process without requiring as much user involvement as carbon copying did, which in turn changes the relationship between user and object. Yvonne described being able to set the xerox photocopier she used in the late 1990s to make up to 50 copies of a document. Yvonne still used a typewriter to produce the original by hand but once this original was 'complete' the copying process was performed by the photocopier with Yvonne standing by and waiting for the process to finish. The automated steps involved in photocopying, which in carbon copying were manual and performed by a person, are internalised by the photocopier, and implies minimal user involvement.

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<sup>12</sup> Users in this context refers to people, and the ways in which they interact and use objects as part of performing different office activities, namely copying. Users in this sense, are treated similarly to objects, with both being physical things which can directly and physically connect and interact with each other.

As photocopiers were expensive and large in the 1980s and 1990s (Owen, 2004), there were relatively few in the Town Hall, which were shared across several offices or even entire floors, as was Yvonne's experience in 1998. This observation that photocopiers in this period were likely shared by many people is examined in Fayard's (2007) study of how photocopiers encouraged social interactions in working environments, in which Fayard argues that:

*“Photocopying itself, far from being a solitary or individualistic task, is often collaborative... [photocopiers] require periodic maintenance and resupply of paper and toner, tasks requiring knowledge (e.g., where the paper and spare toner cartridges are kept) and skills (e.g., how the paper is loaded into the machine to prevent jams or how the toner cartridge is installed) that tend to be unevenly distributed among users of the machine.”* (Fayard, 2007: p.613).

Photocopiers being shared by entire offices or floors made them nodes around which office workers interacted, whether it was waiting for photocopying to complete or to attempt to fix malfunctions and paper jams. Yvonne's preferred method of avoiding overheating and jamming was to do her photocopying early in the day before her colleagues had a chance to use the photocopier. Similarly, sharing the photocopier led to office workers like Yvonne to adopt certain rules, such as a priority order for who got to photocopy their work first, or that no one would print more than 50 pages per person to avoid overheating. These are examples of whether certain rules or forms of etiquette emerged out of the ways in which objects require users to interact with them in certain ways, such as how they are shared or maintained. These rules in turn, shape how office workers, like Yvonne, organise their time, and how and when they carry out tasks during their workdays.

The roles of users, and how they collaborate with objects in computer copying depends on whether they are creating physical or digital copies, and subsequently what objects or software's they engage with (i.e., printers, floppy disks, hard drives, and email). Sharon's experiences with her computer printer shares similarities with Yvonne's experiences with her photocopier. This is because both objects were shared, with Sharon's computer printer being shared with her office of five (photo 4.1 shows a similar scenario of a printer shared between three computers), and Yvonne's photocopier being shared by her entire floor. In both cases, Sharon and Yvonne were guided in their interactions with their printer and photocopier by rules and an etiquette, which included an aspect of sharing these objects with others.

By contrast, digital copying changes what objects are being used in the computer copying process, now involving other objects like floppy disks, software like email, and (in the specific case of Sharon) a mainframe network. These changes moved the process of computer copying from a shared and communally mediated process, to a more individualised one. The differing experiences of digital and

physical copying through computers is illustrative of how computers serve as intersections of various sets of software and hardware, allowing for a variety of ways to perform certain tasks. In this sense, computers can shift in and out of a variety of relations with different objects depending on how it is being used. This also suggests that whilst software email like does not fit into typical definitions of an object, they can be collaborated with and interacted with by users in a similar fashion (this will be explored further in chapter 6).

Carbon copying, photocopying and computer copying in the Town Hall represent distinct collaborations of users and objects, who interact with each other based on what objects are used and what they required of their users. In this section it is possible to see some of the ways in which the broader rules, etiquette of norms surrounding office tasks like copying, are determined (at least partially) by the simple ways that objects directly interact and physically connect with each other in everyday work. Importantly this section paints a broader picture of how different kinds of relations between objects, whilst conceptually separated in this thesis, are interlinked and interdependent in everyday life. The interdependent and interconnected nature of material, spatial and practice-based object relations is also a reoccurring theme across the following two chapters and emphasises the complex and intricate networks of relations that interconnect and characterise different objects in locations like the Town Hall.

#### **4.5. Conclusion: Trajectories of originals and copies in the Town Hall**

This chapter has described some of the ways objects in carbon copying, photocopying and computer copying collaborated, interacted, altered, edited, consumed, and transformed each other. Vignettes were developed from experiences of Town Hall staff during the 1980s and 1990s, describing how copying was performed through each instance.

This chapter has identified three ways in which objects involved in copying collaborate and interact with each other. First, different instances of copying objects led to the production and reproduction of originals and copies with their own features, which in turn shaped how they were used by Town Hall staff. Based on how they were produced/reproduced, and their consequent physical characteristics, different types of originals and copies would have different trajectories within office work. This is illustrated in how the biographies of carbon copies are distinct from those of digital copies, as they were treated and understood differently based in part on how they directly interacted with other objects. Second, the ways in which objects collaborated and connected to each other impacted the scope to which originals and copies could be edited, altered, and corrected as part of different processes of copying. In this manner, documents can be understood to have varying states of 'versionality', in which many versions and iterations of documents co-exist and proliferate within

offices through copying. The potential for versionality is based in how each instance reproduces documents. Finally, whilst all three instances required users to interact with objects, the ways in which these instances play out in practice vary based on how objects require users. These can range from material relations between typewriters and carbon paper requiring users to engage in the copying process actively and continuously, to more automated but communally shared and maintained interactions with photocopiers, to the more flexible options for how users interacted with computers and swap between different sets of objects to digital or physical copying.

This chapter argues that objects, like documents, have trajectories in the sense that they can transform and change over the course of time as they enter into different spaces and users over time. As objects continue their trajectories through offices like in the Town Hall, they also enter into and become part of new instances and relations of objects and users. In doing so, objects can also take up new meanings and roles. Relations between objects can be temporal and subject to change, which suggests that objects should be examined across their evolving trajectories. The concluding chapter of the thesis will consider some of the potential approaches that a museum might use to visualise the webs of material relations that co-exist in offices, and how to represent the career of an object in an office.

The discussions in this chapter also hints at more indirect, complex and extended forms of relations between objects in the Town Hall. Objects do not necessarily have to directly connect, attach, or interact with each other to have relations, and some object relations are mediated through other means. The vignettes developed from the Town Hall staff's experiences, notably Regina's and Yvonne's, highlighted that relations between objects are often spread within and across various office spaces in the Town Hall, with documents moving around spaces as they changed hands and were used in sequences of office tasks. How objects are indirectly connected and related across different scales of space, is examined in further detail in the following chapter. At the same time, the final section of this chapter indicates that objects are related through how they are used together by Town Hall staff in the performances of various office practices. These practice-based relations between objects are the focus of Chapter 6.

## Chapter 5: Desks, offices, and infrastructures: object relations across space and time

The purpose of this chapter is to investigate some of the ways objects can be related within and across spaces. As discussed in chapter 2, concepts such as ‘scripts’, ‘affordances’, and ‘innovation junctions’ work with similar understandings that object relations are, to different degrees, spatial in nature. The approach of this chapter is to apply these concepts to the examination of three different scale of space in the Town Hall. The first scale revolves around how objects might be closely arranged and positioned in or around individual desks. The second scale of space widens to include how objects (including desks) are arranged and organised to fit into an offices. The third scale of space expands to consider how objects across different desks, rooms and even floors, can be connected to each other through the infrastructure of the Town Hall building, such as through its electricity grid or telephone lines. These infrastructural connections between objects also have the potential to extend beyond the Town Hall itself.

This analytical approach begins by presenting a basic description of some of the desks, offices, and infrastructures of Town Hall Treasury through a content analysis of photos from two separate albums, one created in 1960-62 and another in 1979-80. Photos from these two albums were especially useful because they both included accompanying descriptions made by their respective creators, detailing objects, and room titles. The Treasury was specifically chosen because it was the only department explicitly featured in both photo albums. This provided an opportunity to compare how various office objects were configured and related within and across the same department, and how objects ‘come and go’ from the Treasury, as its working practices and organisation changed between 1960-62 and 1979-80. The basic description (see section 5.1) focuses on one desk and one office space from the Treasury in the 1960-62, and one desk and office space from the Treasury in 1979-80. This included examining photos depicting the Town Hall’s floor plans from the 1979-80 album, which outlines some of the infrastructural and departmental changes that were occurring across the Treasury during that time. The contents of each photograph were highlighted, such as what objects are shown and how they were arranged across the desks, office and infrastructure of the Treasury and Town Hall.

Sections 5.2, 5.3 and 5.4 revisit and re-examine the basic descriptions through the application of different conceptualisations of ‘space’. The first conceptualisation of space is drawn from Gibson’s (1979) idea of object affordances and Akrich’s (1997) idea of object ‘scripts’. Gibson and Akrich provide similar accounts of space as a bounded and bordered entity that ‘contains’ objects and suggest that human-made spaces like offices are (like objects) designed or ‘scripted’ in ways that

shape their use. This approach emphasises examining the physical properties and design of objects as these 'afford' or 'constrain' how they are positioned within desks, offices, and infrastructural spaces. The second conceptualisation is drawn from De Wit et al's (2002) analysis of office spaces as 'junctions' in which objects intersect and interact as part of organised sequences of tasks, forming systems in which objects are interdependent on each other across space. The final approach is based on Massey's (2005) three propositions of space which conceptualises it as borderless 'sites' of networks of relations between people and objects which can range potentially across multiple spatial scales. These three distinct approaches, and their respective conceptualisations of space, offer different vantage points for understanding groups of objects and draw attention to different aspects of objects and how they relate across space. This chapter argues that these different approaches add up to highlight the co-existence of multiple more and less visible forms of relations that objects may have across space.

The chapter shows that objects often rest within multiple layers of spatial and infrastructural relations that can range from overt to near invisible, and which can range from being close, direct, and intimate to the distant and globally reaching. How these arrangements and configurations of objects change, and what objects 'come' and 'go', often reflect broader changes across the Town Hall or in office work more generally. One of the key findings of this chapter was that the ways objects are organised and related within and across spaces often reflects the organisation of people and of work activities, and vice versa. This was reflected in how the Treasury experienced a general shift from its linear and highly inter-dependent punch card system in 1960-62, and towards the more flexible use of calculators and computers by 1979-80. Overall, examining how objects relate within and across space, and how these relations are interpreted as part of broader changes in the organisation of office work and spaces, is strongly influenced by how 'space' is conceptualised by different people.

### **5.1. Describing desks, offices, and infrastructures**

This section provides an initial description of the Treasury desk, office and infrastructure photos in 1960-62 and 1979-80, which will be re-examined in later sections of the chapter. The data analysis focused on photographs of the interior spaces of the Town Hall Treasury, taken from two different albums. Photos from the first album, referred to as the 'Treasury album', were taken between 1960-62 and show various punch card and computing machines found in the Treasury during this time. Each photo shows one machine and includes a caption (written by an unknown individual) describing it. Photos of the second album, referred to as the 'Refurbishment Album', were taken between 1979-80 as taken to record changes made during the Town Hall's 1979-80 refurbishment. Photos in the Refurbishment Album were accompanied by plans for each floor of the Town Hall, which show the

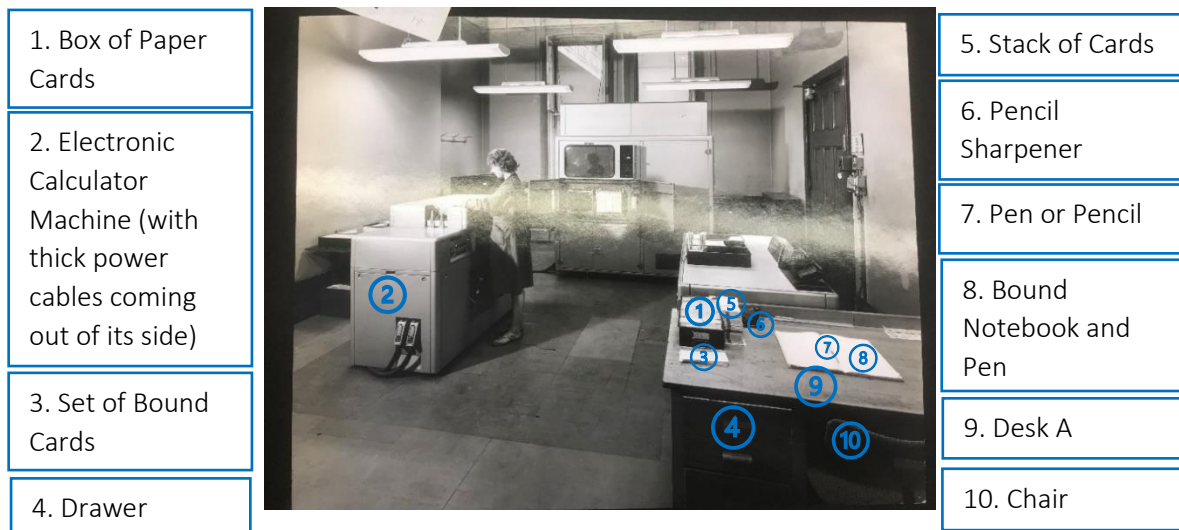
titles of every room in the main building (the extension is not included) before and after the refurbishment.

Photographs of one desk and one office space have been selected from each album (i.e., each period), and were selected based on the clarity (i.e., too dark, too blurry, shot at a bad angle) and level of detail in the photo (i.e., the number of objects shown). These were examined and annotated to highlight the different objects in each space. It is important to note that whilst the selected desk and office photos depict the Treasury during different periods of time, they do not show the exact same office spaces. The floor plans of the Town Hall from the 1979/80 album were also examined to identify infrastructural and departmental changes that were occurring with the Treasury during that time. The photos are presented in an order, starting with the two desks in each period, then the two offices, and then the floor plans which outline the broader infrastructure of the Treasury.

### Describing desks in the Treasury from 1960-62 and 1979-80

The first description focuses on a desk from 1960-62, seen in the bottom right corner of photo 5.1, which is from the 'Treasury album' and came with an accompanying caption describing an electronic calculator. The desk was in a room titled the Treasurer's Office, and prominently includes an electronic punched card calculator.

*Photo 5.1 of a desk and an electronic calculator in the Treasury, 1960-62*



*Caption: "The electronic calculator carries out complex calculations at great speed and punches the result either onto the card containing the calculation data or onto a new card. It can perform any arithmetic function – addition, subtraction, multiplication, and division. It has a great variety of uses in costing, payroll, interest payments, rating etc."*



This desk was wooden with a built-in drawer and was accompanied by at least one chair. On top of the desk was a bound notebook with a pencil or pen positioned centrally on the desk surface, with a wooden ruler and pen found just above the notebook. On the left side of the desk were punched cards found in three forms: banded together, stacked in piles, and placed upright in a wooden box/tray<sup>13</sup>. Whilst the focus is on the immediate arrangements in and around the desk, the annotation suggests that the specific purpose and role of punched cards on the desk is linked to the electronic punched card calculator (also referred to as accounting machines or card-programmed calculators) seen to the left of the desk (Gandy, 2012).

The second desk being described is from 1979-80, seen in the bottom right corner of photo 5.2, from the 'Refurbishment Album'. The desk was in the Treasurer's Loans Office, located on the Town Hall's ground floor (see photo 5.6 which shows the floor plans).

*Photo 5.2 of a desk in the Treasury, 1979-80*



This has desk drawers and a single accompanying chair, and its surface was covered with a loose assortment of papers and folders, and stationery such as two pens and a ruler. This desk also had electric devices on top of it, including a small pocket calculator which would have become available during the early 1970s (Stoll, 2004), as well as a two-tone rotary telephone<sup>14</sup>.

<sup>13</sup> Punched cards were used to input and record different types of information and were developed alongside the first mechanical tabulators and calculators in the 1890s and were a common form of data storage and representation until the 1970s (Wahl, 2018; Heide, 2009).

<sup>14</sup> At this time, telephones were exclusively produced and installed by the state-monopolised General Post Office (GPO) until the telecommunications industry was privatised on 1981 (Liffen, 2013; Daunton, 2015).

## Describing offices in the Treasury from 1960-62 and 1979-80

The first office being described is from the 1960-62 'Treasury Album' and is depicted in a photo 5.3, which also prominently displays a 'major tabulator', which is a type of punch card machine. The columns in the Treasurer's department office indicate that this particular room was located on the basement or ground floor, but whilst this office is from the Treasury, the title of this room is unknown.

*Photo 5.3 of an office in the Treasury, 1960-62*

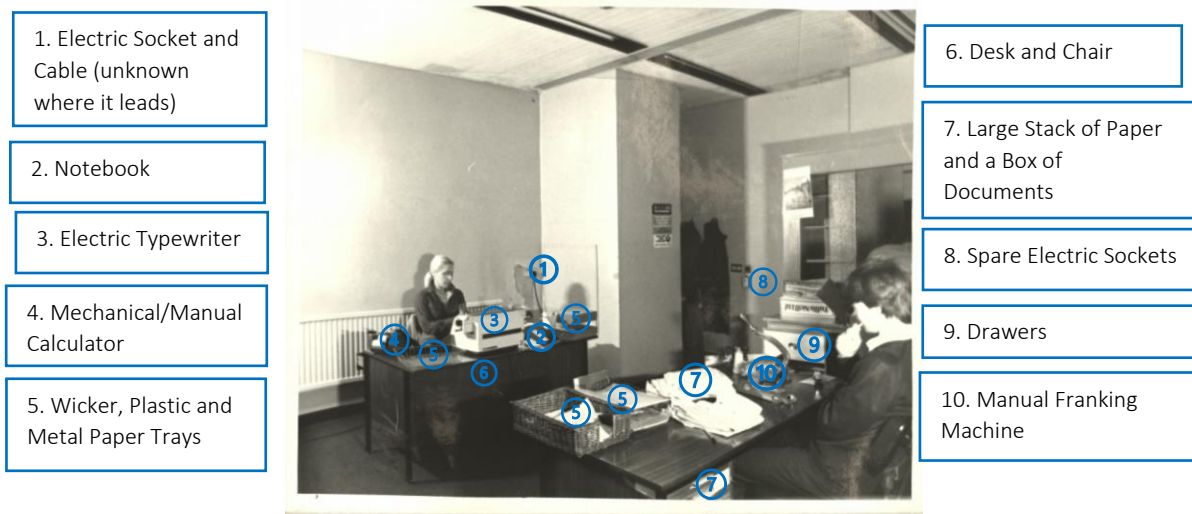


Caption: *"When the cards are punched, verified, and sorted and if need be, collated, they are fed into the tabulator which will produce all kinds of printed documents – schedules, ledgers, invoices, cheques etc – containing just as much of the data contained on the card as has been decided upon. This machine also adds columns required, arrives at cumulative totals etc and prints results as determined. Considerable training and skill is required before an operator can set up and "control" a tabulator, but once the machine is set up its operation is automatic at speeds of from 4,000 to 9,000 cards an hour, depending on the work it is called upon to do."*

Within this room the major tabulator was centrally positioned with space left around the machine so it could be operated by workers. Around the tabulator were three wooden desks, each covered in various papers and boxes. Lining the walls of the room were two sets of filing cabinets, which potentially contain punched cards, each having multiple columns of individually labelled metal drawers. Punched cards were often stored in filing cabinets that would have been used with the tabulator and other nearby punch card machines (Williams, 2002; Gandy, 2012; Driscoll, 2012).

The second office being described is from the 1979-80 'Refurbishment Album' and was one of five rooms that constituted the Treasurer's Accounts Office, which was located on the ground floor of the Town Hall (see photo 5.6). The photo (5.4) is also accompanied by an annotation explaining that "A screen in the centre hides from view the clerks engaged in the more private work of the department", and that this office space "served as a computer room" (though the computers and partitions cannot be seen in the photo).

Photo 5.4 of an office in the Treasury, 1979-80



This office contained two wooden desks with single chairs, with different objects on or around each. The desk in the foreground had two paper trays on its left side, one made of metal the other of wicker, with a stack of paper, and stored within and below the desk is a box of documents. Placed in front of the person stationed at the desk is a manual franking machine which was used to stamp parcels and letters to pay for their postage in lieu of using paper stamps (Peach, 2001; Campbell-Kelly, 2007). The desk in the background had trays of paper and a programable desktop calculator (also called a printing calculator), developed in the 1960s (Flamm, 1998).

### Describing the Town Hall's infrastructure in 1960-62 and 1979-80

The 1960-62 'Treasury album' and 1979-80 'Refurbishment album' provide some insights into some of the ways objects were connected to each other across different types of infrastructures across the Treasury and the Town Hall as a building. Photos from the 1960-62 Treasury album, in particular photo 5.1 depicting the electric calculator, illustrate how many of the large punch card machines required connection to the electric grid via multiple thick power cables. All the punch card machinery shown throughout the 1960-62 Treasury album, from card sorters to collators, similarly required connection to the main electrical grid (Cortada, 2000; Driscoll, 2012). Photos 5.2 and 5.4 from the

1979-80 'Refurbishment album' likewise provide some indications of how objects connected across various infrastructures in the Treasury: rotary dialling telephones wired into the telephone lines; electric typewriters plugged into the building's electricity supply; and radiators connected to water pipes and gas boilers.

The 1979-80 'Refurbishment Album' also contains floor plans for the Town Hall's main building (see Photos 5.5 and 5.6). These plans, and the accompanying annotations provided by the album's author, describe how various departments moved their locations around during the Town Hall's refurbishment in 1980 (Waterhouse and McLeod, 1980). The Treasury is shown to have expanded its offices into spaces previously belonging to the Public Gas Office on both the basement and ground floor of the building. The 1979-80 plans for the basement and ground floor are shown below, along with captions quoting the annotations found in the original album describing each room and what department came to occupy them:

*Photo 5.5 of the Town Hall's basement floor plan, 1979-80*

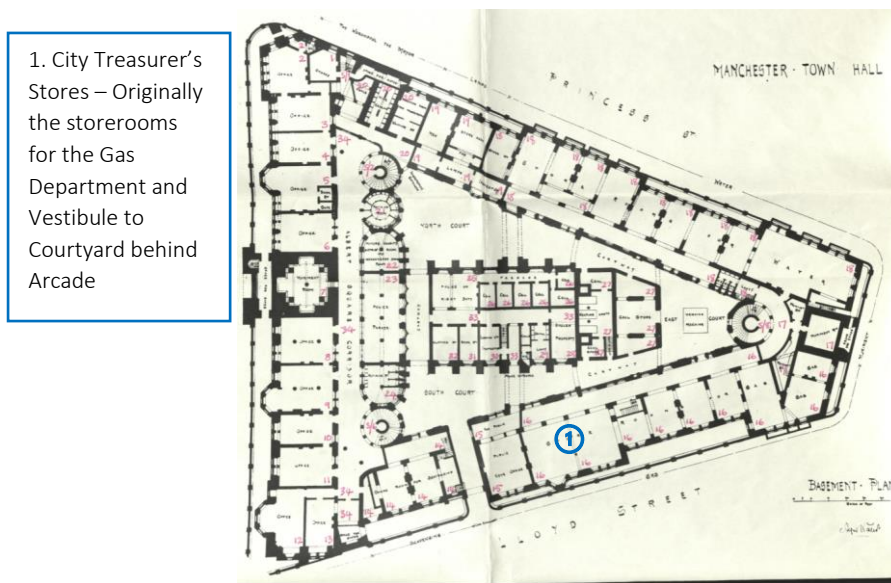
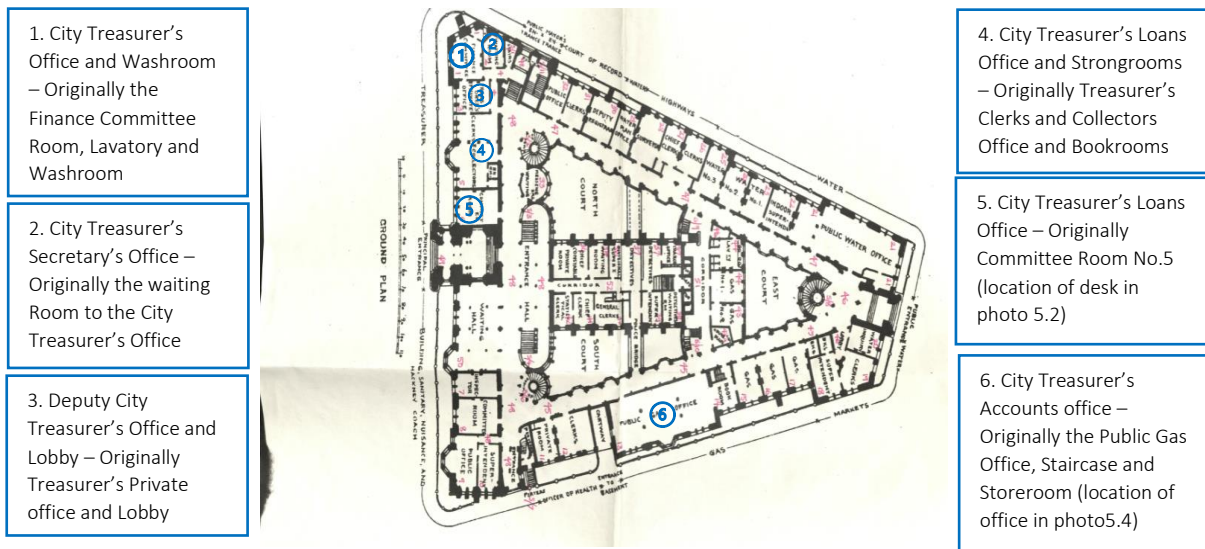


Photo 5.6 of the Town Hall's ground floor plan, 1979-80



As shown in the plans above, the Treasury expanded its offices to include an 80x35 ft office (see marker 6 in photo 5.6) on the opposite side of the ground floor to the rest of the Treasury's offices, and a new storage area in the basement (see marker 1 in photo 5.5). During the refurbishment, offices in the Treasury were also updated with new infrastructure: old gasoliers (gas powered chandeliers) were removed; new radiators were added, and new partitions and walls set up to reshape spaces and areas of work. During this time the Treasury also reorganised the use of some of its offices, transforming a waiting room into a secretary's office (see marker 2 in photo 5.6) and transforming a committee room into the Treasurer's Loans Office (see marker 6 in photo 5.6).

The following three sections each provide a different interpretation of the desks, offices and infrastructures described above. Each section works with a different conceptualisation of 'space' to examine various ways objects are interrelated within and across spaces in the Treasury, Town Hall, and in some cases beyond. These conceptions of 'space' are not very compatible and are drawn from distinct theoretical backgrounds. The value of using these conceptions alongside each other is that they each encourage examining how objects are arranged or relations in and across space in different ways. In doing so they also place lesser or greater emphasis on examining certain aspects of objects such as their design and physical features, how they are interdependent on each other within sequences of tasks, or how they fit within wider networks and infrastructures.

## 5.2. Spaces and their objects

Gibson's (1979) notion of objects 'affordances', and Akrich's (1997) idea of object 'scripts' (discussed in chapter 2), suggest that the material and physical features of objects often direct how they are 'read' by users, arranged within spaces, and interact in practice. Both approaches suggest that a 'space' can be understood to act like a physical 'container' of objects. In the context of this chapter, affordances refer to how the physical properties of objects determine the possibilities of how an object is located in space, or how it might be moved through space. The concept of an object having a 'script' supposes that objects are intentionally designed, or 'inscribed', with specific uses and contexts in mind, which are hypothesised by their designers. The designs and physical features subsequently play a crucial role in understanding how objects are connected to each other within and across spaces (Smith and Bugni, 2006). This section examines how the affordances and scripts of different objects in the Treasury shaped and how they were arranged and used within and across office spaces.

Most of the objects displayed in the 1960-62 Treasury album are associated with the process of punch-card computation, which used machines designed to 'read' and edit punched cards to produce calculations (Bashe et al, 1985; Columbia University, 2019). These punched card machines are an example of how objects are designed, or 'inscribed', to fit into and work together. The punched cards seen on the desk in photo 5.1 are most likely to be the IBM 12-row/80-column cards (or IBM 80s), developed in 1928 and one of the most widely used and popular formats of punched cards (Cortada, 2000; Williams, 2002; Jones, 2005). Punched card machines were subsequently developed and designed with features of the IBM 80 in mind (i.e., they needed to be able to fit the IBM 80 cards into their receivers) (Driscoll, 2012). One example is the tabulator seen in photo 5.3 which resembles the IBM 407 produced between 1949 to 1976 (IBM, 2020), and which had an integrated card reader that could read 100-150 IBM 80 punched cards a minute (IBM, 1949; Bashe et al, 1985; Columbia University, 2019). Similarly, the IBM 80's development in the 1930s led to the design and use of specifically sized filing cabinets used to store punched cards (Williams, 2002), which are potentially the same cabinets seen in photo 5.3. The standardisation and interrelated features of punched cards and punched card machines suggests that they were designed with each other in mind for compatibility. This is possibly connected to the fact that the cards and the machines were developed by the same few companies such as IBM and ICT<sup>15</sup> (something which is discussed again later in this chapter) (Pugh and Heide, 2013).

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<sup>15</sup> ICT was a company local to Manchester and was potentially a major supplier of many of the computing and calculating machines used in the Town Hall between the 1960s and 1980s (Pugh and Heide, 2013).

As the designs and affordances of objects change, so too do the relations between them and how they are arranged in spaces (Gibson, 1979; Sellen and Harper, 2003). This is exemplified when comparing three different calculators shown across the desks and offices of the Treasury in 1960-62 and 1979-80:

- 1) A punched card calculator from 1960-62 (see photo 5.3), which was slightly larger than a desk and was fixed in place within the office and attached to the Town Hall electric supply by two large power cables (Coopey, 1999; Gandy, 2012, Columbia University, 2019).
- 2) A smaller programmable calculator from 1979-80 (see photo 5.4), was located on top of a desk and plugged into the electric supply. This calculator resembles the Rockwell 920 (released in 1975) which was approximately 12 inches wide, 17 inches long, and 6.25 inches tall, and weighed approximately 8.25 Kg (Tout, 2012).
- 3) An LED pocket calculator from 1979-80 (see photo 5.2). Whilst the exact model of calculator cannot be determined, it looks like a TEAL Photon (released in 1978) which was 2.6 inches wide, 5 inches long and 0.3 inches high, with a self-charging battery<sup>16</sup> (Stoll, 2004; Tout, 2007; Bensene, 2019).

The smaller size, lighter weight, and lower power demands of calculators has changed the objects' affordances (Gibson, 1979), and the requirements for their use. The largest punched card calculator required an office floor to be fixed upon, whilst the desktop calculator could be placed on a desk, and the pocket calculator was fully portable. In terms of infrastructure, the punched card calculator and desktop calculator required a direct wired connection to the electricity supply to be operational, whilst the pocket calculator was portable with an internal battery (Bashe et al, 1985). The affordances (i.e., the possibilities) of calculators have changed, becoming more mobile across spaces. The changing affordances of calculators matters not only in terms of how these calculators are located in space (i.e., on an office floor or desk, and tied to infrastructure), but also their relations (and dependencies) to other objects. This is suggested by the absence of punched cards (or other punched card machines) by 1979-80, as handheld, micro-chip based, calculators no longer required them to carry out their functions.

This section shares similar themes and findings with chapter 4, using the same concepts of 'affordances' and 'scripts' to focus on how the material and physical aspects of objects influence their relations to each other across desks, offices and broader Town Hall infrastructures. The following section moves the analytical focus away from examining how objects are arranged and related across

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<sup>16</sup> The decreasing size, weight, and power requirements of calculators over time is partially due to the replacing of transistor and vacuum tubes (used by the punched card calculator) with smaller and more power efficient microprocessors, which began in the 1960s (Hamrick, 1996; Haigh, 2011), and as microprocessors and circuitry got smaller so too did calculators (Valery, 1975; Flamm, 1998).

space via their physical features and properties, and towards considering the ways in which objects become interdependent on each other as part of organised systems of tasks and interactions. This move reflects some of the less direct and visible ways in which objects are related across space and highlights that objects can be connected through their interdependent roles in office tasks.

### **5.3. Junctions and interactions**

De Wit et al's (2000) conceptualisation of space as an 'innovation junction', by contrast to the previous approach, focuses on interactions between objects in action and in use, and the ways in which heterogenous objects come to depend on each other. They argue that when objects co-exist within the same setting (i.e., within an office) and are part of the same broad category of office work (i.e. accounting or calculating practices), they constitute distinctive sites and opportunities for innovation. Within these spaces, objects intersect and interact as part of organised sequences of tasks, forming systems in which objects are interdependent on each other across space. As such, De Wit et al's approach encourages revisiting and investigating the implicit sequences and interactions of objects as within organised workflows. This section compares the apparently linear, and often highly interdependent, sequence of work activities that were integrated into and located around various punch card machines in 1960-62, to the more flexible and less sequential work which was reflected in the spread of calculators and computers in 1979-80.

A key aspect of De Wit et al's argument was that *"Since all [technologies] were used in the same location and for more or less interconnected tasks, they had to be geared to each other to an increasing extent and so became, in various ways, more and more interdependent."* (De Wit et al, 2002; p.54). This interdependency between heterogenous objects can be seen in the punch card machines which were used across the Treasury during the 1960s.

The major tabulator and punch card calculator (shown in photos 5.1 and 5.2 respectively) both worked within an intricate and specialised punch card system that played a role in organising the accounting activities in the Treasury. The 1960-62 Treasury album annotations described the roles and uses of over a dozen different punched card machines, and highlighted how inter-dependent these different objects were, even as they were spread across different offices in the Treasury. This inter-dependency is potentially a product of how the machines were organised and used in a relatively strict and linear sequence. To visually map and display this intricate system and portray the possible ways these punched card machines interacted across different spaces, an approximate representation was developed using the annotations from the 1960-62 Treasury album, alongside other studies of punch card machinery (Yates, 1993; Booth, 2004; Wahl, 2018). Based on these annotated descriptions, diagram 5.1 shows how the punched cards might have been arranged and



related across the Treasury. From a comparison of the many photos used in the 1960-62 Treasury album, the collection of different punched card machinery were spread and arranged across at least six separate offices (labelled A-F in the diagram), though where these offices were located in relation to each other is unknown.

*Diagram 5.1 representing the possible sequencing of objects, and movement of punched cards, across the Treasury in 1960-62.*

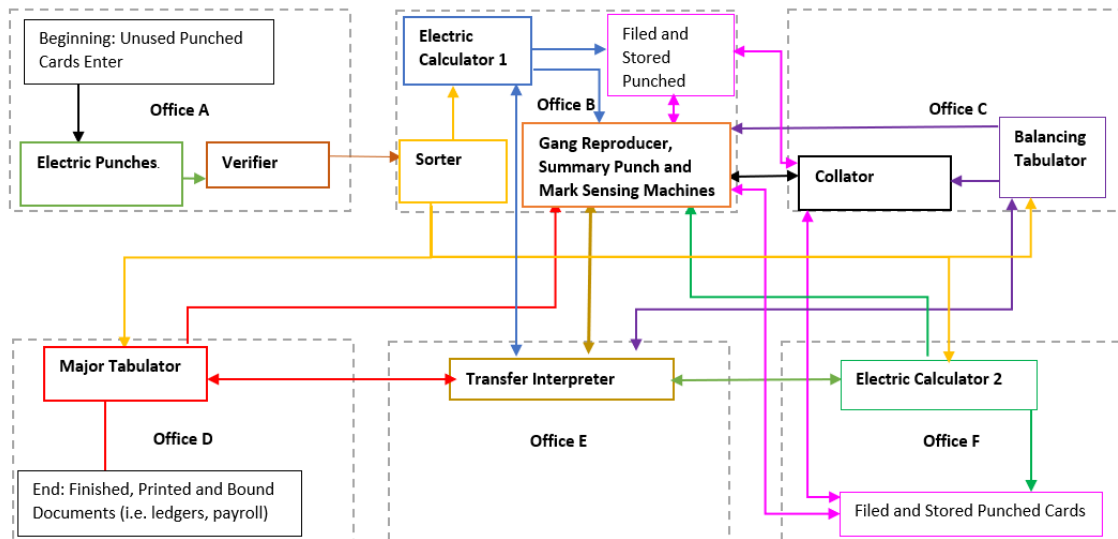


Diagram 5.1 shows how the use of one punched machine (and their associated tasks) feed into the next, in an almost assembly line fashion. This began with programming punched cards<sup>17</sup> via electric punches and verifiers (Hirschheim and Klein, 2011; Bonin, 2004; Kee, 1993), before being filtered through electric sorters, edited by transfer interpreters, and then sent to either tabulators or calculators which processed the data and produce printed documents (Lubar, 1992; University of Auckland, 2012).

The 1960-62 Treasury album indicated that these punch card machines (such as the tabulator from photo 5.1 and the calculator from photo 5.2) were spread across different rooms. However, despite not being physically connected to each other and being separated across different rooms in the Treasury, these various punch card machines shared interdependent forms of relations. For example, the annotations for the tabulators and electric calculators suggest that they were dependent on electric punches and verifiers to ‘program’ punched cards, which they would eventually analyse and draw calculations from. These interdependent relations between the punched card machines are less visible and overt than the more direct interactions between objects discussed in the section 5.2. They

<sup>17</sup> Whilst programming punched cards could happen offsite by punched card producers such as IBM, the presence of electric card punchers in the Town Hall in 1960-62 suggests at least some cards were programmed within the Treasury during this time (Fisk, 2005; Driscoll, 2012).

have been made visible by adopting De Wit et al's (2002) approach of treating office 'spaces' as being comprised of interactions between objects and people.

Diagram 5.1 also illustrated how punched cards themselves were moved and flowed throughout the Treasury, as they went from machine to machine being punched, collated, verified, and used in calculation. De Wit et al, during their study of Dutch offices between 1880-1980, similarly found that *"punched cards and tapes developed into media for transferring data between different office technologies. As a result, office technology increasingly came to mean a chain of stand-alone devices integrated by means of punched cards and punched tapes."* (De Wit et al, 2002; p.65). In other words, one of the ways in which the many heterogeneous punch card machines were indirectly related and connected across the Treasury's office spaces was through their shared relationship to punched cards. Sellen and Harper (2003) describe a similar process in offices from the early 2000s, explaining that paper served as a flexible and adaptable 'carrier', fitting into and linking a variety of different practices. However, punched cards (as discussed in this chapter) differ from the forms of paper discussed by Harper and Sellen. They are integrated with, and inseparable from, the punched card machines that they were moved between and are not optional in this highly structured sequence of objects and activities. This is another illustration of how the various objects that constitute the punch card system were interdependent on each other.

If one punch card machines like the electric puncher were to stop working or malfunction, then other machines like the tabulators could not be used to carry out their roles. The punch card system constituted a highly specialised and interdependent organisation of machines. The shift away from punched card objects and towards smaller calculator and computing objects by 1979-80 has led to objects becoming less dependent on each other to complete complex activities across spaces in the Treasury (Yates, 1989; Wootton and Wolk, 2000). At the same time, these different objects appear to be merging in terms of their roles and functions in calculating and processing practices, with fewer devices internalising multiple tasks. By 1979-80 the sequential and assembly line system of punched cards has disappeared from the desks and offices of the Treasury and been replaced by an array of smaller devices like pocket calculators, telephones, computers, franking machines, and typewriters. According to other authors (Norberg, 1990; Coopey, 1999; Booth, 2004; Driscoll, 2012), these changes are in part due to the development and increasing affordability of microprocessors and hard drives (for computing) from the mid-1960s onwards. One explanation for this weakening dependency between objects in the Treasury is that there are less specialised machines in the Treasury. De Wit et al (2002) noted that *"The computer assumed the functions of several other machines and office technologies, and data transfer between computers and other devices became far less important."* (De Wit et al, 2002; p.69). In other words, objects like computers and pocket calculators could be used

more independently than the punch card machines that previously performed the same roles in the Treasury a few decades earlier. Computers appear to have consolidated previously separate activities, once divided among many different objects, and in the process have come to be the central office object both with respect to the relationships between objects in the Treasury office spaces and in terms of accounting work practices.

This convergence of work activities has been matched by some forms of dissipation or decentralisation, in how the infrastructure of the Treasury has changed by the time of the 1979-80 refurbishment album. The increasing presence of telephones on desks in the Treasury (especially when compared to the desks seen in the photos 5.1 and 5.3 from 1969-62) indicates an expansion or new forms of communication not only across the Treasury but across the Town Hall. This may also suggest a 'loosening' of the Treasury's spaces and other work activities, with an increased need for cross-office or cross-department communication, and more flexibility as to where objects are located and used in office work. Through developing infrastructure, especially via telephone lines and forms of electronic communication, objects in the treasury are being interconnected across more extensive networks, which is explored further in the next section.

#### **5.4. Extended spatial relations**

Gibson (1979), Akrich (1997) and De Wit et al (2002), to different extents, conceptualise space as a somewhat bounded entity, as containers or junctions within which relations and interactions between objects and people exist. However, the discussions above have hinted that objects exist across more extensive networks of relations that go beyond the Treasury, Town Hall or even the UK.

Massey (2005) provides a very different conceptualisation of 'space' which defines spaces as borderless and constantly shifting 'sites' of more extended interactions. As discussed in chapter 2, her conceptualisation of space is set out in three propositions. Collectively, these three propositions suggest that the distance between things is not particularly relevant for understanding the relations between objects, and indeed the distance between objects doesn't stop them from having relations (Massey, 1994, 2005). Using Massey's propositions of spaces allows for the investigation of how objects found in and around the Treasury's desks, offices and infrastructures are nested within national or even global networks of relations. This section focuses on examining these more extended relations between objects, and how they figure in wider processes of change.

One of the ways objects in the Treasury are related across more extensive networks beyond the Town Hall is through various forms of infrastructure that extend throughout the Town Hall such as the telephone wiring and electricity supply. These forms of infrastructure that do not end at the Town

Hall, but extend beyond it, turning the Town hall into one node in a much larger network of city and national infrastructures like the national telephone network. The telephone in photo 5.2, whilst situated within a single room in the Treasury, is also connected, directly via its wiring, through sockets and walls to other telephones on other desks either in the same office, or across different offices in the Treasury, and throughout the Town Hall. Through this same infrastructure of telephone wires, the telephone on desk B is then stretching even further, beyond the Town Hall, and connecting to national and even international networks of telephones, facilitating even more disparate communications. From this point of view, the telephones in the Treasury represent individual 'nodes' or points within wider telecommunication networks, that extend beyond the boundaries of the Treasury or Town Hall across national and international infrastructures. Individual objects such as telephones (or even computers) are connected to other objects spread across much wider spatial settings through their positions within these infrastructures.

Telephones in the Town Hall are also part of networks of relations anchored around the organisations and institutions that monitor or maintain them, such as through renting and warranties. In 1979-80 the telephones in the Treasury, and most likely all telephones in the Town Hall, were rented from the General Post Office (GPO) which held a state-supported monopoly over telecommunications across the UK until its privatisation in 1981 (Argyle, 2013). The GPO had the responsibility of laying down and maintaining telecommunication infrastructure across the country, including installing and maintaining telephone wiring and sockets inside buildings (Woods and Woods, 2008; TelephonesUK, 2018). This also involved repairing and maintaining the individual telephones that were rented to individuals, companies, or governmental institutions like the Town Hall (Daunton, 2015). The GPO then is responsible for maintaining the infrastructure which individual telephones depend upon, and through which they interact and network across spaces at local, national, and international scales. Telephones in the Treasury are subsequently part of their own network of relations anchored around being rented from, and the responsibility of, the GPO. This type of relationship between telephones is spread across the UK in an indirect and nearly invisible way and examining this type of relationship between objects was made possible by considering space as being a social production, and which has no borders.

Massey's flexible propositions of spaces share similarities to elements of ANT, notably Akrich, Silverstone and Haddon (1996) who argued that there is no such thing as 'technology' in and of itself. Instead, it is the wider contexts, history and situated circumstances in a period which allows certain technologies to emerge. Objects such as the punched cards or the telephones embody histories of design and production that predate and/or are not directly related to their arrival in the Town Hall. Objects consequently bring with them a form of 'baggage' from their designers who, by designing the

objects, play a part in shaping the ways in which they are used in practice. The various punched card machines in the Treasury in 1960-62<sup>18</sup> are good examples, as they share interconnecting design features such as being able to fit and read the same size and type of punched cards (Lubar, 1992; Wahl, 2018). In this case, the designers of punched card machines have made and reproduced standardised features across different punched card machines, allowing versions from different producers to 'work' with each other. These design choices, in turn, shape how these objects are used within local contexts such as within the Town Hall Treasury. This is another example of how relations between objects can take place at multiple scales of space, from intimate networks contained within local offices and desks, to more distant actor-networks where space is a site of interactions and influences between actors and designers taking place across the globe.

### **5.5. Conclusion: Object relations in space and over time**

This chapter has described how objects were organised across the desks, offices, and infrastructure of the Town Hall's Treasury department in 1960-62 and in 1979-80. To examine different ways objects relate within and across spaces, this chapter moved between three different approaches, each with their own conceptualisation of 'space. This included considering space as: static and physical 'containers' of objects; a 'junction' within which objects co-exist and interact with each other; and as a 'site' of more flexible and extended networks.

These three approaches each reveal different layers of spatial relations between objects, and together add up to highlight the co-existence of multiple more and less visible forms of relations that objects may have across space. Certain objects, for example the large electronic punched card calculator, have features and properties that literally anchor them to a certain location, and to a specific activities or roles within more extensive work processes. Small calculators by comparison, being more portable and less dependent on power and other materials such as punched cards, instead have potentially more flexible and 'looser' relations to other objects. However, it is not only these observable or visible parameters that matter. Some objects relations (such as that between the telephone, the GPO, and a network of other telephones) are much more extended, whilst others (such as the link between a product designers' 'inscription', and its localised enactment in the Town Hall and Treasury) are invisible to the naked eye but nonetheless real in their effects.

This chapter argues that individual objects, even ones that seem isolated on an office desk, likely exist within multiple layers of relations that extend across various scales of space. These relations are themselves interconnected, meaning that different forms of object relations inform and shape each

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<sup>18</sup> Which was likely designed by either the International Business Machines (IBM) or International Computers and Tabulators (ICT), two of the main producers of punched card and computing technologies in the UK from the 1930s into the 1970s (Cortada, 2000; Driscoll, 2012).

other. For example, the extended relation between punched cards and their designers and producers is reflected and to an extent relayed via other more local arrangements and interactions with other objects in the Treasury. Punched card systems 'carry' their extended relations (e.g., their designers' 'inscriptions'; connection to other products of their manufacturers, and to wider forms of market-based standardisation) into existing organisations of work activities. The physical, organisational, and extended relations of punched cards intertwine and shape each other.

Examining what objects 'come and go' from the Treasury, and how the organisation of its objects has changed between 1960-62 and 1979-80, has also emphasised that the Town Hall is an office building that houses many converging narratives of objects. These objects intersect in different periods of time, with relations that potentially extend across the globe, and examining them has provided glimpses into the broader shifts in office work happening in and between 1960-62 and 1979-80. The punched cards system, for example, is part of a wider history of the mechanisation of accounting activities in banking and government, in particular the automation of bookkeeping, ledgering, and document production (Wilson and Sangster, 1992; Campbell-Kelly and Aspray, 1997; Ackrill and Hannah, 2001; Booth, 2002). By 1979-80, many local government organisations and banks were engaged in the processes of integrating computers into existing accounting methods, which broadly began in the mid-1960s and through the 1970s (Booth, 2001; Campbell-Kelly, 2007; Yates, 1999). The increasing diversity of office devices is part of a growing industry and market for micro-chip based electronic products, including computers and pocket calculators beginning in the late 1960s and early 1970s (Beattie and Rahenkamp, 1981; Wilson and Sangster, 1992; Flamm, 1998, Yates, 1999; Ceruzzi and Paul, 2003).

The approaches used in this chapter, in particular Massey's propositions of space, also resonate with similar ideas worked with in other chapters in this thesis. Massey's second and third proposition focuses on the idea that objects (and the ways they interrelate to define spaces) exist in states of flux and plurality, in which multiple distinct interpretations and understandings of them co-exist. This understanding of how relations between objects, and how they play a role in defining and constructing 'spaces', emphasises that there is no singular interpretation of objects. This links to a similar concept that objects and technologies are 'multistable' do not unfold in one context in a singular way, and instead unfold and emerge in multiple ways (Ihde, 2002), which the next chapter will explore more prominently.

## Chapter 6: Appropriating email into administrative practices and existing object relations

Objects often relate (or are connected) when used together by people in the performance of practices, for example in the case of both internal and external office communication. In an office context, communication practices take many forms and through their performance enrol a diverse range of heterogeneous objects. Between 1960 and 2010, particularly prominent forms of communication in the Town Hall were faxing, mailing, telephoning and emailing. These objects were appropriated into the performance of office communication practices at different times. The introduction of email into UK office work, which broadly took place during the 1990s and 2000s, is often regarded as being important in reshaping both administrative practices and the sets of objects within office spaces, because it captures a shift from paper and telephonic to digital communications. This chapter focuses on the emergence of email and its appropriation into office communication practices as experienced by Town Hall staff.

Previous studies, such as Lloyd (2000), Fleishman (2012), McCracken (2014), Reisinger (2016), and Turville (2019) illustrate that email has had a significant impact on the ways in which people communicate and organise, send and store information, and write and draft documents. Email has also been defined differently across these studies, such as being 'software' or a 'technology', primarily because email intersects with (and in some cases is installed within) multiple other objects (i.e., computers, printers, filing cabinets etc.) (Silverstone and Haddon, 1996). In the context of this thesis, email is discussed as an 'object'. Even though email is software and not a physical thing like a typewriter, it can be individually owned and accessed by Town Hall staff through personal accounts (which they were individually responsible for), much like they had their own typewriters. Software such as email, does not have to be physical or material for people to feel a sense of ownership, responsibility, and personalisation towards it. With this definition in place, this chapter captures some of the experiences of Town Hall staff with 'their personal email' as they learned to use it as part of their everyday office work between 1960 and 2010.

This chapter primarily draws upon ideas from theories of practice (see chapter 2). Theories of practice, specifically Shove, Pantzar and Watson (2012), emphasise that objects (and other materials) are constitutional elements of social practices alongside the meanings and understandings, and the skills and knowledge needed to perform any given practice. An implication of this conceptualisation is that the introduction of 'new' objects will change practices. The roles and relations of objects (like email) are not fixed but relational, and the same objects can be understood and used differently from one practice to the next (Shove, 2016). This is especially the case as 'new' objects emerge which

compete and potentially replace others in certain roles as they are appropriated into existing practices (Yli-Kauhaluoma, Pantzar and Toyoki, 2013). The term ‘appropriation’, in the context of this thesis, refers to the process by which any objects is first ‘introduced’ and then normalised and enrolled into potentially multiple practices within a given context, such as the Town Hall’s offices. This includes how different people learned to use the object, the rules, etiquettes and norms that people developed over time, and the types of relations that form between these ‘new’ objects and other established objects.

The chapter presents and examines the different (and often ambivalent) experiences and narratives as told by different Town Hall staff who had to adapt, improvise and learn to use email as part of their everyday office practices. Empirical data collection and analysis for this chapter primarily consisted of interviews with eight Town Hall staff who worked in different departments between 1960 and 2010 (see chapter 3 for full discussion). Figure 6.1 provides a summary of the interviewees.

*Figure 6.1 summarising the careers of interviewees in the Manchester Town Hall and City Council*

| <b>Interviewee (Pseudonyms)</b> | <b>Summary of interviewee careers</b>  |
|---------------------------------|--|
| <b>Mary</b>                     | Mary started in the Town Hall in 1983 as an office junior in the Treasury Department, before studying to become an accountant by the 1990s, moving across several different teams in the Accountancy Department during the 1990s.  |
| <b>Erica</b>                    | Erica started work in the Town Hall in 1987 and worked as an administrator in the Architects Department. During the early 1990s she moved to the Computer Assisted Design suite, helping to draw up plans on a computer and carry out administrative tasks. During the late 1990s she moved to the Property Review Team in a separate building to the Town Hall, in which she assessed the feasibility of designs and plans.                                   |
| <b>Yvonne</b>                   | Yvonne started in the Town Hall as a community organiser in 1997 helping to promote the roles of women and awareness of domestic violence and prostitution. She later moved to the Best Value Team in 2000, which was a government initiative to review their services to determine their cost efficiency (becoming team leader in 2001). In 2003 she moved to head a team in the Adult Social Care services which developed policy, staying there until 2011. |
| <b>Regina</b>                   | Regina worked in the Town Hall for 43 years (1965-2008) in various posts including the Education Department and the Chief Executives. During the early 1990s she worked developing Transport policy, before moving in 1997 to the Voluntary Sector Policy and Grants team as its head (it would later be renamed to the third sector team), in which she developed social policy and engaged with community issues.  |
| <b>Haley</b>                    | Haley began her work in the Town Hall in an on-and-off temporary position in 1997 as a community manager, organising and coordinating with other organisations. She began full-time work at the Town Hall as a digital communications manager in 2003.   |
| <b>Sharon</b>                   | Sharon started work in the Town Hall in 1982 and mostly worked in the Treasury Department, in which she carried out budgeting and accounting services for chief  |



|               |  |
|---------------|--|
|               | executives and managers. In 1998 she moved to the library to help manage their finance books.  |
| <b>Chris</b>  | Chris started working in the Economic Development Department in the Town Hall in 1987, brought in to provide expertise on developing creative industries. He became interested in the emergence of electronic communication, and their potential economic impact. Chris subsequently worked helping to establish the Manchester Host in partnership with the City Council, which was one of the first municipal computer networks in the UK which helped to foster online communications services for public and private sector organisations. |
| <b>Arthur</b> | Arthur founded a London-based software house in the 1980s, which worked with various cooperatives and universities to study and develop emerging digital technologies such as networks, video texts and email. He helped to develop Poptel in 1986, one of the UK's first online and email service providers, before working on the development of the Manchester Host (the Manchester City Council's first intranet network) which would become active in 1991, which he continued to work with until the early 2000s.                        |

Data analysis revealed four themes. First, that various Town Hall staff narrated tensions in how email influenced the ways they performed communication practices as part of their administrative work. Second, to navigate these emerging tensions, Town Hall staff developed improvised procedures and rules to help them manage their use of email in their work, resulting in email being situated within multiple sets of object relations. Third, email played a part in a shift during the 1990s from specialised relations between specific objects and practices towards more generalised relations between objects and practices. Finally, when, and how email or other forms of communication would be used in office practices were anchored in previously established expectations and norms of Town Hall communications practices. As a result, this chapter identifies many narratives of how email was experienced and adopted into Town Hall office work, some of which appear to contrast or contradict each other.

This chapter argues that the appropriation of objects (like email) into practices, and the relations they develop with other objects through practices, emerges in multiple ways. This is consistent with the post-phenomenological concept that objects are multistable in nature, meaning that they appear *“differently to different people and taken up in different ways”* (Turville, 2019: p.4; see also Ihde, 1990; Wellner, 2016). In other words, the relations and histories of objects are similarly multistable, with objects forming various co-existing (and not necessarily coherent) sets of relations-based on the specific ways they are appropriated into practices. In conclusion, it is argued that this conceptualisation of objects (and their relations and histories) as being multistable could be useful for museums when attempting to use objects to represent multiple co-existing historical narratives from different perspectives.

## 6.1. Helping and hindering: the multiple narratives of email in the Town Hall

A reoccurring theme that emerged from the interviews were discussions about whether communicating via email made administrative work in the Town Hall more or less difficult. This section examines experiences of how email was taken up, understood, and experienced as part of internal and external communication practices in the Town hall. Tensions emerged across the narratives of each interview with email being diversely described. These narratives ranged from email being helpful in carrying out quicker and more efficient communication, to creating new forms of work managing both miscommunications and the rising volume of daily emails.

Briefly and broadly speaking, the first email software used widely across the Town Hall was Lotus Notes which was released in 1989. It began as a digital management system which included a variety of features such as file management and eventually email. Lotus Notes went through several versions during the 1990s and early 2000s, with new features being added over time such as attaching documents (in 1992), sorting and filtering emails (in 1993), and calendaring and scheduling (in 1996) (Lotus Notes Timeline, 2013; Constellation Research, 2015; ThinkAutomation, 2020). During the early years of the 1990s emailing was mostly restricting to internal communications, partly due to email not being extensively used by other organisations during this time, but also because many email programs were not compatible with each other for sending messages. This was discussed by Arthur during his account of the challenges of using email as part of professional work:

*“There were many different email standards, in particular different email addressing protocols for example...There were rival standards for electronic mail addressing such as X 400 which was backed by the International Standards Organisation and the European Commission”*

As Lotus Notes gained popularity in the Town Hall, some of the interviewees began to use email as part of their everyday work. Tensions emerged across the interviewee’s narratives regarding whether it was ‘efficient’ and the extent to which it helped or hindered the performance of their respective jobs in the Town hall during the early 1990s. Yvonne, Mary, Regina, and Sharon discussed in particular detail how email, to varying degrees, made communication faster and more convenient, whilst also creating new problems and tasks to which they had to adapt. Yvonne for example described both how email saved time and created more work. On one hand, Yvonne’s email allowed her to quickly communicate with her boss helped her save time:

*“It was a lot quicker. You didn't have to run around the town hall trying to find them. You could email them; you didn't have to write them and get a memo typed up.... You could do that on the*

*phone, but not everybody's in all the time.... It just made things a lot a lot quicker and sped up how fast you could do things and how fast you could make decisions”*

At the same time, Yvonne explained that emailing her boss also created new problems for her work:

*“It could be quite frustrating because I would send her an email asking a specific question. And she come back with a whole load of information, but not answering the specific question. So, we'd have to go back and ask the question again. And it was that kind of to-ing and fro-ing”*

For Yvonne, whilst email sped-up actual message sending and with the potential for a quick response to work-related questions, it also created unexpected issues of potential miscommunication that led to new challenges in her work.

Similar narrative tensions emerged during discussions of using email for external communications. Yvonne, for example argued that as email became the norm, she moved away from using mail to communicate and coordinate events with groups of community organisations. She argued that as email was appropriated into more organisations, it became more convenient and streamlined to use compared to the mailroom:

*“as more email technology was rolled out and more organizations got the technology, the whole photocopying thing, the whole waiting to write letters out thing all went out the window. We didn't do it anymore. So, it made my life an awful lot easier.... And it was just one of those things that it quickly caught on. Because it was so easy to do. And it just became a norm very, very quickly for me.”*

In contrast, Mary noted that the ability (and subsequent trend) to ‘cc in anyone’ with even a remote interest or relevance to the email topic, led to an increase volume of emails being received by staff:

*“people would start sending everybody all the 'copies in the world'.... once people started copying people, people copied everybody for everything.... it fills up your inbox. I think as time moved on; it ended up that emails took up more of your time... my whole job is now pretty much only emails unless I am doing a document.”*

For Mary and her work, the trend of ‘copying everybody for everything’ slowly led to a new (and unforeseen) volume of work which slowly changed what her job entailed, which she described *“as a different type of volume. It's more high volume of emails rather than high volume of transactional stuff.”* (Mary). This new volume of work was experienced by other Town Hall staff in other departments, creating job tensions and forcing staff to develop new skills in managing their own correspondence. Regina, for example, discussed why she thinks the volume of emailing increased:

*“It was so easy for people to send you copies of emails and attach reports or whatever, on the slightest chance that you might be interested or might be able to contribute something. It meant you got, it must have been, like, 100 a day”*

Sharon also grew frustrated in her work as the volume of emails she received became increasingly difficult to manage and respond to, saying that: *“It was ridiculous. And the thing is that, because I do support systems, I had to make sure I’m keeping on board with where things are being developed.....and you’re bombarded with emails you know”*. She went on to explain that the new volume of communications left her feeling stressed: *“I can go off on a couple of days off, and I can come into 100 emails.... I’ll be honest with you, sometimes it can make you feel quite stressed”* (Sharon). When asked how she dealt with this stress and the volume of emails she received, Sharon explained that she needed to develop new skills prioritising her communications:

*“it’s all about priorities. There’s some basic skills and competencies that you kind of develop through your career.... you’ve got to know the urgency of some things, but you also know that sometimes something can come up that trumps what you’re working on anyway.... So, it’s just really just all about the organizational skills. And I had to improve that because of email, because of the sheer volume of them”*

As email was appropriated and the tensions between the speed and volume of emails intensified, some Town Hall staff (like Sharon) improvised by developing new skills and competencies (a theme further discussed in the next section).

This section shows that even among a few individual Town Hall staff interviewed, multiple divergent narratives of email co-existed during the early 1990s. None of the interviewees disagreed that email reshaped the ways they performed internal and external communications, but their experiences and feelings towards these changes varied. Email then, embodied a variety of meanings for different people, reflecting the idea that objects like email are ‘multistable’, which was both a help and a hindrance from different points of view.

## **6.2. Improvised procedures and rules for storing and recording email**

As highlighted by interviewees, the appropriation of email disrupted established communications practices in the Town Hall, leading staff to improvise their own procedures for performing office practices. This section examines further some of the improvised procedures and rules for storing and recording of emails (and emailed documents) that emerged in the Town hall during the 1990s and early 2000s. During this time, email is shown to have existed in various sets of relations with different

objects depending on the specific procedures and rules that different staff adhered to when using email.

When helping to install and set up the Town Hall's email network during the 1990s, Chris noted that the use of email *"was self-policed for the first four or five years"*. By the phrase 'self-policed', Chris was referring to how the Town Hall staff took up email in their own ways and developed their own rules and procedures for using email. Yvonne provided an example when reflecting on Town Hall guidelines for storing communications in the 1990s, which did not specifically discuss email: *"there were policies, but they were written in our HR language.... their policies hadn't kept up with the technology. So, they were a bit old hat and more to do with written correspondence than email correspondence"*.

Staff across the Town Hall improvised and adapted their own separate sets of procedures and rules for how to use email. Yvonne, Regina, Erica, and Mary, who worked in different departments in the Town Hall around 1995, each described different understandings for the procedures of recording and storing email during this period. They also described how email became part of different sets of relations with other objects depending on how those emails were being stored and recorded. Yvonne, for example, discussed how she kept and organised her digital computer records of certain correspondence between herself and others voluntary organisations: *"I had files where we would drop things into so whatever file with the name of the voluntary organization or particular event"*. However, at the same time, when asked if she kept physical copies of her email correspondence, she responded *"No, not really."* In Yvonne's case, her understanding of the procedures and rules led to her email being stored on computers but not physically in filing cabinets or folders.

In Regina's case, she mostly printed off and kept hard copies of select emails and emailed documents for her own use (filing them away in cabinets), despite no requirement to do so: *"I was a bit of a one for keeping hard copies. For my own sort of use, that was a real reason to do that. Not of all emails though. But I would keep hard copies of important reports and things. But there was no real need to do that from what I understood from colleagues."* Compared, with Yvonne, Regina's email was located within a different set of object relations (with printers, paper, folders, cabinets etc.) by being printed off and physically stored and recorded.

Erica and her colleagues relied on the email network to record correspondence, instead of directly storing or recording emails in physical or digital folders on their computers: *"We were using network drives at the time. So, anything that did come in if it did come in...I can guarantee you, they all went to the network drive and nowhere else....I think you could create folders to put things in, but I'm not quite sure we ever did"*. Again, Erica describes a different set of relations within which her email was

located, in this case stored and recorded in a network drive that connects to computers across her department and possibly beyond.

Mary described engaging with a mix of the other procedures discussed by Yvonne, Regina, and Erica. She used an archiving tool to store and record her emails in digital folders on her computer, and (like Yvonne) described how: *“I’ve archived emails and using the proper archiving tool and I also store my emails in folders, and then delete things emails as I went as well.”* Mary would, however, also print off and store select emails as hard copies, much like Regina did: *“Oh, I think we printed them off as well and stored them as files. Yeah, depending on what it was if it was an approval to something”* (Mary). Mary also described using shared network drives for storing emails, using similar terms as Regina, so that other colleagues might share access to them: *“And then we also have network folders that we might download things to and save them into the network as well. The network would have been there probably in the 90s”*.

Yvonne, Regina, Erica, and Mary illustrate four different (but broadly co-existing) ways in which email was used as part of recording and storing practices in the Town Hall, corresponding to how each interviewee improvised the management of their respective emails. Mary’s account emphasised how email can be simultaneously situated within a variety of relations with separate groups of objects depending on whether email was used as part of digital computer filing, printed and physical filing, or archiving via shared network hard drives. This section shows another side to the ‘multistability’ of email, and each of the experiences above represents variations of how email was taken up in storage and recording practices, in which different sets of object relations and practice performances were informed by different sets of improvised procedures and rules.

### **6.3. The merging responsibilities, expectations, and skills of administrative and professional practices**

The third theme that emerged from the interviews was that email played a part in the wider reshaping of the responsibilities, expectations and required skills of different jobs across the Town Hall. This section discusses the merging of professional and administrative roles and responsibilities of staff, particularly in the case of writing/document drafting practices. It shows that during the 1990s staff were increasingly expected to be more multi-skilled in their work (as opposed to specialised) and required to learn new communication practice techniques.

Yvonne, Regina, Chris, Mary, and Sharon noted that prior to email the practices of drafting documents (via the typing pool) and then mailing them was time consuming, especially when changes needed to

be made. Yvonne, discussed the lengths she would need to go to get a document re-typed by the typing pool:

*"I'd write it then go to the typing pool and get them to type it for me. And it was laborious, incredibly laborious.... it was typewritten. So, every time she made any changes, or amendments, I had to go and run the gauntlet at the typing pool to get them to retype it."*

Regina likewise described the process of drafting documents or correspondence as taking a lot of coordination between the typing pool, mailing offices and office juniors:

*"we had office juniors at that stage, so they would literally physically take them in wicker baskets, twice a day to the typing pool .... who would then type your letter, send it back to you for checking and obviously if it was okay, you would keep it and sign it and send it out. If it was not okay, I had to go back for alterations. And that was a huge task before word processing came along"*

Yvonne and Regina both suggest that the process of appropriating email into the Town Hall involved the bringing together of previously specialised practices (typing/drafting documents and then mailing/sending them) and two different places of work (typing pools and mailing rooms). This led to shifting responsibilities and expectations of staff in the Town Hall's administrative work, with Chris arguing that during the mid-1990s there was an important change in the division of labour in offices between (what he classified as) professional and administrative staff:

*"You once had a complete division of labour between professional staff and administrative staff. That blended and you had both professional staff who did most of their administration themselves, and then you had administrative people who were moving into policy areas, because their administrative ability made them almost if not better than some professional staff."*

Staff in the Town Hall subsequently experienced various shifts in the expectations of their jobs, particularly with respect to encouragement to be more 'self-sufficient' and multi-skilled in their office practices. Sharon provided an example:

*"as our careers evolved, and we stopped having typing pools, and we have emails and we've all got computers, we've all become a typist, a printer. We've had to become all of those kinds of things, a bit of an administrator... I think as times have evolved, we've lost more without having teams to do some of these things, and it's kind of become an add-on to our job. And the answer was to become more self-sufficient."*

Similarly, Mary discussed how the increased use of email in her work meant that she (and other managers) had to individually take on more administrative tasks and responsibilities:

*“They stopped having juniors because we didn't have as much admin. So, all that type of work has gone up to the managers now.... No more lower-level graded people to do all that kind of stuff anymore. So it now ends up being the managers placing orders for things and approving small things.”*

This merging of previously separate sets of responsibilities and expectations between professional and administrative roles in the Town Hall is partially due to email (and computers) consolidating the functions of multiple objects (typewriters and mail etc.). The relations and roles of these objects in administrative practices, like writing, started to become more generalised, mirroring a similar (and possibly interlinked) shift in the Town Hall from specialised to generalised office jobs.

A consequence of this shift was that Town Hall staff in existing positions needed to adapt to the changing expectations of their jobs and learn or improve previously unnecessary skills, including typing. Sharon argued that this led to staff like herself feeling out of experience: *“Sometimes I thought ‘I wasn't bloody trained. I wasn't trained up to be a blooming typist’ you know... where before I could just, you know, get someone at the pool to type it.”* This experience of struggling to learn keyboard and typing skills, which were becoming increasingly generalised and essential to Town Hall office work in the 1990s, was also felt by Mary and Regina. Mary was never taught any typing skills before the 1990s, as it wasn't required or expected in her work: *“None of us really were brought up in an age where we typed. Okay, so you used like, used mainframe systems, so you probably knew about your keypad and your numbers, but you weren't really typing high volumes of words.”* Regina was also not taught typing skills, and subsequently struggled with learning how to professionally format the document she was typing:

*“We never were taught typing so nobody really could type. We all just had to learn how to do that and do it really quickly....and formatting. One of my worst things was, I could write reams of words, but I wasn't very good at putting them into paragraphs with numbering and spacing. I never learnt how to do that. And I don't think I ever got very good at that.”*

This suggests certain skills (notably writing, formatting, keyboard skills) went from somewhat specialised and required in select types of staff, to becoming more generalised and universally required in the Town Hall.

Some jobs in the Town Hall (which represented specific sets of specialised skills, responsibilities, and skills with particular objects) subsequently started to appear redundant. Yvonne observed that during the late 1990s, typists were feeling anxious about their jobs as computers and email became more widely used in lieu of typewriters (in particular for writing correspondence): *“I suspect at the time thinking back on it, everybody who's in the typing pool was probably feeling quite at risk, because their*



*skills that they built up... all that kind of stuff would just was just now gone. They weren't needed."*

Similarly affected were the roles of mail and mailing, with Chris observing that email's appropriation into the Town Hall did lead to shifts in employment: *"Once people began to see what it could do, there was a big shift. Although it did cause unemployment, I think 30 post room staff had to be redeployed over a few years, but in a staff of 30,000, that's well, manageable."* Both cases illustrate that the roles of objects (typewriters, mail, franking machines etc.) were tied to the responsibilities, expectations and required skills of certain types of jobs (typists, post staff etc.) and to specific places of work (typing pools and mailrooms). These interlinked aspects of office practices were reshaped by the shift from specialised to more generalised administrative practice, brought about in part by the appropriation of email (alongside computers).

The appropriation of email into the Town Hall was, at least partially, involved in the wider merging of previously separated roles of administrative jobs in the Town Hall in the 1990s. This involved a general shift from specialised relations between specific objects and practices (i.e., using a typewriter to write letters, and franking machines and envelopes to mail them) towards more generalised relations between objects and practices (i.e. using a computer with email to write and send letters). This likewise pushed Town Hall staff to become increasingly multi-skilled in their work and to develop their typing and keyboard skills to adapt to the changing expectations of their jobs. Alongside these changing object relations, new expectations and sense of competency developed across different types of jobs, including a shift in the required skills of Town Hall staff (most notably a more generalised expectation in typing and keyboard skills).

#### **6.4. Relations between objects in changing practices: competition and co-existence with email**

The above discussions refer to cases where email is suggested to have taken over the roles of other objects like mail or typewriters in office practices, in a sense replacing them. However, the interviews also showed that email co-existed with other objects, and that these object relations were shaped and anchored by established expectations, procedures and norms of administrative practices in the Town Hall. This section explores the experiences of Town Hall staff showing how email both competed and co-existed with other objects used in communication practices, specifically mail and fax.

When examining the relations between email and mail, interviewees discussed ways in which email seemed to offer a more effective means of communication compared to mail, with emailing appearing to directly replace the use of mail in certain tasks. Chris observed that email became the primary way to send memos, as opposed to sending them via the internal mailing system: *"Why*

*would you bother to send a memo, handwritten memo that somebody physically carried in the internal post system to somebody else when you could email them?"* In Chris's example, email replaced mail for sending internal messages as it was simply quicker and more convenient.

This was not the experience of Haley, who noted the internal mailing system continued to be used alongside email in her work because this system remained reliable:

*"I would say in in the days when I will say between 2003-2008, that that sort of period... if there was a document that somebody needed to send me and they were in a different building, there was an internal mail system. And that that was used quite extensively. And that's because we had a quite efficient internal mail system."*

As Haley explained, email co-existed with (rather than necessarily replaced) mail because the embedded norms and procedures of established communication practices persisted even into the late 2000s.

The relations between email and mail were influenced by the expectations and requirements of administrative practices in the Town Hall. Mary provides an account of how mail continued to be used alongside email, and in some cases were used instead of email, due to statutory requirements of the Council: *"Some offices still continued to send letters. I mean, paper copies are still sent out because you've got a statutory duty to deliver them unless someone's given you an email address."* (Mary). The legal responsibilities and expectations of Mary's job meant she continued to use mail alongside email in the cases where someone may not have access to a computer or have an email address.

Sharon explained that, in her experience, the Town Hall staff persisted using mail as part of a policy and responsibility to not exclude communication with households, small businesses and other organisations which did not have ready access to computers and email:

*"We were trying not to socially exclude people that don't maybe have the equipment and things. So yeah, so we kept other options open because not everyone had email... And our user base then would probably have had less people working with computers."*

In this context, email and other objects associated with communication, such as mail and fax, co-existed and arguably complemented each other. These persisting object relations were anchored in the established responsibilities and expectations of the Town Hall as a public government building to have as many ways to communicate with communities, businesses, and other governmental organisations as possible.

Email co-existed alongside fax in the Town Hall in the 1990s and, like with mail, its relations to faxing were shaped by the established perceptions, procedures, and normalised routines of Town Hall practices. During its initial introduction into the Town Hall, it was common for the interviewees to compare email with other object-practice combinations such as fax/faxing and mail/mailling. These interviewees. Erica's discussed how, until the late 1990s, email was not considered to be a trusted or secure form of communication, with fax being used instead:

*"People didn't really trust that email was a type of 'real' communication. Because if you didn't want something to be recorded, you would do it by telephone. And if you were to be recorded you would do it by a letter, or fax, they were more secure. So, there was this transitional thing where it was sort of more informally used."*

This suggests that in the Architect's department, at least to begin with, there was a sense of legitimacy, security, or authority that objects-practices like fax/faxing and mail/mailling had which email lacked.

In other cases, the relations between email and fax were shaped by existing legal restrictions, as was the case with Chris who discussed how fax had to be used when sending official documents in his work:

*"I think because the legal rules didn't affect faxed things, but you couldn't do anything legally with an email document. You had to fax them, you know, the Telecommunications Act was only changed to deal with faxes. So, if you wanted to send somebody a contract, you had to fax them, you couldn't be sending it by email."*

For Chris, email did not replace fax in communication practices but was in a sense excluded from use in certain circumstances. In this scenario, it is the legal status of emails, and the corresponding restrictions placed on how they could be used, which determined how email would be used.

For some jobs in the Town Hall, the relations (and use) of email and fax were anchored not by a requirement but by the normalised routines and expectations of how staff in the Town Hall communicated with certain organisations. Haley discussed how fax was used instead of email for contacting certain organisations, because staff in those organisations preferred fax:

*"It was because that was how it was preferred to be received by the publications we were sending to. This did begin to change while I was there, but there was still mostly a focus on fax, though you might follow it up with an email. But you would send the actual release out by fax. And I think there was the reason for that was so that it had a Manchester City Council letterhead on it."*

Here, fax was being used instead of email for two reasons: first that this was expected and routine for the people Haley was communicating with (which she would accommodate); and secondly, that there was an expectation for a press release to have a formal letterhead (which emails could not have at the time, but faxed documents could). In this case, the functionality or 'efficiency' of email was not important (as it was in the discussion in section 6.2), but the norms followed by both Town Hall staff, and the people they communicate with outside the Town Hall were.

The varying experiences of the interviewees from the Town Hall show that how email was used in relation to other objects was dependent on, and anchored in, the expectations, procedures and norms of both Town Hall staff and those that they were communicating with. From the perspectives of different interviewees, who worked in different locations and practices in the Town Hall, email existed in different relationships with other objects. For some email very quickly supplanted the use of mail or fax. For others email co-existed alongside them based on which was more useful for a given task. In some contexts, email was rarely used at all even by the late 1990s due to perceptions of its security and because other organisations were more comfortable to use fax or mail.

#### **6.5. Conclusion: Multistable object relations in administrative practices**

Analysis of the ways in which Town Hall workers experienced the introduction and appropriation of email into their office practices during the 1990s and early 2000s emphasises that there is no coherent or singular history of email. Even among only eight interviewees in the Town Hall, email was diversely taken up and used, and the interviewees held different opinions, feelings, and meanings towards their respective 'emails'. Four themes were identified and discussed, each providing a different examination of the 'multistable' way in which email was appropriated into the Town Hall's administrative work.

As email was appropriated into the Town Hall, it entered into (and existed within) multiple sets of meanings simultaneously. Interviewees shared inconsistent and, in some ways, contradicting experiences of how the initial introduction of email changed how they worked in the Town Hall. One of the ways the interviewees made sense of the appropriation of email was through describing how email either helped or hindered their work. To some, email facilitated quicker and more convenient communication, whilst for others email created a new type of work managing and dealing with an increasing volume of emails.

Different Town Hall staff developed their own improvised procedures and rules to help them manage their use of email in their work, particularly when it came to how emails were recorded and stored. Part of this included how email entered into different sets of relations with other objects such as:

folders, printers and filing cabinets (when being physically stored); hard drives, computers, and disks (when being stored on a computer); and shared networks and servers (when being uploaded and archived). The interviewees experienced their own versions of email storage and recording practices, in which they adapted the recording and storing of email to suit their particular jobs in the Town Hall. As such, email existed in multiple co-exist iterations of storing and recording practices across the Town Hall.

Email played a part in wider change in the roles, responsibilities and required skills of staff in different jobs in the Town Hall during the 1990s, including a gradual shift from specialised forms of office work to more generalised forms. This shift required Town Hall staff to become multi-skilled in their work, particularly with respect to developing their typing and keyboard skills to adapt to the changing expectations of their jobs. The interviewees experienced and responded to these changes to their jobs in their own diverse and sometimes contrasting ways. Some interviewees managed to adapt to the changing responsibilities and expectations of their jobs, learning previously unrequired skills such as speed typing. Others struggled to adapt to the slow disappearance of office juniors and other similar types of workers, who were previously responsible for various 'menial' and 'unskilled' aspects of office work such as copy-typing and mailing.

As email was being appropriated into multiple locations and practices in the Town Hall, email had various kinds of relations with other objects associated with communication, such as in mailing and faxing. Different interviewees described their own understandings of how email competed, replaced, and co-existed with other objects. How email related to and was used alongside or instead of, fax, mail and memos was heavily shaped by how email fitted into the established expectations, procedures, and norms of the Town Halls practices during the 1990s. For example, some interviewees described not using email to communicate across or beyond the Town Hall, because email was considered unsecure or unreliable.

This chapter reinforces the concept that objects like email exist in multistable states in which they are taken up and understood in a variety of ways by different people simultaneously. The concluding chapter of the thesis considers some of the potential approaches that a museum might use to represent the multistable nature of how the same object can exist with many co-existing understandings, uses, roles and sets of relations, and in this sense have many co-existing histories.

## Chapter 7: Representing histories of administrative work through objects and their relations

### 7.1. Summary of the thesis

This thesis was developed in partnership with the Science and Industry Museum (SIM) to consider the question *‘in what ways can objects, and the relations between them, be used to narrate and represent narratives of change in administrative work?’* This question has been explored by examining different forms of object relations found in the Manchester Town Hall, and how these relations interconnect across the Town Hall’s administrative spaces and practices. This question also ties into a larger ongoing debate in museology concerning the roles of objects in museums and how they are used in the crafting and representation of historical narratives and stories (Witcomb, 2003; Witcomb, 2013; Rose, 2016; Lee et al, 2020). Part of this debate includes reflecting on the methods by which objects are examined, described, and presented as part of exhibitions and published works.

According to Van Mensch (1996), Lorento (2012), Witcomb (2013) and others there has been a broad shift in the philosophy of museum research, curatorial and exhibition practices over the last few decades, often associated with ‘New’ Museology (Mayrand, 1985; Vergo, 1989; Stam, 1993) and later ‘Critical’ Museology (Van Mensch, 1996; Lorento, 2012; Shelton, 2013a). These traditions emphasise the de-centering of objects as the focus of museum work (object-driven exhibitions), and thinking about objects as a means of developing and presenting historical narratives and ideas alongside other visual methodologies (‘idea-driven’ exhibitions). Contemporary museologists such as Schorch and McCarthy (2018), Larsen (2018), Simpson (2019) and Wang and Yu (2020), continue to build on this philosophical shift in museology by adopting an interdisciplinary approach to the examination of objects using ideas drawn from outside museology (i.e., from across the social sciences).

This thesis continues this approach of interdisciplinary research by arguing that one way of using objects to explore historical narratives, and representing processes of change, is to focus on the relations that are shared between objects. This requires attention to the interconnectedness, interdependency, and interwoven histories of objects. Informed by these ideas, this research has aimed to show how object relations form and change, and to generate ideas about how these relations might potentially be interpreted and represented by museums in their curatorial and exhibition work.

## The theory and methodology behind an ‘object relations’ focused approach

Objects and their relations are subject to both theoretical and empirical enquiry within the social sciences. Different fields of enquiry have developed diverse conceptualisations of objects, and approaches to empirically examine them. These include: Science and Technology Studies, such as Bijker (1997) and MacKenzie and Wajcman (1999); Actor-Network Theories, such as Latour (1992), Callon (1999), Akrich (1997) and Law (2009); studies of consumption, such as Featherstone (1991), Giddens (1991), Bauman (1997), Miller (1998) and Warde (2014); theories of practice, such as Schatzki (2011), Shove, Pantzar, and Watson (2012), Shove and Spurling (2013), Yli-Kauhaluoma, Pantzar and Toyoki (2013); and post-phenomenology, such as Ihde (2012), Wellner (2016), Turville (2019). Whilst engaged in quite different fields of enquiry they share a common understanding that objects have relations with each other; connections which inform their use, how they are organised and arranged, and how users understand them. In reviewing these diverse fields of enquiry, chapter 2 grouped concepts and ideas into three broad forms of object relations:

1. Material-based relations: the ways objects interact with, consume, and change each other (i.e., staplers binding sheets of paper into a single document).
2. Spatial-based relations: the ways objects are organised within and across space and held together through various infrastructures (i.e., objects arranged on a desk).
3. Practice-based relations: the ways objects are used together as part of specific practices, which they are incorporated into, and which recursively shape each other.

The aim of the thesis was to consider various approaches to conceptualising, interrogating, and presenting relations between objects and how these relations interplay in specific settings and change over time. The Manchester Town Hall was selected to provide a consistent site of study and acted as a ‘jumping off’ point for designing a methodology which examined objects and their relations using a variety of sources, primarily consisting of: Town Hall archival records, photographs of Town Hall offices, and interviews with Town Hall staff.

### **7.2. Key findings of an ‘object relations’ approach to studying and representing processes of change**

Chapters 4-6 show that there are many ways in which objects relate to each other. One of the more straightforward results of this project is being able to list these relations:

Figure 7.1 listing some of the different relations between objects

| Form of Object Relation  | Relations between Objects   | Example   |
|--------------------------|---|---|
| Material-based Relations | Objects can be directly connected or attached to other objects.   | Desktop computers connected by cable to a printer.  |
|                          | Objects can require the consumption of other objects  | Typewriters using up ink ribbons.   |
|                          | Objects (sometimes groups of objects) can produce 'new' material relations and practices through their use.                                   | Photocopiers creating copies out of plain paper.  |
|                          | Objects and tools can be used to alter and edit other objects   | Tippex or correction tape on documents.   |
| Spatial-based Relations  | Objects can be used to hold, support, or store other objects  | Filing cabinets storing documents, or a have a desktop placed on a desk.  |
|                          | Objects can be located and organised in relation to each other in space based on their sizes.   | Large photocopier machines being placed in offices, with other objects and desks fitted and placed around them. |
|                          | Objects can be related across spaces through their interdependent roles within organised systems.   | Punch cards systems of various specialised machinery (punches, verifiers, sorters, calculators etc.).           |
|                          | Objects can be indirectly connected and related across spaces through various infrastructures.  | Desktop computers connected through the internet, or devices connected to the electric supply.                  |
| Practice-based Relations | Objects can be related in that they are used together as part of shared activities and performances.  | Typewriters, carbon paper, and Dictaphones used in tandem during copying activities.                            |
|                          | Objects can be associated with each other through associated and shared understandings, knowledge, and related skills of a specific practice. | Email and computers require each other, and both depend on a pool of required skills and knowledge.             |
|                          | Objects can be related through their similar (and potentially competing) roles in activities and practices.                                   | The roles of mail and Email in communication and sending documents.   |

This list of relations is not exhaustive, definitive, or necessarily surprising, but it does capture the wide-ranging forms of interconnectivity and interrelatedness in which objects are situated. The significance of the different relations listed above is contingent upon the contexts in which they are experienced, and a key point throughout the thesis is that objects are likely to exist in all these types of relations simultaneously. For example, an electric typewriter might directly interact with carbon paper and plain paper; consume ink ribbons; be placed and arranged on top of a desk next to stacks of paper, mugs, desk chairs, and pens; be connected to electrical infrastructures through its wiring;



and, be used in tandem with Dictaphones and notepads as part of tasks to produce a report or letter by a typist.

Objects are shown through this thesis as existing in both simple and complex sets of relations, some of which are less visible or obvious than are others. For example, many of the material-based relations between objects shown in this thesis (i.e., a telephone being plugged into a wall) are overt and reflect direct but relatively simple forms of connections. On the other hand, spatial-based and practice-based relations can be more difficult to notice or see. For example, chapter 5 identifies that telephones in the Town Hall Treasury were connected across telephone lines and infrastructure, which was itself managed by various governmental departments and public organisations (until the early 1980s). Depending on how telephones in the Town Hall are viewed and examined, and how 'zoomed in or out' this examination is, these objects exist in both direct and overt, and more dispersed and invisible forms of relations.

#### Interconnecting material, spatial and practice-based relations

The distinction between material, spatial and practice-based relations was made for analytical purposes, but in everyday life they are interlinked and interdependent in ways that made it difficult to separately discuss and describe them in each chapter. Throughout chapters 4, 5 and 6, there were sections discussing material, spatial or practice-based relations inevitably involved talking about the others as the lines between them blurred.

This was seen in chapter 4's discussion of the differences in how carbon copying, photocopying and computer copying produced and reproduced originals and copies of documents, which inevitably led to some consideration of the roles of office workers in these three distinct instances of copying. For example, the process of carbon copying was mostly manual and required Town Hall staff to continuously engage with the copying process as they typed out the top and bottom copies simultaneously. By contrast, photocopying was more automated and did not need Town Hall staff to engage in the copying process in the same manual way. Instead, photocopying required Town Hall staff to coordinate themselves to maintain the photocopier and to create rules for who got priority over its use. Carbon copying, photocopying and computer copying were not just material arrangements or instances of interconnected objects but were also associated with and part of distinct copying practices. In this chapter it was possible to see some of the recursive relationship between the broader rules, etiquette of norms surrounding copying practices, and the simple ways that objects directly interact and physically connect with each other in everyday work practices.

Similarly in chapter 5, it was found that practices played a key role in how objects were configured and related across spaces. This was especially shown in the case of punched card machines, which were connected across the Treasury by their interdependent roles in a linear system of tasks revolving around the departments calculating and computational practices. Some punched card machines were dependent on other objects (and the roles/tasks they were used for) in order for them to subsequently be used to complete their own respective roles and tasks. For example, for tabulators and electric calculators to produce computations, they required cards that had been punched by electric punches. The dozens of distinct punched card machines found across and throughout the Town Hall Treasury in the 1960s, were highly dependent on each other through practices. In this discussion it then became difficult to separate spatial and practice relations between punched card machines as they recursively shaped each other.

In chapter 6, the introduction and appropriation of email into the Town Hall in the early 1990s was shaped, in part, by the technological features and design of early email programs like Lotus Notes. An example of this was how email was described by some interviewees as having created a new volume of work that focused around managing their constantly filling inboxes. Some interviewees discussed in detail how they adapted to managing the volume and flow of emails by established rules, such as only responding to them at the beginning and ending of their workdays. In this case a design feature of email, that being its instant messaging, shaped the skills, and requirements of Town Hall staff when performing emailing practices. The practice relations of email evolved alongside the changing design and features of emailing technology (such as the development new versions of Lotus Notes).

A key takeaway of this thesis was the intricate and inseparable nature of object relations, and that different forms of relations (material, spatial and practice-based) can affect each other. The interconnected nature of objects also emphasises the importance of examining and contextualising them within specific locations and time periods. The objects discussed in this thesis were characterised by specific combinations of material, spatial and practice relations found in the Town Hall between 1960 and 2010. Attempting to discuss or examining how Lotus Notes, xerox photocopiers, or punched card machines were used in other Town Halls or in different time periods, would result in potentially similar but likely distinct instances of material, spatial and practice relations. Consequently, whilst the discussions in this thesis can be used to develop insights into the broader changes occurring in UK administrative work, the exact relations described in this work existed only in the Town Hall between 1960 and 2010.

On reflection, the analytical distinction that this thesis made between material, spatial and practice-based relations, was met with some challenges, primarily when discussing the relationship between

software and hardware. For physical objects such as typewriters, staplers, and even computer hardware (monitors, keyboards, hard drives etc.) the ability to distinguish between material, spatial and practice-based relations was relatively simple. These objects had physical features and designs (i.e., they had dimensions and moving parts), they took up physical space on desks or in offices and were used by Town Hall staff as part of office practices. Digital technologies, programs and other forms of software complicate the distinctions made between material spatial and practice-based relations, with lotus notes and digital documents stored on mainframe and hard drives being key examples in this thesis. As digital programs they are not directly interactable in the same way an object like a typewriter is, and they cannot be held, moved, or even damaged in the same way. Digital documents do not have physical features or material properties that shape how they are used. At the same time, programs like email do not occupy space or a location in the same way physical mail or letters do, instead they are located across space through digital networks, and connect across and between other objects like computers which serve as interfaces. Throughout this thesis, it was difficult to discuss the hardware and software of computers as separate entities (with their own associated rules, knowledge and skills) as they are always found in combinations and relations with each other, such as keyboards and Microsoft word, or email and hard drives. This presents an interesting challenge for contemporary and future museological and curatorial work, which has to visually present and articulate the relations between immaterial things that have no 'bodies' to show, and do not visibly or overtly connect or interact with people or objects.

### Objects are multistable and have trajectories

As discussed in chapter 2, one of the prominent ways in which contemporary museologists have applied and developed ideas from 'New' and 'Critical' museology, has been to consider alternative and non-traditional approaches to conceptualising, studying and eventually exhibiting objects. The aim of these approaches is to challenge museum visitors by presenting diverse ways of viewing past peoples, cultures, and societies. This is shown in post-colonial studies, which often attempts to re-examine historical narratives from alternative perspectives and non-traditional viewpoints (Chaplin and Klein, 1992; Wintle, 2013; Brown and Mairesse, 2018; Loddo et al, 2021).

Given the findings of this study, and in the context of museological debates, a further question emerges: *'how to use objects to re-examine and represent historical narratives from diverse viewpoints and experiences*. In addressing this question two key concepts, which have been used and emphasised throughout this thesis, stand out: that objects have 'trajectories' and are inherently 'multistable' in nature. Despite being based in different theoretical perspectives (Actor-Network Theory and post-phenomenology respectively) it is argued that these ideas can work together.

Objects always exist within a variety of roles, understandings, and relations in any given moment (i.e., they are multistable). At the same time, they are capable of transitioning into new roles, understandings, and relations over time (i.e., across their trajectories). These ideas draw attention to the various and potentially changing relations through which different types of objects are connected.

The originals and copies of policy documents examined in this thesis show how multistability and trajectories can work together as conceptual tools. Policy documents were multistable in that they figured in administrative work in different ways in the Town Hall. For typists documents were objects to be produced, edited, and worked on, for mailroom staff documents were objects to be sorted and mailed, and for managers documents were objects used for organisation and information sharing. In this sense multiple different interpretations, understandings, and experiences of these documents co-existed. These policy documents also had their own 'trajectories', over the course of which they had the potential to enter new roles and understandings and along the way enter into new relations and interactions with other objects and users. Most policy documents start as drafts and go through various versions as they are edited and redrafted over time. Some versions of these policy documents would go on to be used as part of meetings or part of office administrative work, whilst others became records to be stored away in archives. In this sense, their 'trajectories' continue to unfold today with some of these original and copied policy documents becoming both historical artifacts, and data (which has become part of this thesis).

Recognising, conceptualising, and examining objects as both being 'multistable' and having continually changing 'trajectories' opens up the possibilities for using objects (and their relations) as focal points for multiple perspectives and interpretations of historical narratives. On one hand, the concept of multistability encourages an approach to studying historical objects which examines them from various points of view, with an emphasis on portraying differing accounts and narratives. At the same time, the concept of trajectories encourages an approach to studying historical objects as having multilinear trajectories. From this point of view, the same or similar objects enter different social and historical contexts over time, becoming immersed in different relations, spaces, and practices.

Following this logic, objects can be used as a potential focal/anchor point for telling personal stories and can serve as representations of the lives of different kinds of people. Importantly, these combined concepts provide a conceptualisation of objects which reflect the contemporary aims of museums, which is to provide more inclusive, diverse, and non-traditional accounts of history in their exhibitions (ICOM, 2022).

### 7.3. Translating object relations into methods and techniques for museum exhibitions

The concepts of trajectories and multistability raise interesting questions for the ways in which museums might seek to use objects to represent how cultural or societal change was experienced. But how can the complex interconnected relations of objects, their multistability, and their multilinear trajectories, be translated from conceptual resources into practical approaches for museums to use? This question plays into one of the other main aims of this thesis, to contribute to the continuously developing 'toolbox' of museology by considering how object relations might be shown through various creative and non-traditional methods and techniques.

This includes the challenge of how to design an exhibition which can show the relations between objects and use objects to translate and communicate concepts and themes to people in an engaging manner which explores their materiality, spatiality, how they connect across infrastructure, how they are variably interpreted and used by different types of people. Objects embody a variety of dimensions which can be explored and presented by museums. This has been a constant point of debate in museology, as curators have critically reflected on the role of museums and on approaches to designing exhibitions (Witcomb, 2007; Lorento, 2012; Recupero et al, 2019; Lee et al, 2020). This final section imagines how the concepts of interconnected relations of objects, their multistability and their trajectories can be presented as part of exhibition and curatorial projects in museums.

#### Presenting multistability through vignettes

Translating the concept that objects are multistable into museum exhibitions depends on finding ways of revealing the multiple lives of 'the same' object. An approach employing multiple vignettes (brief but evocative and descriptive accounts of a period of time, often in the form of short stories) could be used to convey the multistability of objects. Vignettes are already a staple tool of museum curators in the development of exhibitions (Witcomb, 1994), and can be crafted through a variety of methods such as using interviews, historical texts, and archived videos and photographs (McShane, 2006; Micoli et al, 2019; Reddy-Best and Goodin, 2020). The "Dangerous Liaisons: Fashion and Furniture in the 18th Century" exhibition created by Harold Koda and Andrew Bolton, illustrates a particularly creative approach to crafting vignettes. Working with a consulting artistic director three vignettes were developed using carefully staged photos of mannequins dressing in period fashion and posed to emulate people engaged in different 18<sup>th</sup> century social practices, such as dancing and posing for portraits (Paulocik, 2006). This approach illustrates the potential for crafting multiple vignettes that can show how objects might be arranged within spaces and practices in a given moment. Multiple vignettes can be placed side by side which show the same objects in different

office spaces and practices, allowing people to re-examine similar objects (and the relations between them) from different social-historical contexts and viewpoints.

Whilst vignettes are often used to portray moments from the lives of people, the approach proposed here is to use vignettes to represent the multiple 'lives' and paths of objects and their multistable relations with each other. This approach to crafting vignettes, in particular the use of multiple interviewees and sources of data, also encourages the inclusion of diverse accounts of historical narratives and themes. This reflects a broader goal of contemporary museologists and curators to develop more democratic (and less hegemonic and narrow) historical narratives.

### Following objects through their ongoing trajectories

Translating the concept of object trajectories into museum practices and exhibitions presents different challenges. Attempting to capture the various trajectories of objects requires methods which consider objects in more than a series of single moments in time, and which recognise that the interconnectedness and interrelatedness of objects to people, places, organisations, and practices are in a constant state of flux.

The trajectories of objects can be viewed through a biographical approach which emphasises that individual objects have their own separate stories that follow their own timelines and manifest their own specific sets of dynamics with both other objects and people (Latour and Lowe, 2008; de Leon, 2016; Van der Vall et al, 2011). This approach involves interrogating objects with lines of inquiry such as: where does it come from, who made it, how is it used, how has the object changed over time, what do people consider its primary use or purpose to be (Kopytoff, 1986).

Museologists and museum curators already employ biographical approaches to examining and presenting objects (Locke and Lowe, 2007; Brien, 2020), and this method is highly flexible in portraying objects across history, from the long-forgotten and ancient to the imminent and objects which define and shape contemporary society (Þórsson, 2018; Dunn et al, 2019). Bjørnevad et al (2019) for example, used an extended biographical approach to examine a 9000-year-old flint-bone dagger. They 'followed' the object by examining what different types of degradation, marking and chipping indicated in terms of how the object was used, how it was made, and what other objects were used alongside it during different periods of time. In doing so, their biographical approach transformed understandings of the dagger, which started as a connectionless legacy artefact into a something situated within various practices and relations with a complex trajectory through history.

As this thesis shows, understanding the biography of any object means identifying the relations that object had with others which give that object meaning, and showing how groups of objects intersect

and interconnect. This could be done through a variety of methods including detailed object descriptions supported with photos, drawn illustrations and other forms of media. A further option is dioramas, as discussed in the next section.

### Presenting relations between objects through interpretive dioramas

Dioramas are an established method of revealing object connections. Dioramas generally involve using selected or curated objects or replicas of natural and man-made things, carefully arranged to represent natural landscapes and historical settings of events (Paine, 2000; Insley, 2008; Reiss and Tunnicliffe, 2011; Tunnicliffe and Scheersoi, 2014). Within museum sciences the merit of dioramas is that they help visitors to 'imagine' and think about historical objects, peoples, and environments (built or natural) within the contexts of their time and place (Livingstone, 2015). Dioramas of Town Hall offices could potentially be used as part of an approach designed to reveal different forms of object relations spread across these settings and to show how relations change over time.

Curators and museologists have developed interpretivist approaches to designing dioramas in exhibitions which avoid totalising past peoples, cultures, and societies, and which are focused around posing questions rather than providing definitive answers (Hein, 1999; Ash, 2004; Rossilli, 2000; Tunnicliffe and Scheersoi, 2015; Mifsud, 2019). Kitchener (2019) for example developed a diorama in the National Museum of Scotland which explored narratives of climate and environmental change in Scotland. This display was designed with taxidermists, model makers, painters, lighting technicians and computer software designers to tell multiple and diverse stories, allowing people to interpret the natural world (and the narratives of climate change) in their own ways. This approach to designing and implementing dioramas steps away from how dioramas have been previously designed and avoids the criticism that they present seemingly 'authentic' accounts of history and of the 'realist' philosophy which underpins this approach (Low et al, 2001; de Chadarevian and Hopwood, 2004).

Developing more interpretive and interactive dioramas opens-up the potential to use them to convey both the trajectories and multi-stability of objects. Curators have also been experimenting with the inclusion of immersive technologies, such as virtual and augmented reality, to further expand the potential for dioramas to be interactive and interpretive experiences. An example of this is developing a phone app which visitors can download and use to perform their own 'analyses and investigation of the objects (and their relations) within the diorama (. Marques and Costello (2018a, 2018b) have discussed a similar approach using a mobile app in the Smithsonian to help reimagine the 'Bone Hall', one of the museums oldest permanent exhibitions designed in the 1960s. The app consists of videos, diagrams, 3d models, animations, and various stories of 13 different animal skeletons, which could be accessed by installing the app and using the mobile's camera on each skeleton. The app provided multiple different layers of

interpretation and interaction for people to engage with the displayed skeletons, showing how they moved, fitted together, and interesting stories of how this helped the animals survive. A similar approach could be used to provide different interpretations of how objects relate and connect to each other within specific contexts such as the Town Hall's offices. This might include in-depth examinations of specific objects and how they worked, to how they are then arranged across spaces, and through the performance of different administrative practices and processes like copying or communication.

### Conclusion

This combination of 'older' approaches like dioramas and vignettes, and 'newer' approaches such as mobile apps and virtual/augmented reality could be used to show how objects exist within a variety of relations in any given moment, and how these relations can change over the course of time. The inclusion of multiple different forms of media, including virtual reality, might help to convey the 'multistability' of objects by allowing people to re-examine objects through different approaches and 'lenses'.

In conclusion, this thesis develops an approach which focuses on how objects are positioned within complex layers of interrelations and interconnections which span across and are partially mediated across multiple spatial and temporal scales and enacted through a variety of social practices. This approach is consistent with the ongoing development and expansion of museological thought and curatorial methodologies which favour more diverse pluralistic, and interpretivist representations of historical narratives and processes of change.



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## Appendixes

### 8.1. Summary table of materials from the Manchester City Archives included in scoping exercise

| Material  | Used in Thesis (Y/N) | Summary Description   |
|---|----------------------|---|
| Manchester City Council Chamber of Commerce and Industry (MCCI) Records 1986-1996 | Y                    | <p>The MCCI is a governmental institution whose responsibilities involve ensuring the developing of Manchester's industrial and service sectors. This includes developing relevant job skills and education among Manchester's workers.</p> <p>These documents include a decade of various reports and documents from the MCCI, many of which include City Council panels, committees or executives. The majority of documents were annual reviews which highlighted important projects and challenges in different years, such as shortages in IT skills in 1989-90, and the development of computer training courses in the early 1990s.</p>  |
| MCCI-City Council Meeting Minutes 1989-97   | Y                    | <p>These are records of meetings between the MCCI and the City Council over various different issues and projects. Some of these documents are original typewritten documents of letters and project outlined, which have been signed by policy executives. These documents slowly change over time from 1989 to 1997, in the paper being used and the font of the text, but not the structure (still same style and still signed the same way).</p> <p>Included was a copy of the Data Protection Act 1998 which updated the previous 1984 act, alongside a summary article explaining changes to governmental practices and requirements from chambers of commerce to protect their data. The Data Protection Act updates government policy for sending, holding, and editing information, to include expanded definitions of what data means to accommodate changing communication technologies such as email.</p> |
| Retail Committee Minutes 1998-2000  | Y                    | <p>The Retail Committee focused on the management and development of the retail sector in Greater Manchester. Despite the committee existing for over a decade, only a few years' worth of records was available in the City Archives.</p> <p>These documents primarily consisted of minutes and correspondence between committee members but includes copies of communications between the committee and a policy executive which included drafts of policy.</p>   |
| IT Committee Minutes 1997-98  | Y                    | <p>The IT Committee focused on the development of IT services and enterprise in Greater Manchester, and in its time was the only official IT committee in the entire UK Chambers of Commerce. The committee was disbanded in 2001 to form various smaller groups focused on issues relating to IT and the knowledge economy of Greater Manchester.</p>  |

|  |          |   |
|--|----------|---|
|  |          | <p>These documents include minutes and copies of material developed by the committee to promote IT services in Greater Manchester, such as operational procedures, proposals for job and skills training, and growing concerning of internet and digital data security.</p>   |
| <p>Small Firms Panel Minutes 1998-2000</p>   | <p>Y</p> | <p>The Small Firms Panel is part of the City Council Policy Department. The panel discusses policy proposals which concern the support and development of small businesses and enterprises in the Greater Manchester Area.</p> <p>These documents include minutes, timetables, and records of correspondence between panel members (including copies of emails, faxes, typewritten letters, photocopies etc.).</p>  |
| <p>Russell, E, (2004). Guidelines on developing a policy for managing email, The National Archives</p> | <p>N</p> | <p>In 2004, the National Archives produced one of the first 'Guidelines on developing a policy for managing email', with the stated goal of filling a gap in authoritative guidance on email management for organisations to use to develop their own email policies that will manage and organise the use of email as part of their work. This is to help organisations keep track of their communication records and prevent inappropriate use of email that could result in legal action.</p> <p>This was found separately in the Archives on recommendation from the archive curator who I contacted for help navigating the archives for records on email use in the City Council.</p> |
| <p>Manchester Chamber of Commerce Annual Reports and Reviews 1960-1997</p>                             | <p>N</p> | <p>The Manchester Chamber of Commerce held annual reports of the expansion, decline and development of different industries and service sectors in the Greater Manchester area, alongside a variety of reviews on specific projects and issues facing the chamber in different years.</p>   |



## 8.2. Summary table of photo albums

| Material                                 | Source of Material   | Summary Description  |
|--|--|--|
| Greater Manchester Lives (GMLives) Album | Greater Manchester Lives Online Archives Website ( <a href="http://www.gmlives.org.uk/">http://www.gmlives.org.uk/</a> )           | <p>The GMLives website is an online archive of photos and documents with the aim of recording and sharing the heritage and history of the Greater Manchester area. Some records go back to the 19<sup>th</sup> century. A key words search was used to find relevant photos, using words such as: Manchester, town hall, city council, chamber of commerce, extension building.</p> <p>29 photos of the Town Hall's interior office spaces from between 1959-1990 were found using this search engine. These photos were a mix of reportage and staged photos.</p>   |
| Manchester Town Hall Refurbishment Album | Sourced from the Manchester City Archives (Scanned into PDF's)   | <p>An album of black and white photos (reportage-style) showing the complete interior of the Manchester Town Hall including the basement, first, second and third floor. This album was produced by an unknown author as part of an organised project to record the changes made to the Town Hall during its extensive interior renovation in 1979-80 for the sake of posterity.</p> <p>The album contains over 1000 photos of every room, corridor, and interior space. This includes floor plans for each floor (and basement) of the building which shows what photos are of what rooms and spaces. Each room comes with a description of its current and previous title.</p> |
| Town Hall Treasury Album                 | Photographed from a physical album of photos located in the Town Hall and kept by the Head Curator of the 'Our Town Hall' project. | <p>This album is owned by the Town Hall and stored in the Manchester Archives and contains approximately 30 photos taken between 1960-62. These were taken by an unknown author to show and describe the various large electronic machines used in the Town Hall treasury department during that time. Each photo focuses on showing one machine and includes a caption describing it. The entire album was copied and collected digitally for analysis.</p>   |

### **8.3. Summary table of interviewees**

| Interviewee (Pseudonym) | Interview Date | Brief Summary of Career in Town Hall   |
|-------------------------|----------------|--|
| Mary                    | 23/08/21       | Started in 1983 as an Office Junior in the Treasury Department, before studying to become an accountant by the 1990s, moving across several teams in the Accountancy Department during the 1990s. Currently a Performance and Insight Leader and Researcher in the Town Hall Extension.  |
| Erica                   | 26/08/21       | Started work in the Town Hall in 1987 and worked as an administrator in the Architects Department. During the early 1990s she moved to the Computer Assisted Design suite, helping to draw up plans on a computer and carry out administrative tasks. During the late 1990s she moved to the Property Review Team in a separate building to the Town Hall, in which she assessed the feasibility of designs and plans.   |
| Yvonne                  | 27/08/21       | Yvonne started in the Town Hall as a community organiser in 1997 helping to promote the roles of women and awareness of domestic violence and prostitution. She moved between different social programs, and gender equality officer positions working with other organisations in Manchester to improve opportunities for disadvantaged groups.<br>She later moved to the Best Value Team in 2000, which was a government initiative to review their services to determine their cost efficiency (becoming team leader in 2001). In 2003 she moved to head a team in the Adult Social Care services which developed policy, staying there until 2011. |
| Regina                  | 08/09/21       | Worked in the Town Hall for 43 years (1965-2008) in various posts including the Education Department and the Chief Executives. During the early 1990s she worked developing Transport policy, before moving in 1997 to the Voluntary Sector Policy and Grants team as its head (it would later be renamed to the third sector team), in which she developed social policy and engaged with community issues.   |
| Haley                   | 23/09/21       | Haley began her work in the Town Hall in an on-and-off temporary position in 1997 as a community manager, organising and coordinating with other organisations. She began full-time work at the Town Hall as a digital communications manager in 2003. Her current position is the digital communications officer and engagement director.   |
| Sharon                  | 24/09/21       | Sharon started work in the Town Hall in 1982 and mostly worked as a junior in Treasury Department, in which she carried out budgeting and accounting services for chief executives and managers. In 1998 she moved to the library to help manage their finance books. She returned to the Treasury department in the late 200s before retiring in 2019.  |
| Chris                   | 19/10/21       | Started working in the Economic Development Department in the Town Hall in 1987, brought in to provide expertise on developing creative industries. During this time, he retained his position in Poptel, a coop and one of the UK's first online services   |

|        |          |  |
|--------|----------|--|
|        |          | providers founded in 1986. He became interested in the emergence of electronic communication, and their potential economic impact. Chris subsequently worked helping to establish the Manchester Host in partnership with the City Council, which was one of the first municipal computer networks in the UK which helped to foster online communications services for public and private sector organisations.  |
| Arthur | 30/11/21 | Arthur was never employed by the Town Hall directly, but was a senior member of Poptel, which the Town Hall had partnered with in the early 1990s in a joint project to develop an online services and information network for the City Council, the Manchester Chamber of Commerce, and eventually across Manchester entirely. To this end, he helped to organise training and information sessions to educate private and public organisations (especially small businesses) in how to access and get the most out of the internet, email, and other recently developing information and online services. He moved on from this work in 2002, when Poptel broke up into small coops. |

## **8.4. Interview guide**

### **Introduction and Job History**

Go through the Participant Information Sheet to explain: the focus of the research, the purpose of the interviews, the rights of the participants, and how their data will be stored and used in the research.

Go through the structure of the interview

Get a rough sketch of interviewees' career in the Town Hall

*\*Could you briefly go over your career in the Town Hall, starting with your first job there?*

- *When did you have this job?*
- *What was your job title?*
- *Where in the Town Hall did you work in this job (department, location in the building)?*
- *What work did that job involve (what kinds of day-to-day tasks, did you have your own desk and/or office, who did you work with)?*
- *What kinds of objects/technologies did you use to do your work (e.g., carbon paper, typewriters, photocopiers, printers, computers, email)?*

### **Carbon Copying, Photocopying and Computer Printing Specific Documents (1980s – 1990s)**

Use the timeline from the introduction to identify one or more jobs in their careers that might have involved copying with carbon paper, photocopiers, or computer printers.

*\*What kind of carbon paper/photocopier/computer printer did you use in this job?*

- *Could you describe it for me (size, any notable features)?*
- *Where was carbon paper/photocopier/computer printer stored?*
- *Were there many official rules for using the carbon paper/photocopier/computer printer (i.e., priority order, scheduling, permission required for access, what was allowed to be copied)?*
- *What about unofficial rules (i.e., do's and don'ts, preferences)?*
- *Could you describe any examples where colleagues (or yourself) not following rules, or not correctly using the carbon paper/photocopier/computer printer (i.e., any tensions, annoyances)?*

*\*What kinds of documents did you copy using the carbon paper/photocopier/computer printer (i.e., correspondence, reports, memos, meeting minutes)?*

Take one or two of the copied documents they identify and use the following guide to discuss each.

*\*Where did the original document come from (i.e., from notes, external letter, from a boss, from another device)?*

- *Were there multiple original documents / how many sources were there?*
- *If it was produced within the office, where and how was it produced and by whom?*

*\*How was the copying process carried out?*

*- Could you describe the steps, beginning to end, of how you went about copying one of these documents?*

*- When was this copying done during your working day?*

*- Who else was involved in this copying activity?*

*\*What other objects did you use alongside the carbon paper/photocopier/computer printer?*

*- How did you use them alongside the carbon paper/photocopier/computer printer?*

*- Why did you use these other objects/what did you use them for?*

*\*What materials/resources were used to make the copies?*

*- Could you describe the plain paper that was used (i.e. size, letterheading, photos, paper colour, thickness)? / Why this type of paper?*

*- What colour ink was used? Why?*

*- Where were these materials/resources stored in the office?*

*\*Edits, Mistakes and Changes to Documents?*

*- How were the originals and copies of a document different? Was it possible to tell what was the original and what was the copy (and if so how)?*

*- In what ways were the copies edited or altered after they were copied (if they were), and how (i.e., marked, signed, coloured in, annotated)? / Did you ever end up with multiple versions of a copy?*

*- What happened if a mistake was noticed or made during the copying process?*

*\*Where did the originals and copies go?*

*- Why did this document need copying?*

*- What were the copies of the document used for (correspondence, record keeping etc.)?*

*- Where did the copies and originals go after the copying was done (where were they sent/stored)? / Were they enveloped, stapled, folded, filed, faxed etc.?*

**Note: If topics associated with staplers, stamps or paper clips are brought up, use 'persistence' guide below to discuss these instances.**

### **Experiencing the Introduction of Email (1990s-2000s)**

**Use the timeline from the introduction to identify the earliest/early jobs in their careers which involved using email, and another job later in their career.**

*\*What were your first memories or experiences of using email in the Town Hall?*

*- When did you first start using email in your work in the Town Hall?*

*- How were you given your email address (did you have multiple)?*

- How were email addresses assigned (i.e., was it per person, did departments have their own email addresses)?
- How did you first start to use email (how often, for what tasks, who did you contact)?

*\*Could you describe the email program that you used?*

- What were its features (copying, storing, file attachments, calendars etc.)?
- What computers were used to access your email?

*\*How did you use email in your office work?*

- What kinds of emails did you send (i.e., long texts, informal communications, formal letters)?
- Who did you send emails to? / What kinds of people did you communicate with via email (internal and/or external communication)?
- Could you briefly describe how you used to draft and send an email?
- If you used attachments in emailing, what types of documents did you attached with your emails (and what happened to them)?
- What happened to your emails (where did they get saved or stored, where they printed and archived and if so where, where they stapled or stamped)?
- Did you have to sign or mark any of your emails?
- Could you talk about how much emailing you did during a working day (did you organise or plan your emailing for certain times of day)?
- Did you use email for any other purposes (e.g., calendars, socialising, notes, memos, reminders etc.)?

*\* Training, Skills, and Expectations*

- In what ways were you expected to be competent with, and understand how to use, email (i.e., was understanding how to use email a requirement of your work)?
- What training did you receive to learn how to use email (where did you get it from, what were you taught, was this regarded as important, did you get any certificates)?
- Where there any skills in particular that you felt were important for you to develop when you started to use email (i.e., how to format emails, how to be clear and concise, how to cc others or attach documents)?
- Do you remember any co-workers who were regarded as being bad at emailing?
- Was there anything you were told or taught not to do when emailing for work?
- What struggles/challenges did you encounter when using email / learning to use email?

*\* How did using email change the way you used other communication technologies, like telephones, mail, and fax machines?*

*- How did email change the way you organised and carried out your work, and communicated with others?*

*- How did email change the way you used telephones, mail, paper (calendars or notes), computers?*

### **Ending the Interview**

**Notify them that the interview is coming to an end and thank them for spending their time to be interviewed.**

**\* Do you have any general reflections about how the Town hall changed in terms of:**

**- How offices were arranged/ organised, the tasks that they did during their working day?**

**- How email and the ways in which copying was done changed?**

**- What aspects of the Town hall office didn't change so much (i.e., in terms of objects, practices, daily tasks and activities etc.)?**

**Remind them of their right to withdraw, to anonymity, and how they interview data will be stored and used in the research.**

## 8.5. Verbal consent protocol

### **Representing the Objects of Administrative Work and how they Change - Verbal Consent Protocol**

I have approached you because of your office/administrative work experiences during your time working in Manchester Town Hall during the 1980s. I am especially interested in your insights into how you copied different types of paper documents in the Town Hall using **carbon paper, photocopiers, or computer printers.**

1) Have you had the chance to read the Participant Information Sheet that I have shared with you?

- YES => Ask if everything is clear and if they have any queries. Answer any questions about the study. Then ask: **do you have any comments or special wishes regarding preserving the anonymity of yourself/your organization?**
  - o If YES => discuss the participant's wishes and make a note of them, commit to respect them if feasible. In the unlikely event that the participant would request something that you may not be able to do (like use their real name or agree to talk but not agree to be quoted) this participant would be ineligible for participation in the study and the interaction would have to end.
  - o If NO => proceed to question (2)
- NO => review and discuss the PIS there and then. In case of special wishes proceed as above.

2) Do you agree to participate in the study on the terms discussed in the PIS?

- YES => Thank you, make note of consent, save audio as a verbal consent file, and proceed to questions.
- NO => Thank you, gather feedback if any, end interaction.



## 8.6. Consent Form



# CONSENT FORM

**Project Title: Representing the Objects of Administrative Work and how they Change**

Name of Researchers: Charlie Southerton

Email: [c.southerton@lancaster.ac.uk](mailto:c.southerton@lancaster.ac.uk)

**Please tick each box**

|   |                          |
|---|--------------------------|
| 1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily  | <input type="checkbox"/> |
| 2. I understand that my participation is voluntary and that I am free to withdraw at any time during my participation in this study and within six weeks after I took part in the study, without giving any reason. If I withdraw within six weeks of taking part in the study my data will be removed. If I am involved in focus groups and then withdraw my data will remain part of the study.   | <input type="checkbox"/> |
| 3. I understand that any information given by me may be used in future reports, academic articles, publications, or presentations by the researcher/s, but my personal information will not be included, and all reasonable steps will be taken to protect the anonymity of the participants involved in this project. Anonymised data will be offered to Lancaster University's Pure Data repository and will be made available to genuine research for re-use (i.e., secondary analysis). | <input type="checkbox"/> |
| 4. I understand that my name/my organisation's name will not appear in any reports, articles or presentation without my consent.  | <input type="checkbox"/> |
| 5. I understand that any interviews will be visually and audially recorded, but that only the audio data will be transcribed, with the visual footage being deleted immediately after the interview.  | <input type="checkbox"/> |
| 6. I understand that the data will be protected on encrypted devices and kept secure.   | <input type="checkbox"/> |
| 7. I understand that data will be kept according to university guidelines for a minimum of 10 years after the end of the study.   | <input type="checkbox"/> |
| 8. I agree to take part in the above study.   | <input type="checkbox"/> |

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

**I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.**

Signature of Researcher /person taking the consent \_\_\_\_\_  
\_\_\_\_\_ Day/month/year

Date

**One copy of this form will be given**

## **8.7. Recruitment Advertisement**

### **Representing the Objects of Administrative Work and how they Change – Recruitment Email for General Circulation**

Dear Manchester Town Hall Staff

My name is Charlie Southerton, I am a PhD student at Lancaster University. I will be carrying out interviews with staff who have experiences working in the Town Hall during the 1980s. Specifically, I am interested in your experiences copying paper documents using carbon paper, photocopiers, or computer printers.

My research is partnered with the Science and Industry Museum, and together we are interested in exploring methods of examining and representing the experiences of office workers in Manchester over the last 60 years.

Your insights into how copying was carried out in the Town Hall during the 1980s would be very helpful in understanding how different copying technologies shaped the ways in which copying was performed.

As I have mentioned, I am interested in interviewing anyone who worked in the Town Hall in an office/administrative role during the 1980s.

The interviews will take approximately one hour, and will be carried out online, using either Microsoft Teams, or an alternative software such as Skype or Zoom (whichever is most convenient for you).

For more information I have attached a Participant Information Sheet with further details of my project, your participant rights, and what I would be doing with your interview data.

If you are able to take part in my research, please send an email to me at this address: [c.southerton@lancaster.ac.uk](mailto:c.southerton@lancaster.ac.uk).

I look forward to hearing from you.

## **8.8. Participant information sheet**



### **Participant information sheet**

**Title: Representing the Objects of Administrative Work and how they Change**

For further information about how Lancaster University processes personal data for research purposes and your data rights please visit our webpage: [www.lancaster.ac.uk/research/data-protection](http://www.lancaster.ac.uk/research/data-protection)

My name is Charlie Southerton, I am a PhD student at Lancaster University, and I would like to invite you to take part in an interview discussing your experiences working in the offices of the Manchester Town Hall during the 1980s.

Please take time to read the following information carefully before you decide whether or not you wish to take part.

#### **What is the study about?**

Over the last 60 years Manchester's administrative sector has doubled in size, and alongside this the technologies used in office work have developed and changed. This research is partnered with the Science and Industry Museum, with the shared aim of exploring how we can use office objects to represent and explain the history and changing experiences of office work in Manchester. The Manchester Town Hall represents a significant aspect of Manchester's cultural heritage, and has been a consistent site of office work in Manchester for over a hundred years, making it an exciting location to set this research in. This research is therefore interested in exploring how office work was done in the Town Hall's various departments during different periods of time in the last 60 years, and what technologies were used in this work.

#### **Why have I been invited?**

I have approached you because I am particularly interested in exploring your experiences using carbon paper, photocopiers, or computer printers to copy paper documents as part of your office work in the Manchester Town Hall in the 1980s.

I would be very grateful if you would agree to take part in this study.

#### **What will I be asked to do if I take part?**

If you decide to take part, this would involve a one hour online video interview with me. If possible, the interviews will be held using Microsoft Teams, but if you do not have (or are uncomfortable using) this Microsoft Teams we can use alternative platforms such as Skype or Zoom.

With your permission I will audio record the interview.

Before the interview starts, you will be asked to provide consent, either by signing a digital consent form or by providing verbal consent before the interview which will be recorded.

During the interview we will briefly discuss an overview of your career in office work in the Manchester Town Hall, before specifically discussing how you interacted with/used carbon paper, photocopiers, or computer printers as part of your everyday office work. This includes asking you to describe in detail the steps involved in copying a specific types of documents (i.e., a letter or memo) using these technologies, and what happened to said documents after they were copied.

### **What are the possible benefits from taking part?**

Taking part in this study will allow you to share your experiences working in office environments and performing office work in the 1980s. This will contribute towards understanding how museums, such as the Science and Industry Museum, can use office objects to represent, illustrate and explain past lives and narrate processes of change in the administrative sector in Manchester, which it views as a significant aspect of Manchester's cultural heritage.

### **Do I have to take part?**

No. It's completely up to you to decide whether or not you take part. Your participation is voluntary.

### **What if I change my mind?**

If you change your mind, you are free to withdraw at any time during your participation in this study. If you want to withdraw, please let me know, and I will extract any ideas or data that you contributed to the study and destroy them. This includes raw audio footage, consent forms, notes, and transcriptions of the interview. However, it is difficult and often impossible to take out data from one specific participant when this has already been anonymised or pooled together with other people's data. Therefore, you can only withdraw up to two weeks after taking part in the study.

### **What are the possible disadvantages and risks of taking part?**

It is unlikely that there will be any major disadvantages to taking part but taking part will mean investing approximately one hour for the interview and remembering/ talking about your working life in the 1980s.

### **Will my data be identifiable?**

After the interview, only I, the researcher conducting this study will have access to the ideas you share with me and my supervisors Prof Elizabeth Shove and Dr Nicola Spurling.

The interviews will, with your consent, will include video cameras so that we can see each other during our conversation. The visual footage of the interviews will not be used in any way for my research, and only the audio footage will be stored, analysed, and transcribed.

I will keep all personal information about you (e.g., your name and other information about you that can identify you) and anyone you discuss in the interview confidential, that is I will not share it with others. I will remove any personal information from the written record of your contribution. All reasonable steps will be taken to protect the anonymity of the participants involved in this project, including providing you with an alias when you are being quoted in any published work.

### **How will we use the information you have shared with us and what will happen to the results of the research study?**

I will use the information you have shared with me for research purposes only. This will include my PhD thesis and other publications, for example journal articles. I may also present the results of my study at academic or museum conferences.

When writing up the findings from this study, I would like to reproduce some of the views and ideas you shared with me. I will only use anonymised quotes, so that although I will use your exact words, all reasonable steps will be taken to protect your anonymity in our publications.

Within one month of conducting, I will transcribe our interview, and the original audio footage kept in a secure folder on my Lancaster University One Drive account. The interviews will be transcribed by myself with the aid of a transcription software that automatically generates transcripts without using an external human transcriber.

#### **How my data will be stored**

**Your data will be stored online on my Lancaster University One Drive account, which only me, the researcher, can access. On this One Drive, I will separate any data that can identify you in a separate folder to any anonymised material being used in published work.**

**Your data will only be accessed from my password protected laptop, and I will ensure that your data will be deleted from my laptop at the end of each working day to ensure security.**

All data stored on my Lancaster One Drive will be held for 3 months after I leave Lancaster University. After this 3-month period, all data stored on the One Drive will be automatically destroyed when the University deletes the One Drive.

This study is a CASE Studentship funded by the Economic and Social Research Council (ESRC), who expect me to make my data available for future use by other researchers. I will exclude all personal data from archiving. I intend to archive/share the data through the Lancaster University's Data Repository, Pure. This repository is only accessible by other academic researchers.

### **What if I have a question or concern?**

If you have any queries or if you are unhappy with anything that happens concerning your participation in the study, please contact myself: [c.southerton@lancaster.ac.uk](mailto:c.southerton@lancaster.ac.uk)

Or one of my PhD supervisors from Lancaster University:

Prof Elizabeth Shove: [e.shove@lancaster.ac.uk](mailto:e.shove@lancaster.ac.uk)

Dr Nicola Spurling: [n.spurling@lancaster.ac.uk](mailto:n.spurling@lancaster.ac.uk)

If you have any concerns or complaints that you wish to discuss with a person who is not directly involved in the research, you can also contact Prof Imogen Tyler, the Head of Sociology Department at Lancaster University:

University Email: [i.tyler@lancaster.ac.uk](mailto:i.tyler@lancaster.ac.uk)

Microsoft Teams contact address: [tyleri@lancaster.ac.uk](mailto:tyleri@lancaster.ac.uk)

Telephone Address: +44 1524 594186

This study has been reviewed and approved by the Faculty of Arts and Social Sciences and Lancaster Management School's Research Ethics Committee.

***Thank you for considering your participation in this project.***

## **8.9. Photocopier photos for interviews**

**Canon PC-6RE Copier**



**Sharp Savin 9113Z Copier**



**Canon iR2270**



Olivetti D-Colour MF-752



HP Laserjet 3390

