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Ph.D. dissertation

CONTEXTUALIZING PRACTICAL KNOWLEDGE IN EARLY MODERN EUROPE

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List of abbreviations

BnF	Bibliothèque National de France
EEBO	Early English Books Online
ESTC	The English Short Title Catalogue
OCLC WorldCat	Online Computer Library Center Wold Catalogue
ODNB	Oxford Dictionary of National Biography
OED	Oxford English Dictionary
SP	State Papers
TCD	Trinity College Dublin
Treccani	Enciclopedia Italiana di Scienze, Lettere ed Arti iniziata dall'Istituto Giovanni Treccani
USTC	The Universal Short Title Catalogue

Foreword

The interest in practical knowledge in this PhD dissertation is focused on an early modern European setting. However, I recognize that practical knowledge is of all times. In fact, today it is still a burning issue. Social media make practical knowledge luxuriate. The Internet is overflowing with instructions in the form of videos, podcasts, slideshows, apps, wikihow and what not. How-to headlines seem to be successful and sexy.

During the summer of 2015, I started to interview my grandfather about trade secrets. My grandfather grew up within the context of a family business in luxury hand-made furniture. One of his responsibilities was to experiment with substances and procedures in order to manipulate the colour of the wood. I learned a lot during this encounter, in both a micro and macro sense. I learned about which substances and materials woodworkers used in the fifties and early sixties in the Belgian 'Westhoek'.[1] I learned about interesting misconceptions about wood. And more importantly, I learned about the context of practical knowledge and secrecy, applied in an actual lucrative family business. A talk with my grandfather could easily dismantle the mysterious veil that sticks to secrecy, which lies in line with the concept of this PhD dissertation.

My grandfather assured that creating and manipulating the colour of the furniture could keep him days and nights at work. He said that he became everything through trying things out. He added that these things could not be done in the kitchen, because it is 'vuiligheid' or a filthy task. My grandfather's great-grandfather placed furniture in the cowshed. The urine of cows contains ammonia, a substance that makes beech lighter, and oak darker. My grandfather used little quantities of ammonia to colour furniture, locked into the aeration room of the independent electricity unit in the company. He also used *caligène*, an aggressive substance that made him lose the skin of his hands and arms

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[1] The 'Westhoek' or 'Maritime Flanders' is the southern part of the coastal area of Flanders and its hinterland.

the first time he experimented with it. To give bistre, a brown wood-soot pigment, a more intense colour, he would boil it, not just dilute it with water. His favourite personal recipe was adding chicory to colours for furniture.

His 'inventions' were personal but were used in the company. They were not easily exchanged. The phrase 'the Malines people also did not tell us how they coloured their furniture' is exemplar to this. One of the challenges of my grandfather was conducting experiments with an organized registration system. He did not take notes during the experimenting phases. Afterwards, if a procedure seemed to be successful, he did not have exact measurements. He would have to repeat all over again to discover what the exact combinations and quantities were. Measurements were often decided upon with the eye, which in any case would lead to imprecise descriptions of 'a little of this' and 'a lot of that'. But sometimes it was rather easy, such as the *caligène*, which he diluted with 50% water. Another of the company's secret procedures was the hiring of a painter. Sometimes parts of the wood were not sensitive to the colouring agents. Because the colouring procedure happened after the furniture was made, this was problematic, so the painter would paint a fake knot on the affected areas. According to my grandfather, their painter always did impeccable work; nobody ever noticed any painted areas on the furniture.

The secrets described above are procedures based on actual practice, often by trial and error. Secrecy was meant to keep the business or trade running. Practical knowledge can leave the professional environment occasionally and get into wider circulation. This happened also with my grandfather's practical knowledge and secrets. The family business is no longer operative and hasn't been for many years, but the circumstances of this PhD thesis and my personal interest made the secrets leave their original environment. Through this PhD thesis a small amount of people will read about it, so the knowledge will be passed on. If this PhD thesis is published, a larger amount of people will get access to this practical information. If other scholars quote it or reference it, dissemination potential will increase significantly.

I would say that the current PhD dissertation is like an early modern recipe book: eclectic. It is built out of several kinds of practical knowledge. Early modern recipe books too are the product of collecting of all kinds of practical knowledge, coming from different sources. A central idea of this PhD dissertation is that recipe books are composed. Recipe books are rarely the product of one person only, because practical knowledge is always built on knowledge acquired previously by different persons.

Preliminary considerations

Writing long books is a laborious and impoverishing act of foolishness: expanding in five hundred pages an idea that could be perfectly explained in a few minutes. A better procedure is to pretend that those books already exist and to offer a summary, a commentary.

Jorge Luis Borges[2]

In light of the quoted wisdom of Argentinian writer Jorge Luis Borges (1899-1944), this introduction shall be short, offering a summary to this PhD dissertation. During the course of my PhD I learned that unnecessary lengthy and detailed descriptions do not necessarily serve the purpose. I therefore try to introduce my topic, sources, method, structure, and underlying ideas only briefly in order to facilitate the reading.

This PhD dissertation is built in a twofold way. It investigates practical knowledge in a general sense across early modern Europe, and alongside this contains a case study of art technological knowledge in early modern Europe. Each of these consists of three symmetrical chapters: the first chapter of each respective part investigates the origin or genesis of practical knowledge; the second chapter the transmission dynamics; with the third chapter assessing the consumers and consumption of practical knowledge.

The overarching topic of this dissertation is practical knowledge in early modern Europe. Practical knowledge is the know-how people have in order to make something, do something, or obtain something. Textually speaking, this knowledge profiles itself as a

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[2] Cary 2014, p. 102. The quote comes from the introduction to Jorge Luis Borges' collection of short stories *El Jardin de senderos que se bifurcan*, published in 1941.

prescription, recipe, secret, or formula. The areas of interest of practical knowledge are very wide. The variety can be illustrated by the recipes to make a perfume, to make ink, to make gunpowder, to dye leather, cure a cancer, remove grease from parchment, know the sex of an unborn child, make snail water, cure for bed wetting, make almond butter, and many more.

These often interesting, curious, or odd types are the textual variant of the practical knowledge. The real essence of knowledge or knowing is a feature proper to the brain. Knowing is a mental comprehension of information. This means that the actual knowledge principally existed inside the brains of people. This forms a serious complication in pursuing a PhD in this precise topic. But, for various needs and purposes, users wrote down practical knowledge. It is these textual witnesses that provide the primary sources for this PhD dissertation. The repertoire of sources I have taken into examination is largely early modern. When relevant, I consult and refer to sources outside of the early modern timeframe (ca. 1400–ca. 1700). Going outside the prescribed timeframe might not be very problematic considering the nature of texts containing practical knowledge: a lot of the texts that circulated in early modern Europe were copies from older texts. Some of the copied recipes go back to antiquity.[3] Texts were copied and recopied, used and reused, kept identical, or adapted and changed (for transmission principles see part I, chapter 2). This is why texts with practical knowledge could have a long lifespan. That is the reason why the boundaries of the early modern period can be and should be crossed.

In order to maintain a dynamic picture of practical knowledge, I opted to integrate both new and commonly used examples of recipes and recipe books in my writing. In order to maintain a European dimension, I work with sources in several languages and from several geographical areas.[4] Hence, the sources I use come from several European and a few North American libraries and institutions. The largest amount of recipe books I consulted came from British libraries, such as the Wellcome Library, the British Library, and the Bodleian Library. Also in the UK I have been to the National Art Library, the Caird Library of the National Maritime Museum London, the library of the Society of Antiquaries of London, Corpus Christi College Oxford,

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[3] Long 2001.

[4] The languages are: English, Italian, French, Portuguese, Spanish, Dutch, German, and Latin. Generally one might state that the geographical areas coincide with the languages that appear in the recipe books, but this is not entirely true. For instance the instances of Spanish and Portuguese recipes appear in an English recipe book (Cfr. London, Wellcome Library: Wellcome MS 7113). Also Latin, which is not an explicit target in the PhD dissertation, was used across boundaries.

Magdalen College Oxford, the Chetham's Library Manchester, the John Rylands University Library of Manchester, the Sydney Jones University Library of Liverpool, the University Library of Glasgow, the University Library of Birmingham, and the University Library of Cambridge. In other European countries I have been to Trinity College Dublin (TCD), Bibliothèque National de France (BnF), the library and archive of the Plantin-Moretus museum at Antwerp, the library of Rubenianum at Antwerp, the heritage library Hendrik Conscience at Antwerp, the university library of Antwerp, the university library of Bologna, the Biblioteca comunale dell'Archiginnasio at Bologna, and finally, the private library of Giovanni Mazzaferro at Bologna. In Northern America I have visited the Library of Congress and the Folger Shakespeare Library, both in Washington, D.C. Furthermore, I have had access to digital or paper reproductions of recipe books through other library systems, distant orders, or exchange with other scholars.

Most of the recipe books I consulted come from the first three libraries mentioned: the Wellcome, the BL and the Bodleian. In these libraries I tried to pursue completeness in the search after recipe books within the set time frame and languages. I opted to look for recipe books in English, Dutch, Italian, French, and German. But occasionally these recipe books brought other languages along, such as Latin, Spanish and Portuguese. These last three are not actively part of my capacities, but neither am I incapable of dealing with them. In the other libraries I went for specific purposes: for example, I visited the NAL to examine a few very interesting art technological recipe books. The reason why I did not see all the recipe books of interest in the other libraries is connected to issues of time. I have spent an entire month at the early printed books and special collections of Trinity College Dublin to investigate the core of their original collection (which has a fascinating history). Occasionally my research brought me to the manuscript room, but for more archival issues. I did not have a lot of time left to make a systematic study of all handwritten recipe books. This PhD dissertation has selected a few manuscripts and printed recipe books to refer to and to take examples from. Some recipe books are more adapted to use than others. I make for instance frequent use of MS Wellcome 7113, because it is a very nice example of a seventeenth century recipe book. A lot can be said about this particular manuscript. However, I have left the majority of studied sources unmentioned simply because of motives of selection.

There exists a lot of diversity and complexity in the contexts of sources I am dealing with. Generally I speak about recipe books, but written recipes can appear just

anywhere: letters, diaries, various accounts, etc. Regard the producers of sources: they are from different social backgrounds and both genders. Sources can be produced for personal consumption, for a known or unknown patron or for divulgation, which brings along a specific or non-specific audience. This PhD dissertation tries to take away some general truths about textual and bookish practical knowledge.

The methods applied in this dissertation are various methods used by book history: mainly a textual and material analysis. A book historian's point of view is particularly convenient for the study of practical knowledge, because the remaining sources are mainly textual. Texts, which are the communicative vehicles of ideas and knowledge, are intrinsically connected to their material vehicles: books. It is obvious that all kinds of surfaces could be used to write down ideas. People could carve information into a church pillar or scribble a quick note on the butcher's wrapping paper, but the common denominator for the sources used in this dissertation is "books": parchment books, paper books, thick books, thin books, handwritten books, printed books, specialist books, miscellaneous books, clean books, severely damaged books, parts of books, reassembled books, and many more. Books are the vehicles that contain texts; texts are the vehicles that embody the intellectual expression of information, here practical knowledge expressed in recipes. Throughout the whole of this PhD dissertation there is a distinction made between books and texts, the first being a material vehicle, the second being an intellectual vehicle that reflects ideas or information. A further distinction to be made is between work and text, because not every text is a literary work, such as the case of instructive literature. Book title refers to the title of a book, intending all individual copies of one or more editions. A copy is an individual material book.

The lifespan of books hardly ever equals the lifespan of a text. Also, both books and texts are hardly ever fixed products. Both texts and books were subject to changes: texts change while being narrated or copied; books change through subsequent users. Books endure changes over time by multiple users who add (or remove) text or materially mutate the book. The combined textual and material analysis offers the best understanding of the sources. Through this method I unveil transmission dynamics and shed light on the manuscript – print rate.

In this PhD dissertation I frequently deal with secrets. Secrets have the literary form of a recipe and convey principally the same kind of information. I use secret and recipe interchangeably. The complex case of Alessio Piemontese could be interesting to shed light upon the various uses of the word secret. When I will talk about the secrets of

Alessio Piemontese, I indicate the collection of recipes as a concept that is valid for all of the publications and manuscript copies that ever existed. Meanwhile when I talk of the *Secrets* of Alessio Piemontese I refer to the English edition published firstly in 1558. When I talk of the *Secreti* (1555) of Alessio Piemontese, I refer to the first publication of the secrets of Alessio Piemontese. So 'secrets' indicate the content of the work, meanwhile '*Secrets*' indicates the title of a publication.

Concerning the Low Countries, the language and identity I would like to point out that I use mainly three terminologies: Flemish, Dutch, and Nederlandish. I am fully aware that the terminology Nederlandish is most commonly used in art history; still, I find it suitable for book history. When something concerns only Bruges, I would be inclined to refer to the case as Flemish, meanwhile when it concerns Amsterdam, I call it Dutch. If I specifically refer to a language product or identity issue that concerns both regions, I will apply the term Nederlandish. Same reasoning can be made about English and British for instance.

Other than terminologies, the thesis contains a lot of non-referenced biographical information, such as the dates of birth and death of people and other biographical details. For these matters I base my research on existing databases, unless otherwise stated. For English subjects I rely on the online database of the Oxford Dictionary of National Biography, also known as the ODNB.[5] For Italian subject I rely on the online encyclopaedia about Italian culture Treccani.[6] For subjects out of the Low Countries, I rely on *Biographisch woordenboek der Nederlanden*[7] and the *digitale bibliotheek voor de Nederlandse letteren*, also known as the dbnl.[8] For arts- and craftsmen I rely on the database of Oxford Art Online.[9] For subjects who do not enter in one of these categories, data come out of other secondary literature, or are left aside in case of doubt or controversy, or, are made into a research quest.

In referencing systems to some art technological recipe books I preferred to use the chapter numbers in Roman capital numbers of individual recipes, as the convention prescribes for instance Cennini. There are many translations of *Il libro dell'arte* of Cennino Cennini, starting to appear as early as the nineteenth century. Only recently the

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[5] www.oxforddnb.com
[6] www.treccani.it
[7] van der Aa 1852-1878
[8] www.dbnl.org
[9] www.oxfordartonline.com

transcription of the Italian text was published.[10] Lara Broecke published the Italian original with an accurate English translation. Unfortunately, I could not live up to the expectation of examining Cennini's original text within the boundaries of the PhD dissertation. But this publication is an absolute must have in my personal library.

Another way to facilitate the reading of this PhD dissertation is by shedding light upon its structure. Part I of the thesis will contribute to the understanding of the overall setup of practical knowledge. Part II of the thesis emphasizes practical knowledge in the arts, hereafter called art technical knowledge. Part I is dedicated to practical knowledge in general whereas Part II addresses art technical knowledge in a precise context. The dissertation is conceived in two parts, each containing three chapters. The three chapters of both parts are organized in a symmetric way, meaning that the main topics correspond, as is lined out in the scheme below.

PART 1	TOPIC	PART 2
The Study of Texts: Practical Knowledge	**CONTEXTUALIZATION**	*A Very Proper Treatise*: **The Case Study of an Art Technological Printed Book**
Chapter 1 The Construction of Practical Knowledge	**CREATION**	Chapter 1 *A Very Proper Treatise* (1573) as a Literary Product, Reflecting Art Technological Knowledge
Chapter 2 The Transmission of Practical Knowledge	**DISSEMINATION**	Chapter 2 Selling Secrets. The Print Business as a Mediator in the Dissemination of Art Technological Knowledge
Chapter 3 The Early Modern Users of Practical Knowledge	**CONSUMPTION**	Chapter 3 Buying Secrets. The Audience and the Consumption of Art Technological Literature

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[10] Lara Broecke, *Cennino Cennini's Il Libro dell'Arte: A New English Translation and Commentary with Italian Transcription* (London: Archetype Publications, 2015).

The main aim of this interdisciplinary study is to contextualize practical knowledge. By 'contextualizing' I mean studying different topics that are intrinsically intertwined with the subject. In this PhD dissertation the origin or creation, transmission or dissemination, and use or consumption are key subjects for understanding the place of practical knowledge in early modern European society. As seen in the grid above, both parts of the thesis evolve along these three topics.

The most suitable debut to any topic is an introduction to the topic, for this reason the first chapter of the first part will be an introduction to the whole thesis. A working definition, historiography or state of the arts, and theorization are part of this chapter. For the historiography I take the reader on a journey where I browse various terminologies that align with or cover the concept of practical knowledge. In this chapter I theorize the textual aspects of knowledge production. This first chapter acts not only as an introduction to Part I of the thesis, but also to the whole thesis. Talking about practical knowledge without addressing the transmission dynamics is a hard task. Transmission, dissemination, circulation, and knowledge transfer are a significant part of the nature and behaviour of knowledge. Theory and exemplary studies will be addressed in the second chapter of Part I. Another way to contextualize practical knowledge is through the study of its producers and consumers. In the third chapter of Part I, I delineate some key functions people can have while they are dealing with practical knowledge.

Part II of this PhD dissertation is conceived as a microapproach. In this part the study of the early English print *A Very Proper Treatise* (1573) finds its legitimate place. Ad Stijnman describes 'art technology' as 'knowledge concerning the production methods of works of art or craft, i.e. knowledge concerning materials, tools, machines, techniques and sites used in making objects with a certain cultural value / from cultural heritage'.[11] This means that Part II narrows down the topic from a broader concept (practical knowledge) to a more precise concept (art technical knowledge). The *Treatise* will be examined through the same three lenses used in Part I: creation, dissemination, and consumption. The big methodological difference between the two parts lies in the nature of the sources, Part I using a variety of primary sources side by side with a significant corpus of bibliography while the second part focuses on a single source. The focus in Part I is mainly textual, meanwhile in Part II the material book is considered along with the text. There is a chronological order in the three chapters, which runs parallel to the

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[11] Stijnman 2015.

three key topics. In the first chapter the origin of the text of the book is examined. The following chapter examines the making or origin of the material book. This finds its legitimate place in the second chapter about dissemination because it was the introduction of print, which facilitated the dissemination of knowledge out into wider circulation. In this chapter I argue that the book is a printer's compilation. Finally, the consumption and consumers of the book will be studied in the third and last chapter.

Part I

THE STUDY OF TEXTS:
PRACTICAL KNOWLEDGE

Introduction

Nemo artifex nascitur

Jacoba van Veen

The opening quote of the introduction, *Nemo artifex nascitur*, I borrowed from Jacoba van Veen (1635–87/1694), a remarkable seventeenth century Dutch lady. Her manuscript with recipes is kept at the Royal Library in The Hague (reference 135 K 44). What Jacoba van Veen probably intended with this certainly-not-unique motto is that nobody is born an artist. The essence of this motto says that being an artist is a *métier* that has been taught. This stands diametrically in opposition to a still-governing idea of the innate talent of the artist, which Vasari promoted in his *Vite* (1550).[1] This thesis does not ignore the aspect of talent, but the stress lies on the knowledge, experience and practices involved. Teachings or knowledge transfers can occur in a variety of ways. The most common are explained in Fernando Bouza's 'communicative trinity'. The communication of information is like the three Trinitarian personalities: the oral, the visual and the written.[2] These are three common ways or media in which information, here practical knowledge, finds its way from one person or group to another. The focus in this dissertation lies with the written knowledge transfer, however the oral and visual or demonstrational aspects are not excluded from this work, since they are related to each other.

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[1] Hicks 2015.
[2] Bouza 2004, p. 11.

Models for the transmission of knowledge or information are plenty. This dissertation modifies a basic model for knowledge transmission proposed in Kusukawa and Maclean's *Transmitting Knowledge* (2006), which is based on the model Roman Jakobson proposed in 1960:[3]

CONTEXT

CONTENT   RECEIVER

MEDIUM

I change one of the parameters in order to better express the concept and the status of the recipient of the knowledge in question. The 'receiver' is being replaced by the word 'user'. A receiver points to a passive function, while this PhD dissertation conceives the user as active and open to new interpretations. The user can be the creator of the information or knowledge; the user can be both the writer and the reader.

CONTEXT

CONTENT   USER

MEDIUM

Essential to this project is the use of the concept of 'user' instead of 'receiver' or 'reader'.[4] Another equivalent for user that will be applied in this PhD dissertation is 'consumer'. Both 'user' and 'consumer' indicate that they interact in an active way with practical knowledge. The minimum action a reader would perform is the action of reading. The concept of 'user' can implicate numerous actions such as reading, copying, adding, omitting, and putting it into practice. Practical knowledge is practice-based and thus users could be reproducers of their experiences. The term reader does not imply reproduction of knowledge. The experimenter is the creator of knowledge, but also the receiver can be actively involved in knowledge production and transmission by writing it down, by passing it to others, and/or by experimenting and improving or adapting it. The act of writing one recipe (the nucleus of the transmission of practical knowledge) is commonly done by one person, although exceptions exist. The so-called author of a recipe book is a deceptive concept, as recipes books are compilations, either compiled by

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[3] Kusukawa and Maclean 2006, p.5.
[4] A further elaboration of the terminologies 'users' versus 'readers' takes place in Part II of this dissertation.

multiple authors or copied by one person, but still a result of multiple sources at the root. In this research, texts are used to study practical knowledge, but users are central to the whole process of producing and reproducing.

The first chapter will function as an introductory chapter around how knowledge was created in early modern Europe. This chapter will give the state of the art or *status quaestionis* of the umbrella term 'practical knowledge' and the various knowledge types it covers. Classifying practical knowledge is thus a complex task and any taxonomy an open field for debate. This chapter will reflect on this complexity and will try to assert the basic taxonomy used in this dissertation. I work towards a definition of practical knowledge. I rely on what has been said earlier about the subject and I provide evidence from the findings of my own research. In this chapter I give the premises of knowledge, I contextualize practical knowledge and finally I theorize recipes. Recipes are conceived here as the basic units to convey practical knowledge.

The second chapter gives insights in the transmission dynamics of practical knowledge. In this chapter I will argue that the transmission of practical knowledge proceeds along complex patterns. I will compare these dynamics to a subterranean root of irregular growth: the rhizome, which has been theorized by Deleuze and Guattari.[5] The rhizome offers a metaphor suitable to address the complexity of practical knowledge transfers, because rhizomes are a multiple ramification system that can acquire multiple forms and have irregular growing intervals. Practical knowledge in early modern Europe travels as rhizomes. This second chapter of Part I is a continuation of the first chapter, and often has potential overlaps. This is due to the fact that the creation of knowledge part is intrinsically connected with the transmission of knowledge.

Also the third chapter has a strong connection to the first chapter. It discusses the profile of the users or interactors with practical knowledge. Also this chapter builds on the previous one, because knowledge transmission happens through actions of the human species. Textual transmission is taken into account in the second chapter, but in the third chapter the human interaction creates the context for the transmission. Books are written by groups, or by individuals. This chapter concentrates on individuals with a mediating function in the process of knowledge transmission.

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[5] I thank both Martin Procházka and Carlo Ginzburg for this suggestion; following my conference paper 'Adapting Common Knowledge: A Case Study of the Art of Limning', presented at the 2014 TEEME conference *Between Words and Worlds: Texts and Contexts in the Early Modern Period* in Prague. Cfr. Leemans 2014a.

Chapter 1.

The Construction of Practical Knowledge

The Breviarie of Health […] *Now newly corrected and amended,*
with some approved medicines that never were in print before this impression,
& are aptly placed in their proper chapters, by men skillfull in phisicke and chirurgerie

Andrew Boorde, 1587

1. The premise of knowledge: placing practical knowledge

The title of this PhD dissertation defines 'practical knowledge' as its main topic, moreover, practical knowledge in recipes books. As I mentioned above in the introduction, knowledge is located in the brain. Practical knowledge is knowing how to do something, or how to obtain something. This type of knowledge deals with practical daily things in the early modern European setting. Typical subjects are the treating of worms in children, or the making of ink, for instance. When this knowledge is transmitted from one person to another, the text takes the instructive form, whether in a conversation, a class, a letter, or a recipe book. This PhD thesis takes recipe books as a

means to get to the instructive literature or recipes.

The above standing quote from Boorde briefly contextualizes recipe books and their worlds. The quote is taken from the title page of a later edition of *The Breviarie of Health* (1587). One of the general truths about recipes books in this PhD thesis is that recipe books were composed. *The Breviarie of Health* (1587) recognizes this status in its title. The book was written by Andrew Boorde, who recognizes that he took recipes from other sources ('men skillfull in phisicke and chirurgerie'). Another truth about printed recipe books is that the knowledge often previously circulated in manuscript ('medicines that never were in print before this impression'). Another truth is that there is relation between practical knowledge and the exercising of this knowledge ('approved medicines'). In this precise book the knowledge is subjected to an editing process. Practical knowledge can be known through the study of recipe books, which are the main target in this PhD dissertation.

1.1 Shared bodies of knowledge and malleable categories

The range of subjects that could fall into the category of practical knowledge is extensive. Practical knowledge is a very broad category. Practical knowledge can be part of all kinds of bodies of knowledge: medicine, cosmetics, arts, alchemy, kitchen, gardening, husbandry, and many more. However, this way of categorical thinking is very specific to contemporary reasoning. I argue that in an early modern context there was more coherence between various disciplines and bodies of knowledge. I call the coherence between various disciplines and subjects shared bodies of knowledge. The concept of shared bodies of knowledge indicates that certain information, procedures or materials are relevant for different disciplines. Daniel Garber referred to this as the 'interconnectedness of knowledge'.[6] Here the idea of interconnectivity will be seen as something shared. The simple reason for this shift in terminology is because of the origin of my observations, which is different from Garber's. Garber investigates the origins of the understanding of the physical world in the early modern period; my observations are connected to the study of recipe books. For instance, cooking books often contain

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[6] Garber 2006, p. 21.

medical, artistic and all-purpose recipes. The concept of shared knowledge is that one part is apportioned to more recipients or branches of knowledge.

In what follows I will shed light upon two examples that show the concrete living conditions of practical knowledge. First, I will show that one particular ingredient has a multipurpose use, crossing various disciplines. Second, I will show that practical knowledge co-existed with other branches of knowledge. For the first case I will make a small introduction to the tree resin dragonsblood to demonstrate that different branches of knowledge in early modern Europe are connected. Dragonsblood is a raw material that contains a red pigment or colouring substance. Pigments are used to give colour to paint, ink, dyes, and cosmetics. In the case of dragonsblood, the red pigment was also used to colour medicines. It was freely available at the apothecary, but certainly not only for its pigment. Dragonsblood is spotted in recipes for the royal mouth hygiene and also in home obstetrics.[7] Often ingredients with mythical origins are easily dismissed as a quack cure. The legend goes that dragonsblood was formed out of a battle between an elephant and a dragon.[8] But here we see that what a pigment was for the painter, was a medicinal component for the apothecary or doctor. In line with early modern reasoning about the substance, current research still confirms the possible curative character of dragonsblood.[9] Knowledge about a procedure or a material was applicable in various disciplines in the early modern context.

The second case will show two things. First, it shows that instructions from various disciplines can appear in one single recipe book and second, that practical knowledge can co-exist with other types of knowledge in the same book or manuscript. As an example I will examine Wellcome MS 425, which gives a slightly more complex, but certainly realistic idea about the living conditions of practical knowledge in manuscripts. It contains two identified texts and three collections of secrets and recipes. The first identified text is a copy of *Pronosticatio* of Johan Lichtenberger. Lichtenberger was a 'certain learned mathematician'[10] who started to write horoscopes for several noblemen in the 1470's. *Pronosticatio* gives long-term predictions, until the year 1567. The importance of this work is the union of two traditions: astrology and prophecy.[11] It was

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[7] New York, The New York Academy of Medicine MS 1; London, Wellcome Library: Wellcome MS 7113, fol. 35r.
[8] Murphy 2004, pp. 2-3.
[9] Gupta 2008, pp. 361-380; Ran 2014, pp. 427-431.
[10] Description from the 1490's by Wolfgang Aytinger, see Green 2012, p. 44.
[11] Green 2012, pp. 39; 44.

firstly published in 1488 in Heidelberg both in Latin and German. The Italian vernacular version followed quickly in 1490, which was printed in Modena.[12]

The second identified text of MS 425 is *Le Régime du corps* of Aldrobrandino da Siena. Aldrobrandino (died before 1287) was a court doctor and writer at the court of Beatrice of Savoie (thirteenth century), for whom he made the compilation of *Le Régime du corps.* This French medical text has four parts: the first treatise deals with hygiene, the second with different parts of the body, the third with alimentation and the fourth with physiognomy. This fourth and last part is absent from manuscript 425. The original text finds its importance mainly in the linguistic area, because it is the first known medieval medical text in French vernacular, the current book is a copy of this text.[13]

The third part of manuscript 425 consists of three collections of recipes, secrets, and formulas. The first collection contains medical and kitchen recipes, the second contains art technical recipes, and finally the third collections gathers more magical formulas. This collection of art technical recipes is pervaded with all kinds of other branches of knowledge. Prominently present are medical recipes that at times carry a strong religious character. Furthermore there appear recipes about beauty and hygiene.

Wellcome MS 425 contains writings of different kinds. A prophetical text appears next to a medical text and they are followed by prescribed practical knowledge of different interests. A clear separation appears between the three parts of the book where the two authored texts are followed by recipes. But the separation of the recipes is not clear-cut: there is a strong overlap in the areas of interest. In this case the separation of knowledge is not strictly divided into well-defined categories. Wellcome MS 425 offers an example of co-existence of practical knowledge with other writings, and it also shows the co-existence of practical knowledge of different kinds.

The early modern sense of practical knowledge exceeds our appreciation of categories and goes beyond our sense of categorical thinking. Categories existed in early modern Europe, but in the case of practical knowledge it has more to do with the genre of writing than with the content or topic. Instructive writings, such as recipes, are good soil for practical knowledge. Recipes are grouped and form collections, despise their topic. Even if recipes appear sporadic in the margins or in a letter, the category of practical knowledge could still be applied. The coherence of secrets for salves and savouries for early modern people might have lain in the fact that they took the literary

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[12] Del Savio 2009, p. 3.
[13] See Bisson 2002, pp. 117-130.

form of a recipe. I argue that practical knowledge is a suitable category to talk about the wide range of knowledge disciplines that find their existence in instructive writings. I argue that practical knowledge is a category of its own.

1.2   Interdependent branches of knowledge

The connectivity, interdependency, and interconnectivity of various branches of knowledge was a fact in early modern culture. In the 2011 a conference on the transmission of artists' knowledge took place in Brussels, where Pietro Roccasecca brought a study of the Florentine *Accademia del Disegno*, which taught mathematics because of the study of perspective. At the Italian universities mathematics was used as a tool for astrology, which again served medicine.[14] Connections between the arts, the medical world and the pharmaceutical world have already been brought to light in today's scholarship. In the second chapter I will demonstrate transmission dynamics, which declare the coexistence of various subjects in recipe books. Here below I will point out how this coexistence was part of the early modern mind.

The application of various interdependent disciplines was a topic of discussion in early modern society. Leonardo Fioravanti (ca. 1517 – post 1583), a popular writer and medical doctor, said that surgeons had to know the art of woodcutting because they needed to be capable of making sticks for broken bones and crutches. They had to know the art of carpentry, because they needed to know how to make chirurgical instruments. They also needed to know the art of perfumery because they needed to make salves. And finally, they needed to know the art of alchemy because they needed to distil medicines.[15]

Another testimony can be found in *De Re Metallica* of Georgius Agricola (1494-1555).[16] Agricola was a German-born literary personage with a wide range of interests who enjoyed education in philosophical, medical, and natural sciences in various cities in Italy. Agricola begins his massive work with the reflection that he considers the 'metallic arts a whole', just like he considers the human body as a whole. He continues the analogy

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[14] Clarke, De Munck and Dupré 2012, p. 13.

[15] Eamon 2014, p. 169.

[16] *De Re Metallica* is an atypical source for my selection of works. It is written fully in Latin. It combines descriptive and instructive practical knowledge about mining. But even the instructive parts are quite different from normal instructions where the imperative is used. However it is a very rich source for my research as it contains several inputs about the nature of practical knowledge. The author recognizes that his publication is largely descriptive. He also announces that he hired illustrators for the images. The style changes during the course of the book are probably due to the long period of realization 20 years before it was finished. See introduction to: Agricola 1950 [1556].

saying that the various parts of the subject are like the various members of the body. This statement shows the coherence of the discipline itself.[17] Later on he continues to say that there are many misconceptions about miners as low-skilled workers. Agricola defends the miners and the mining industry with a knowledge-based argument. He sheds light on the various knowledge-related aspects of the work of a miner. The miner must be familiar with the geographical setting of a place, he must understand the rocks, soils, stones, veins, metals, underground etc. He must further have knowledge of assaying (experimenting) and smelting. Finally there are 'many arts and sciences of which a miner should not be ignorant'. These arts and sciences are medicine, astronomy, arithmetical sciences, architecture, and law. Agricola describes the miner as a well-round person who is at ease with various disciplines.[18] A further contextualization about the daily work is offered: Agricola says that in daily practice you will find that each miner has his or her specialization.[19]

What Agricola communicates is that one needs various disciplines, and knowledge of various subjects, in order to perform one single art. In Agricola's analogy, a single art is a complete body, and every related or subordinated discipline is a part of the same body. I conclude that in the early modern society there was a high degree of coherence between various knowledge branches.

2.   Defining practical knowledge

The precise terminology 'practical knowledge' carries a specific meaning. There are several other terminologies covering knowledge with practical nature such as: secret knowledge, technical knowledge, practice-based knowledge, silent or tacit knowledge, useful knowledge and common knowledge. What these have in common is that this kind of knowledge has a prescriptive or instructive nature. Different in nature to instruction and prescription is description.[20] Descriptive texts have a different scope than instructive and prescriptive texts. Description is more theorizing and therefore descriptive texts are not the target of this dissertation. For example, manuals used in universities describe a

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[17] Agricola 1950 [1556], p. xxv.
[18] Agricola 1950 [1556], pp. 1-3.
[19] The gendered twist to this phrase is entirely mine. Concerning female miners see Christina Vanja, *Mining Women in Early Modern European Society*, in Thomas Max Safley and Leonard N. Rosenband (eds.), *The Workplace before the Factory. Artisans and Proletarians, 1500-1800* (New York: Cornell University Press, 1993), pp. 110-117.
[20] Eamon 1994, p. 131.

topic; recipe books give instructions on how to do something. An example is the treatment of plants. In a descriptive work like a herbarium, the habitat and characteristics of a plant will be described and an illustrative picture will be given. A plant in a recipe book is just an ingredient that will be used in order to make something else. Prescriptive texts prescribe how things should ideally be in order to obtain the desired result. The common form for prescriptive or instructive texts is recipes and secrets, which will be discussed later on in this chapter in a more elaborate way. In what follows I will develop a piece about equivalent terminologies and subgenres of practical knowledge, exploring the possibilities and limits of the indicated fields.

2.1 Practice-based knowledge

2.1.1 Experience and experiment

Steven Shapin stated that 'knowledge […] does not stand outside of practical activity: it is made and sustained through situated practical activity'.[21] In this PhD dissertation practical knowledge is seen as practice-based knowledge, which touches the basics of scientific knowledge. Practical knowledge is built or constructed through practice and experience. Experience is defined in the OED as: 1) 'The action of putting to the test; trial' and 'a tentative procedure; an operation performed in order to ascertain or illustrate some truth; an experiment'. 2) 'Proof by actual trial; practical demonstration. to put in experience : to fulfil in practice'. 3) 'The actual observation of facts or events, considered as a source of knowledge'.[22]

Closely related to 'experience' is 'experiment'. It is generally accepted by contemporary research that 'experience' and 'experiment' are interchangeably used in early modern texts.[23] The OED says that an experiment is a tentative procedure or an operation performed in order to ascertain or illustrate some truth. According to the OED the etymology of 'experiment' can be traced back through the Old French 'experiment' to the Latin 'experimentum', coming from 'experiri', which means 'to try'. Peter Dear suggests that both categories are related to the Latin 'peritus', which stands for 'skilled' or

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[21] Shapin 1994, p. xxix.
[22] Quotes taken from the OED. The OED entry for experience contains eight explanations, of which I selected those most relevant for this argument.
[23] Dear 2006, p. 106; Eamon 2011, p. 30, n.18.

'experienced'. Dear adds that 'peritus' in its turn would be related to 'periculum', which carries the significance of 'trial' or 'test'. This would have been a practice in the mathematical sciences, which was started to be used at the beginning of the seventeenth century. It meant to indicate that an experiment was going to be carried out.[24]

William Eamon rightfully points out that the word 'experiment' is a problematic concept in an early modern context. He also noted the interchangeable use of both terminologies.[25] The corpus of texts that I studied for this PhD dissertation contains ample material to illustrate Eamon's statement. For instance, Eraclius tells that he learned to lay gold by experiment. Eraclius's writings are known through the compilation Jehan Le Begue made of art technical writings in 1431. The idea of 'experiment' looks more like our use of 'experience'. Eamon argues that authors did not expect their public to do actual experiments.[26] This is in line with the remarks made in this piece, that the word 'experiment' has the value of 'experience'. Eamon also notes that the words 'experience' and 'experiment' were used to give proof that they have been tried out. These words, among others were used to make a claim. The actual trying out or putting to action of a recipe is one of the key topics of practical knowledge. Intrinsically related are the truthfulness of the knowledge itself and the belief or the trust people had in them.

The position of 'experience' in recipe books I will illustrate through manuscript number 2861 of the University Library of Bologna, hereafter referred to as the Bolognese manuscript.[27] The writer of the Bolognese manuscript is concerned with distinguishing artificial from naturally occurring azure. One of the recipes is created to provide the reader with a procedure to test the azure. The first way is testing the colour of the ashes of the azure. If the ashes do not change colour it is an azure of excellent quality. If it turns black it is of little quality, if it turns whitish it is artificially made. The other way to find out about the status of the azure is 'per experientiam'. One should rub azure between the fingers when applying clean water to it. When the azure immediately sets into the cracks of your hands, then it is very good azure.[28] In the Bolognese manuscript the word 'experience' indicates an 'operation performed in order to ascertain or illustrate some truth', conforming to the OED definition. Another recipe in the Bolognese manuscript to distinguish ultramarine azure from the artificial one, announces

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[24] Unfortunately Dear left the connotation to 'periculum' or 'peril' untouched in his work. Dear 2006, p. 106.
[25] Eamon 2011, p. 30, n.18.
[26] Eamon 2011, p. 29.
[27] Bologna, University Library, MS 2861.
[28] Merrifield 1999 [1849], pp. 384-385.

in the recipe title that one can determine 'per experientiam et examen' or through experience and examination. Clearly in early modern recipes books the word 'experience' is used as a procedure where the knowledge is executed.

Another dimension of 'experience' in early modern practical knowledge is often underexposed in secondary literature. Experience can be used in a sense of gaining a larger familiarity. This of course is the consequence of putting practical knowledge into action. One becomes an experienced person by testing out practical knowledge, one time or multiple times. To understand if experience indicates also the familiarity with a recipe, the role of the consumer should be studied. Secondary studies do not frequently study the consumer of the recipes as the subject that has to gain experience. A sixteenth century Venetian manuscript with glass and crystal recipes may come to aid here. One of the recipes for crystal points in the direction of the consumer by giving the advice that 'actual practice is everything, because there are no quantities or rules'.[29] This rich piece of information is of use in the current PhD dissertation for various questions. The context of this phrase is to be understood as supplementary information to the practice of adding manganese to the already melted glass. This is done to subtract colour from the glass. The advice is precisely to add manganese 'at your discretion', 'little by little' and 'not too much'. Too much of manganese will turn the melted glass purple, the recipe explains. To add something at one's discretion means that the consumer must judge the right quantity. Then there follows a word on the modality of adding manganese: not all at once but the desired quantity will be added in reduced quantity and in various or distinct moments: 'little by little'.

The interesting part of the recipe for crystal lies in its admonition that 'actual practice is everything'. This offers support to the somewhat loose instructions of the recipe. The recipe holds that through practice or experience one is able to judge properly. Practice, here, is the consequence of experience or trial. It signifies a larger set of experiments and experiences. Practice brings the consumer a larger familiarity with the execution of procedures. The nature of practical knowledge is such that it can be put into practice. Primary sources contain information about the putting into practice of written procedures or written knowledge. Practical knowledge is practice-based. Words and claims about experience and practice, both understood as belonging to the author and the consumer, form a bridge between the textual dimension and the dimension of concrete life.

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[29] Wheeler 2009, p. 16.

2.1.2 Theory and practice

It's a commonly held belief that theory and practice are opposite types of knowledge. For a long period of time, even contemporary scholars operated affirming this notion. A common approach would be to study theoretical and experimental/practical aspects of a discipline completely separately. (Einstein the theorist, Rutherford the experimentalist, for example.) But in the latter part of the 20th century, that began to change; in 1970, for example, Edgar Zilsel argued that modern science was in fact only made possible by collaboration between scholars and craftsmen: a fusion of theory and practice.[30] According to Steve Walton, the Dominican Robert Kilwardby (c.1215–1279) was the first medieval scholastic denying the difference between theory and practice, implying that during the Middle Ages theory and practice would go hand in hand.[31] It is only more recently that the interconnectiveness of theory and practice is recognized again.

Even during the early modern period the separation between theory and practice was not sharply divided. Pamela O. Long, in her article on trading zones, identified several writers of technical manuals that do not disconnect theory and practice. For instance the Italian shipwright Vettor Fausto (ca. 1480 – ca. 1546) was appointed public lecturer of Greek in Venice and he constructed the replica of the Greek fighting ship called *quinquereme*.[32] He seemed to be in full possession of his technical and theoretical skills. The writings of the astronomer and physician Galileo Galilei (1564 – 1642) also dealth with practical challenges of the construction of large galleys for instance.[33] Among the writers Long discusses is also Niccolò Tartaglia, teacher of mathematics and author of *Nova scientia* (1537) and *Quesiti et inventioni diverse* (1546), in which he works out both practical and theoretical issues.[34] Long concludes that the exchange between workshop-trained practitioners and university-trained theoreticians and their writings proliferated trade zones in the sixteenth century. These trade zones are arenas with room for influence, where the learned taught the skilled and the skilled taught the learned.[35]

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[30] Eamon 1994, p. 8
[31] Walton 2003.
[32] Long 2012, p. 13.
[33] Renn and Valleriani 2001, pp. 481-503.
[34] Long 2012, p. 13.
[35] Long 2012, pp. 19-20.

2.2   Secret knowledge

Everyone loves a secret and everyone has a secret,

which is why books of secrets continue to fascinate us.

William Eamon[36]

2.2.1 Books of secrets: a frequent literary genre of practical knowledge

Practical knowledge in early modern Europe found expression in different kinds of textual genres such as treatises, instruction manuals, recipe books, commonplace books, books of knowledge, and closet books.[37] One particular genre is the book of secrets, which contains practical information in the form of recipes or secrets. It could be argued that printed books of secrets became increasingly popular in the second part of sixteenth century.[38] Eamon argues that books of secrets appeared for upper and middle class, but also for the common reader.[39] Books of secrets contained different branches of knowledge, such as technical information about alchemy, dyeing, metallurgy, making beauty products, household, and medical information etc.[40] Most of the main scholars on books of secrets study the printed ones: I will also discuss the possibility of analysing manuscripts in this regard later on.

One of the first scholars, if not the first, who defined the concept of books of secrets is John Ferguson (1838-1916), a professor in Chemistry at the University of Glasgow.[41] Ferguson's interest sprouted from his work on the history of science in Britain. He published several articles on the histories of inventions and book of secrets, which are collected in the eponymous edition, for the Transactions of the Glasgow Archaeological Society. Although the subject is quite clear in these articles, there is an evolution in his approach during the different articles. The first article of 1896 focuses on 'books of technical receipts, of so-called secrets', which he classifies in five groups, retaining these subdivisions as an imperfect classification system. Ferguson distinguishes 1) secrets of nature or natural history; 2) natural magic; 3) chemical, pharmaceutical, and

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[36] Quote from Eamon 2011, p. 46.
[37] These last two terms are terminologies used by Allison Kavey, whose work will be introduced shortly.
[38] Eamon 1994, pp. 10.
[39] Eamon 1994, p. 234.
[40] Eamon 2000, pp. 145-146.
[41] Weston 2004.

medical secrets; 4) physiological secrets, and finally 5) technical or art secrets.[42] In his last publication for the Glasgow Archaeological Society in 1914, he entitled the article 'Books of Secrets', using the terminology more confidently. He describes books of secrets as having diverse sorts of subjects, appearing in all languages, sizes, qualities of paper and binding and having a wide public. He further rationalizes that secrets denote receipts containing personalized skills and knowledge. Ferguson describes that books of secrets are infrequently put into print before the sixteenth century.[43] Ferguson's greatest contributions were related to the defining of books of secrets as a distinct genre and listing book titles.[44] Ferguson's definition and description of books of secrets was a process, which was completed by the end of his life during the 1920s.

However, it would take eighty more years for the subject to be profoundly discussed.[45] With his 1994 publication *Science and the Secrets of Nature, Books of Secrets in Medieval and Early Modern Culture* and several articles on the topic, William Eamon is the main authority on books of secrets. Eamon sees books of secrets as a genre of scientific writing belonging to a more popular category of science. He describes them as 'How-to books'. Secrets in his work are 'private experiments of individual practitioners'.[46] Books of secrets are thus the recording and communicating of these experiments. Eamon interprets books of secrets as a missing link between the medieval form of experimenting and the Baconian way of experimenting.

Printed publications in vernacular peak in the sixteenth century. For this reason Eamon refers to this period as the 'century of How-to'.[47] The method Eamon applies while studying this specific type of literature can be divided in three pillars: the content,

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[42] Ferguson 2005 [1896-1914], pp. 1-6.

[43] Ferguson 2005 [1896-1914], pp. 5-8.

[44] In contemporary scholarship John Ferguson is often recognized as the first scholar writing about books of secrets. In his own writing Ferguson declares that no work had been done in English on the subject. However, he recognized predecessors who have written about the subject, being German and French scholars. In the footnotes of his first article he refers to Backmann's *Beyträge zur Geschicthe der Erfindungen*, which are five volumes published between 1786 and 1805; the work of Antoine Yves Goguet entitled *Origine des loix, des arts, des sciences, et de leur progrès chez les anciens peuples*, which is published 1758; the work of Johann Poppe, entitled *Geschichte der Technologie*, which are three volumes published between 1807 and 1811 and finally the work of Karl Karmarsch, *Geschichte der Technologie* of 1872. Cfr. Ferguson 2005 [1896-1914], p. 4.

[45] The precise terminology was used in the period but remained without further theorizing. To illustrate that this term was of common use I rely on an example of an early twentieth-century publication in the field of bibliography. The first chapter of the book *Bibliography of Books in the English Language Related to the Art and History of Engraving and the Collecting of Prints* (1912) is entitled *Books of Secrets and Mysteries*. The main aim of this publication is the description of rare books concerning engravings. Since this is a bibliographical study, mainly physical characteristics of prints are discussed. In this work there is little room for the theorizing of the genre of books of secrets. Cfr. Levis 1912.

[46] Eamon 1994, p. 9.

[47] Eamon 1994, pp. 126-133.

the authors and the audience of books of secrets. Eamon benefits from the work of Elizabeth Eisenstein regarding printing and popular culture and from that of Thomas Kuhn regarding the scientific revolution(s).[48] In a later writing Eamon distinguishes books of secrets from household recipe books by the proportion of alchemy present, which is larger in books of secrets.[49]

Eamon's publication of the *Science and Secrets of Nature* triggered a new field of study and as a consequence many more publications on its topics. A notable publication is *Books of Secrets. Natural Philosophy in England, 1550-1600* from Allison Kavey. Kavey finds in compelling that recipes are common to books of secrets. She retains the form of the recipe ideal 'for books of secrets because they packaged unfamiliar and exotic materials and ideas in a familiar and accessible form.'[50] Kavey covers the second half of the sixteenth century with her research and she denotes a decline of the market position of books of secrets during the seventeenth century. Where Eamon sees the books of secrets as a bridge between medieval secrecy literature and the literature produced by the scientific revolution, Kavey proposes that books of secrets were replaced by two other genres: books of knowledge and closet books. Books of knowledge are inexpensive books that pretend to predict and explain the secrets of nature. Kavey describes closet books as a seventeenth century flourishing genre that is oriented to 'cultural expectations and personal conduct'. She points out that the link between books of secrets and closet books can be found in Richard Jones' 1573 print *The Treasurie of commocious Conceits, and hidden Secrets and may be called, The Huswives closet, of healthfull provision*. Where books of secrets address merely practical knowledge about nature, closet books deal with personal conduct as well.[51]

As stated before, my research involves books of secrets, as they are a steady genre of books containing practical knowledge. However, I explicitly address manuscripts as well as printed books. And my time frame extends past the second half of the sixteenth century. So far I have not come across a definition of books of secrets that includes manuscripts, although this would not be unthinkable. My contribution is the expansion of the genre of books of secrets, including both the printed and handwritten genre. Books of secrets are compilations of secrets, recipes and formulas. The printed examples

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[48] Eamon 1994, p. 6.
[49] Eamon 2011, p. 35.
[50] Kavey 2007, p. 98.
[51] Kavey 2007, pp. 156-160. My question is if closet books were simply books of secrets in a different jacket. I wonder if the recipes are not the same and if the difference lies in the packaging of the content. Perhaps the title and preface to the reader has a shift, but this is the topic of another research.

come forth out of a manuscript tradition. There are a lot of similarities between printed book of secrets and manuscripts containing all-purpose recipes in terms of content and form. Ideally a printed book of secrets is a collection of recipes with a title page and a concluding part. Often manuscripts present a work in progress; they can be left uncompleted. They often have an index that is open for further compilation when the manuscript receives new recipes. In the case of manuscripts, the definition needs to be open to variations.

Printed books of secrets form a significant part of this research, but the formulation of practical knowledge includes a broader basis of primary sources, involving both handwritten and printed material. For example, theoretical manuscripts might contain practical information in the margins or on a fly leaf. Since the aim is practical knowledge, these kinds of scribbles can be included as they fit perfectly in the rationale of this PhD project, which includes the consumption of and interactions with practical knowledge.

2.2.2 A taxonomy of secrets

Books of secrets present themselves as books containing secrets. But what precisely is a secret? The word secret comes from the Latin noun *secretum* which indicates something hidden or set apart. *Secretum* is the past participle from the Latin verb *secernere*, which mean 'to sift apart or separate with a sieve' or 'to divide'.[52] The early modern significance of a secret is close to today's common use of the word. When we use it, we indicate information that has been withheld from one or more people. Elaine Leong and Alisha Rankin who edited the volume *Secrets and Knowledge in Medicine and Science, 1500-1800* note that the use of the word 'secret' or *segreto* in early modern Italy seems to equal the word 'recipe' or *ricetta*.[53] Eamon notes that while a secret is somebody's personal property, a recipe does not belong to anyone.[54] A recipe is common property. A recipe is a textually useful form for the communication of knowledge. Passing a recipe from one person to another means that a new person will engage with it and put it to his or her hand. The contemporary use of the words 'secret' and 'recipe' do not mean the same thing,

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[52] OED; Long 2001, p. 7.
[53] Leong and Rankin 2001, p. 9.
[54] Eamon 1994, p. 360.

however, in early modern instructive literature they might be used interchangeably. The words 'secret' and 'recipe' in daily use were certainly interchangeable. I conclude that in the early modern context the words 'recipe' and 'secret' assumed the same significance.

As already explained, a secret could indicate withheld information or it could be used for a recipe. The word secret has multiple significations. Eamon developed a taxonomy of secrecy. He distinguishes three types of secrets. The first two types of secrets are typical for a medieval setting: 1) epistemological and 2) social secrets. The third type of secret that Eamon distinguishes is an epistemic one and is closely connected to the sixteenth century: 3) epistemic secrets.[55]

First, epistemological secrets are the secrets of nature. It was believed that they are a fact in the order of nature and they are essentially impenetrable. Books of secrets under medieval norms were referred to as *libri secretorum* (books of secrets) and they contained compilations of recipes of various kinds, from practical medical wisdom to magical formulas.[56] A very good example of this branch of medieval literature is the *Secretum secretorum* or the 'book of the secret of secrets'. This is the pseudo-Aristotelian work *Ktab Sirr al-Asrar*, which according to Lynn Thorndike is 'the most popular book in the Middle Ages'.[57] It was a standard encyclopaedic work containing subjects such as medicine, astrology, physiognomy, alchemy, numerology and magic.[58] The *Secretum secretorum* discusses the state of knowledge, moreover the existence of public and secret knowledge:

> '[…] one of them is evident and apparent, and the other is secret and mysterious. With the former I have already acquainted you […] The secret means is one peculiar to the saints and sages whom God has chosen from amongst His creatures and endowed with His own knowledge. And I shall impart to you this secret as well as others in certain chapters of this book, which is outwardly a treasure of wisdom and golden rules, and inwardly the cherished object itself. So when you have studied its contents and understood its secrets you will thereby achieve your highest desires and fulfill your loftiest expectations.[59]

This piece demonstrates that secret knowledge was esoteric knowledge or knowledge revealed by God to a select group of people that had to cautiously guard this

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[55] Eamon 1994, p. 11.
[56] Eamon 1994, p. 16.
[57] Citation from Thorndike 1922, pp. 248-249.
[58] Eamon 1994, p. 45.
[59] Citation taken from Eamon 1994, p. 46.

information. Making secret knowledge public signified breaking the celestial seal.[60] The *Secretum secretorum* is a prime example of medieval epistemological secrecy. During the early modern period epistemological secrets or secrets of nature declined. Among the sources that I investigated there is the medieval compilation *De Diversis Artibus* (On Divers Arts), attributed to Theophilus. The medieval compilation *De Diversis Artibus* was still successful in the early modern period. Several of its recipes appeared in early modern printed and handwritten sources.[61] The Viennese manuscript of Theophilus writing contains a seventeenth century title page describing the author as a monk of the Benedictine order. But the same page contains another seventeenth century inscription saying: 'Qui et Rogerus'. It is believed that this inscription may refer to Rogerus von Helmarshausen, a historical metalworker who flourished around the turn of the twelfth century.[62] This manuscript is interesting for study because it reflects medieval knowledge circulating in the early modern era. In fact, it contains an instance of epistemological secrecy in the introduction:

> 'whoever are you, dearest son, whose heart God has inspired to investigate the vast field of the divers arts and to apply your mind and attention to gather from it whatever please you'[63]

The godly aspect in recipes appears in early modern manuscripts, but most often in manuscripts in the same condition as *De Diversis Artibus*, meaning that the knowledge was copied over many generations.

The second type of secrets Eamon distinguishes are social secrets, which are man made. A social secret is the purposefully suppressing of information for protectionist reasons. Again the *Secretum secretorum* contains a textual witness illustrating social conventional secret keeping:

> 'I am revealing my secrets to you figuratively, speaking with enigmatic examples and signs, because I greatly fear that the present book might fall into the hands of infidels and arrogant powers, whereby they, whom God on high has deemed undeserving and unworthy, might arrive at that ultimate good and divine mystery. I would then surely be a transgressor of divine grace and a violator of the heavenly secret and occult revelation. Because of this, I expose this sacrament to you in the manner in which it was revealed to me, under the seal of divine justice. Know

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[60] Eamon 1994, p. 48.
[61] Gearthart 2010, pp. 256-263; 331.
[62] Theophilus 2013 [1963], p. xv-xvi.
[63] Theophilus 2013 [1963], p. 12.

therefore that whoever betrays these secrets and reveals these mysteries to the unworthy shall not be safe from the misfortune that shall soon befall him.'[64]

In this part the Pseudo-Aristotelian writer expresses that the persons selected by God to receive these secrets, should hold on to them and not make them public. An extrinsic motivation is given: that of fearing misfortune. This episode is not isolated from the divine atmosphere, but the urge to keep secret information within a certain circle is quite clear. This same attitude is found in early modern communications about secrets. For instance, the German Electress Anna of Saxony (1544 – 1577) communicated in early January 1563 some of her medical secrets to the Duchess Anna of Bavaria. In her letter she expresses some concern:

> 'Now that we have trustingly given Your Dearest nearly all of our most secret arts […] we ask that […] if You Dearest knows anything particular and special, that she not keep it from us […] and we will preserve it for ourselves alone in all secrecy. […] your dearest not make the [secrets] she has received from us common.'[65]

In this case the secrecy is a human convention, outside of the realm of the divine. The information given is information dear to the consumer; the request that follows underlines the protectionist attitude over this knowledge. These attitudes started long before the medieval times and for the most part survive the early modern period. Social secrecy is of all times.

The third type of secrets Eamon distinguishes are epistemic secrets. According to Eamon, these secrets arise in the sixteenth century. The sixteenth century is characterised by a hunt for secrets, a topic that will be discussed in the third chapter of the first part. In this setting secrets and experimentation are turned into commodities. He goes beyond the boundaries of academia, the scientific revolution and also beyond the boundaries of a so-called 'revolution from below' or from common people or lower classes in society.[66]

For Eamon the year 1555 is a key year for literary secrecy traditions. In this year the Latin *Secretum secretorum* was published for the last time, in Naples, by the editor Francesco Storella. Eamon takes this last publication as the closing of the epistemological tradition of books of secrets. In the same year appears for the first time the vernacular *Secreti del reverend donno Alessio Piemontese*.[67] This last work would be the starting point for the tradition of epistemic secrets. This tradition of secrecy involves

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[64] Eamon 1994, p. 47.
[65] Citation taken from Leong and Rankin 2001, p. 2.
[66] Eamon 1994, p. 11.
[67] Eamon 1994, p. 134.

vernacular publications for a broad public.

2.2.3 Professional secrets

Eamon's taxonomy is a very interesting scheme to reflect about secrets. However, some terminologies might not immediately find a position within the threefold scheme. The terminology 'trade secrets' or 'craft secrecy' is a very good example. A lot of secondary literature addresses this group of professional secrets when dealing with practical knowledge. I argue that Eamon's taxonomy could be enlarged with the addition of professional secrecy.

Trade secrets are instructions or sets of procedures that are known to a select group of people, connected through their trade or craft. The hidden or secrecy aspect of this knowledge can be explained in two ways. First the essence of this knowledge was the expertise and technical know-how. Second, in order to protect the craft and trade, one had to guard the knowledge that lead to successes in the trade. The profession's livelihood fell or stood with certain of these secrets.[68] The reason why trade secrets fall outside of Eamon's taxonomy is because trade secrets are professional secrets of all times. Professional secrets could be subcategorized to social secrets, but they are certainly not exclusively medieval and they have a precise professional scope. Protecting a trade gives an economic factor or even value to secrecy. The level of protectionism for trade secrets of all times could be considerably high. Jo Wheeler expresses the idea that the real secret lay maybe not in the textual recipes but rather in the expertise of the workers.[69] Examples of the importance of expertise can be found in the history of Venetian glass and crystal production. Venice was famous for its glass and crystal; the latter being perfected around the middle of the 15th century and known as Venice's showpiece. Research demonstrated that in the glass- and crystal-producing professional environment, actions were taken in order to protect the knowledge of these precious procedures. In what follows I will enlighten with an example.

The archduke Ferdinand II of Austria (1529–1595), was interested in having glass production at his court. The glasshouse was part of Ferdinand's castle Schloss Ambras. For this enterprise he appointed an Italian glassmaker from the province of Liguria as an

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[68] Wheeler 2009, p. 7.
[69] Wheeler 2009, p. 17.

undercover merchant in Venice with the purpose of stealing secret information.[70] The need to send a spy tells something about the availability of specialist information. The Venetian guild for glassworkers prohibited its workmen to work outside of the Venetian dominion.[71] They secured their market position by keeping the specific expertise isolated. Knowledge transfer was punishable. Guild regulations fined or temporarily banned craftsmen who worked in other cities.[72] Four Venetian glassmakers who, through De' Medici employment, defected to ply their trade in Florence ended up in jail and were condemned to the galleys.[73] The protection of expertise is an indication for the existence of trade secrecy. Here trade knowledge or professional secrets are categorized under secret knowledge. As mentioned in the opening of this part, all the denominations discussed here have some sort of connection. The study of the glassmakers' business connects several types of knowledge. As discussed in this section, glassmakers have possession of trade secrets, but the nature of their trade is mainly technical. It is this which will be discussed in the following section.

2.3   Technical and technological knowledge

Building on the previous example of glassmakers, I point out that the knowledge they used was mainly technical, such as the procedure how to blow glass. This technical knowledge has an affinity with practical knowledge, because the procedure is both technical and practical. Practical and technical knowledge have been considered to be related for a long, long time. In Antiquity, there were four types of knowledge: *episteme*, *techne*, *metis* and *gnosis*.[74] Techne or τέχνη is practical expertise and is used in an instrumental way; it was often confused with manual labor.[75] Brooke Hindle wrote that 'technology seeks means for making and doing things'.[76] Technological knowledge is the kind of knowledge that contains information about the techniques to make or obtain something which is practical in nature. In a lot of instances the denominators 'technical' and 'technological' knowledge are used interchangeably. Scholars of technological

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[70] Wheeler 2009, p. 7.
[71] Eamon 1994, p. 82.
[72] Long, 2001, pp. 90-91.
[73] Wheeler 2009, p. 17.
[74] NDHI 2005, p. 1199.
[75] NDHI 2005, pp. 956; 1199.
[76] Hindle 1966, pp. 4-5.

knowledge use different schemes for analysis. Two somewhat dated publications offer nonetheless interesting insights into how to categorize technological knowledge.

The first method I will discuss is the one of Walter Vincenti, who introduced the idea of dividing technological knowledge into categories. He distinguishes three forms of technological knowledge: 1) descriptive, 2) prescriptive, and 3) silent knowledge.[77] First, descriptive knowledge would communicate factual information about the materials and tools, and gives technical information. It offers a framework for the conduction of a certain action. Of these three types of knowledge described by Vincenti, descriptive knowledge is closest to scientific knowledge. However, descriptive knowledge is different from scientific knowledge because of its underdeveloped theoretical framework.[78] Second, prescriptive knowledge would be closely related to experience-based efforts to achieve greater effectiveness. Third and last: tacit knowledge is implicit knowledge, which is often based on personal judgment and therefore difficult to communicate. Both prescriptive and tacit knowledge are related because they are experience based.[79]

A second way of categorizing technological knowledge is the one used by scholar R.E. Frey. According to Frey, four different levels of technological knowledge should be emphasized. The first basic level would be a non-discourse level of technological knowledge. It involves demonstration, observation, imitation, and trial and error. This is the level where the putting into action of knowledge by showing is the way to make it more explicit. The next level requires reason, technical maxims, rules, recipes, and procedures. Further on come the descriptive laws and finally the last level is placing these laws into a framework.[80] The level of discourse increases together with the level of technological knowledge. This means that for Frey discourse is a signifier in the hierarchy of technology. In this dissertation the study of practical knowledge is canalized through the study of recipes. Only rarely are recipes thickened with theoretical discourse. In fact, this PhD dissertation focuses on the two first phases as described by Frey: the practical part and the part where the practice is disseminated, through the written form of the recipe.

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[77] The category of silent knowledge will be discussed separately as a potential characteristic of practical knowledge, i.e. practical knowledge can be silent.
[78] Herschbach 1995, pp. 34-35.
[79] Herschbach 1995, p. 35.
[80] Herschbach 1995, pp. 36-37.

2.4   Silent or tacit knowledge

The concept of tacit knowledge was introduced by scientist and philosopher Michael Polanyi in his work *Personal Knowledge* (1958). His famous formulation 'we can know more than we can tell' became exemplar for the concept. Polanyi argues that all knowledge is either tacit or rooted in tacit knowledge.[81] An important characteristic of silent knowledge is that it cannot easily be communicated in words. Tacit knowledge is knowledge that is not easily transferred in a textual way. This goes hand in hand with the experience aspect of practical knowledge. A prime example is the learning of a language. One might perfectly master the grammar and the vocabulary of a language through the study of texts only, but certain things will be lacking, such as pronunciation, intonation, and the body language that goes together with the language. These things are to be seen and heard in real life: they cannot easily be transmitted through texts.

A lot of recipes that appear to be dysfunctional could be impracticle due to silent knowledge.[82] A specialist might be able to perform the instruction based on previously acquired knowledge and experiences. A person who is new in the field might not be able to bring the instruction to a good end and will not obtain the desired end result.

Silent knowledge is a very interesting phenomenon for instructive literature. Silent knowledge is existing knowledge that remains unregistered and unspoken. Silent knowledge is as ephemeral as the oral way of transmitting knowledge. But there is a big difference between both. Silent knowledge fills in where the oral method of transmission cannot reach. Silent knowledge can become more explicit through demonstrations or through other visual means. Cennino Cennini wrote that you learn through looking.[83] This is a way in which silent knowledge can be transmitted.

Occasionally recipe books contain a written approximation of silent knowledge. Sometimes a procedure is being given an extra dimension through careful descriptions. Because this exact knowledge is missing in other similar recipes, one could talk of silent knowledge being made explicit. When knowledge is explicit, it is no longer silent. We can only conclude that this exact information could potentially be silent in comparison with equivalent recipes where this same information is repeatedly missing.

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[81] Polanyi 1966, p. 4.
[82] The functionality and dysfunctionality of recipes will be discussed in part three of the current chapter.
[83] Cennini LXXI.

Pamela H. Smith published on the tricks of the trade of metal workers. She concludes that all five senses were used in service of the measurements in the recipes. To identify vitriol or rock alum, one has to taste. Vitriol should be sharp and pungent to the tongue and Rock alum should be bitter with a certain 'unctuous saltiness'. Or one should hear cuttlefish bone 'cry' when put close to the fire as a sign of being dry.

Silent knowledge is a dimension of practical knowledge that should always be kept in consideration when dealing with it. It is at play in the transmission of practical knowledge because it is principally communicated without words. For this reason silent knowledge might explain certain irregularities or lack of information in recipes.

2.5   Useful knowledge

The umbrella term practical knowledge covers what today in scholarly research is called 'useful knowledge'. In the last decade the concept of useful knowledge has been used in an academic context where economic growth and technological change are studied. The main scholars who adhere to this point of view are Simon Kuznets, Joel Mokyr, Larry Epstein and Ian Inkster. Epstein determines useful knowledge as experiential knowledge. Mokyr subdivides useful knowledge into propositional and experiential knowledge. Inkster identifies useful knowledge to be reliable knowledge.[84]

According to the OED, things, actions, or practices are useful when they are 'capable of being put to good use; suitable for use; advantageous, profitable, beneficial'. There are implications for the use of this terminology; it points to the correctness, effectiveness, and reliability of information. For instance, Karel Davids explicitly excludes 'fraudulent recipes' in his writings about useful knowledge.[85]

Two interesting questions turn up in the studies of useful knowledge. First, Karel Davids poses the question 'Who defined 'useful knowledge' in Early Modern Times?' and defines the gatekeepers of knowledge. Gatekeepers dealt with an enormous flux of knowledge; meaning they went through procedures of 'selecting, translating and focusing'. This could happen on both on a formal or informal level; and with a two-ways dynamic: inside information flows out and outside information flows in. In his article Davids focuses on three categories of people offering a broader and 'a more inclusive view of usefulness' that 'ceased to matter as gatekeepers of knowledge' by or during the

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[84] Inkster 2012, p. 1.
[85] Davids 2012.

eighteenth century: women, clergymen, and virtuosi. This was due to changes on both the micro and macro level of social support for knowledge.[86]

Davids argues that between the mid-sixteenth century and the end of the eighteenth century there is a 'slimming-down' of the concept of usefulness, which makes it less broad and more specific. During the first half of the eighteenth century, there is a tendency to produce knowledge for humanitarian and useful purposes rather then for an elite intellectual class and truth.[87] Second, in the conference *The Making of Useful Knowledge* Jonathan Harwood's paper was entitled: 'Useful Knowledge but for whom?', in which he discussed the impact of an agricultural model in Southern Germany between 1890-1920.[88] He concludes paradoxically that claims of usefulness are not always critically used. Knowledge becomes non-useful, for instance, when there is a failure in communication.

William Eamon writes about the usefulness of books of secrets. He determines that their usefulness for the early modern reader was connected to the actual use of the books. His 'useful' refers to how people used books of secrets. He concludes that books were useful to people because they were actually used; their usage is testified to by the plenty worn out copies or by marginal commentaries. Another way in which books of secrets were useful is that they required people to experiment themselves, even against the advice of the author. But these books also offered specialist knowledge to a wide public and their secrets guaranteed the predictability of nature. Eamon takes a large section of the spectrum of modes of use as the reason why and how printed books of secrets were useful to the early modern public.

Useful knowledge is subset of practical knowledge. It has been understood as individual units of knowledge that are useful or serve a purpose, but useful has also been understood as how a genre can be useful to its public.

2.6   Common knowledge

The word 'common' has a broad range of meanings. Raymond Williams points out that 'common can be used to affirm something shared or to describe something ordinary'. This definition is particularly useful for the concept of common knowledge, which would

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[86] Davids 2012, pp. 73-76; 80.
[87] Davids 2012, pp. 71-72.
[88] Harwood 2014.

be knowledge belonging to an extremely large group of people. Common knowledge can be practical in nature, as much as it can appear with different characteristics. Common knowledge is simply things that everybody knows. Applied to practical knowledge it has to be said that not all practical knowledge is common knowledge. Not all practical knowledge is common to a larger group of people from the same society. We have seen that a niche of practical knowledge is specialist knowledge, meaning that it should be highly specialized and therefore uncommon to a larger group of people. Further it has to be noted that there is an overlap between common knowledge and silent knowledge. Some general truths are so common they were left unspoken.

Common knowledge can be practical in nature, and needs to be kept in mind when dealing with the topic. Practical knowledge can be highly specialized and secret, but it can also be knowledge that belongs to all people. The second chapter of Part I will explain that highly specialized knowledge out of professional environments gets into wider circulation.

3.   Theorizing practical knowledge[89]

To study practical knowledge this PhD dissertation focuses on the smaller nuclei that build practical knowledge, which are recipes. Recipes or instructions are discursive manifestations.[90] To study the rhetorics of recipes one studies the art of how this language phenomenon is used. It comes with rules, conventions, and compositional techniques in order to effectively persuade or influence the other.[91] As will be discussed in this chapter, the 'other' is a non-conventional concept in the world of recipes, as the author and consumer can be one and the same. For research today, the study of recipes puts the user central. Users can be author, writer, reader, practitioner, and consumer at the same time. In what follows I will discuss the origin of practical knowledge and its written quality, the form and convention of those writings, and finally the function of the writings.

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[89] I thank TEEME professor Martin Prochazka for his suggestion to see recipes as discourse.
[90] Greimas 1979, p. 2.
[91] OED.

3.1   Knowledge (re) production

This part will occupy itself with the initial phase of knowledge production. Practical knowledge is experienced based, as discussed earlier. The creation of practical knowledge is a process that involves experience-based standards and a transmission process. As seen in the introduction Bouza determined the communicative trinity. The information flow passes from one person to another in oral, visual, or written form. This part will focus on the recipe as a written text.

3.1.1   Why write?

Another aspect that will be left to the second chapter is the modalities of transmission, described by Fernando Bouza as the 'communicative trinity'.[92] This triangle of oral, visual, and written communication is perfectly adaptable to the transmission of practical knowledge. The subject of this research is textual practical knowledge, which finds it ways through written recipes. However, knowledge or recipes could be explained in words or shown in a visual way through demonstration. The question here is, why would people write recipes down?

Pamela H. Smith, one of the authorities on books of secrets, asks the question in her equally named article: Why write a book? Through the study of recipe books she answers that around 1400 habits changed for a knowledge-keeping group; this is when they finally started to write down their knowledge or what she calls the 'practical moment'. This is presented as a historical phase where the self-consciousness of the artisan starts to be expressed. Manifestations are for instance self-portraits and writings. The reason why to write she finds in the dedicatory parts of the writings of Michael of Rhodes and Cennino Cennini. Writing a book was an 'attempt to move up the intellectual and social hierarchy'. This fits in the historical context where rulers were in need of artisans because of war technologies and representations of power.[93] But in both cases, the manuscripts claim authorship and have a dedication. This is not representative for all the technical writings.

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[92] Bouza 2004, p. 11.
[93] Smith 2010, pp. 26; 28-30; 33; 35; 39; 47.

However, that the writing down of practical knowledge would be class related is also heard in theory about eating and cookery. The practice of registering cooking procedures became regular later in the 15th century. It was not meant for the cook of a household but rather for the master or mistress of the household. In short, an elitist product, more a library product than a kitchen product. The specifications of a certain dish, such as quantities or the process, were things a cooked learned through apprenticeship.[94] The need to start writing and producing recipe books is seen as class-bound in food studies.

Here my focus lies on what the early modern authors and writers of recipe books themselves have to say about that. Why textually record technical knowledge? Why write? To answer these questions I will not only rely on recipe books, but also other early modern literature. For instance the Spanish friar Pedro de Vega said in 1602 'that writing was invented to support and restore our memory'.[95] Yates found that 'memory was raised to the category of a true art that enabled one's own access to knowledge and permitted transmission to others'.[96] Memory is a concept that can serve the actual author or writer, as it can serve the next generation or generations. Memory can indicate a short time but also a long time continuum of the knowledge transmission. One can write it down to have a look at it in two years time, but one can also write it down for one's apprentice. In the second chapter an example of the latter, where a master painter left his apprentices a recipe book, will be further explored. A more explicit use of memory is the intention to immortalize knowledge. This is the case for Georgius Agricola when he starts his *De Re Metallica* (1555) with: 'I became afraid that I might die before I should understand its [metallic arts] full extent, much less before I could immortalise it in writing'.[97] The immortalization of knowledge reaches far beyond the next generation, and aims at the eternity of the written word.

Memory was certainly at stake in Cennino Cennini's *Il Libro dell'Arte,* which is a manual for the beginning painter. But here I find a new dimension of why to write something, which is related to the experience of pleasure. The long recipe on how to gild a stone figure introduces the idea that he will explain his public recipes 'not because it is usual, but because I have relished it'. This says two things about recordings in recipe books. One: that the normal procedure would be that commonly used procedures were

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[94] McIver 2015, pp. 19-20; also in Scully 1995, p. 8.
[95] In: Pedro de Vega, *Segunda parte de la declaración de los siete salmos penintenciales* (Madrid, 1602); see Bouza 2004, p. 2.
[96] Bouza 2004, p. 2.
[97] Agricola 1950 [1556], p. xxv.

registered. The procedures that one needed to know were the procedures that survive until today. Cennini contributes to the purpose of memory by writing his *Libro dell'arte*. Two: that there were other reasons for writing. Or not only standardized procedures were worth being transmitted, but also little common procedures which are fun to do. Smiths' answer to 'why write books?' is correct. Cennini needed to sustain himself in life; he was in need of a protector, and thus his dedication. But this is what I call an extrinsic motivation. The intrinsic motivation is the education of the next generation of artists. The type of knowledge that Cennini selected to write down was primarily in service of this purpose. And here, another factor comes in: the joy of doing. Personal delight becomes a reason for writing, something that previously or commonly has been merely associated with creative writing rather than practical writing.

3.1.2 Issues of authorship and practical writings

This PhD dissertation takes textual recipes as the measure of practical knowledge. These recipes are written text. Text is always written by somebody, and this person is most often referred to as the author, but here writer is more accurate. This brings us to the topic of authorship of recipes. I will introduce the problematic of authorship staying with Cennini. Cennino Cennini is often thought of as the 'author' of *Il Libro dell'Arte*. In a way the book claims authorship: 'Here begins the craftsman's handbook, made and composed by Cennino of Colle'.[98] The so-called 'author' leaves no doubt about his actual contribution to the book: he 'made' the book; he 'composed' the book. In his introduction he states: 'I will make note of what was taught me by the aforesaid Agnolo, my master'.[99] Also on the level of the recipes, one can discover this sense of compilation. For instance for the gilding on panel with terre-verte, Cennini proposes to 'do also as our forefathers used to'.[100] This procedure is in fact not his proper invention, but stems from a long tradition. The plan for the creation of his book consists of the careful selecting of procedures, which he brought together in one manuscript; Cennini takes the role of a compiler.

The concept of an author as the sole creative instance and creator of a text is an eighteenth century creation, deconstructed in the 1960's by Roland Barthes and Michel

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[98] Cennini 1960, p. 1.
[99] Cennini 1960, p. 2.
[100] Cennini CXXXIII.

Foucault.[101] Through their work, the final creator of textual meaning got shifted from the author to the common reader. This idea is recognizable in Elaine Leong's method. Leong studies recipe books as a collaborative product, where reading texts leads to note taking. Note taking is an act of knowledge transmission and therefore an act of knowledge production. Implied in this project, the reader of practical knowledge becomes creator of practical knowledge. The emphasis lies more with the consumer of practical knowledge than the actual 'author', a consequence of the 1960s' 'death of the author'. In fact, what is the value of an actual 'author' of practical knowledge? Recipe books are mostly compilations. Some recipes are the textual remains of actual practice. The various stages of the cycle from idea to recipe could be the following: a person has a problem and needs to look for a solution. He or she comes up with a strategy and handles it accordingly. With the eventuality of coincidence the procedure's results are found positive. Then the person also decides to write the procedure down. The part of prime importance out of this cycle of thinking, doing, and writing is the practical and executive part. The practical side of practical knowledge is superior to the textual side of practical knowledge. The textual side of practical knowledge is important for this PhD dissertation because it is the witness of practical knowledge and its practical side.

Another approach to authorship of recipe books is found in Michelle DiMeo who discussed the concept of authorship for seventeenth century English recipe books as a mechanism of attributions. Most of seventeenth century English recipe books contain attributions to the recipes. The case of Wellcome MS 7113 is an interesting one. Often the recipes have two names written next to it. One name indicates the source, which is the person the recipe comes from. The second name is often Lady Ann Fanshawe, or the owner of the recipe. Both names give a sense of authorship in DiMeo's eye. Goldstein links the change over time from non-attributing to attributing recipes to the class-climbing merchants, who applied the practice more laboriously than the gentry or aristocracy. Furthermore these attributions are interesting because they situate the collector of recipes in a social network of knowledge-exchanging people or co-contributors.[102]

Not all authors or writers are the same. Being an expert is different from being a professional writer. For example, Georgius Agricola (1494–1555) wrote the impressive compilation about metalworking *De Re Metallica* (1556). Agricola was not a specialist in

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[101] Finkelstein and McCleery 2006, p. 275; Long 2001, p. 8.
[102] DiMeo and Pennell 2013, pp. 42-43; Goldstein 2013, pp. 145-153.

the metallurgical field and his work is not of any practical value. It took him 20 years to write the book. Even though this work was not published until after his death, Agricola was a professional writer during his lifetime. He wrote for money and wrote about subjects without being involved in the practice, such as with *De Re Metallica* (1556). Professional writers had their specialization in bringing knowledge together for publication; regardless of the precise content of this knowledge. They are often referred to as authors, but essentially what they do is compiling and editing texts.

Concerning authorship and the material conditions of writing, Wendy Wall differentiates between professional and amateur writing.[103] But to get a better idea of the characteristics and identity of a recipe book writer I will extent Wall's categories. Whether or not the person is paid to write a recipe book is a relevant question. One who writes for money is not the same as one who writes for pleasure and personal use. A writer has a public in mind. When a writer is producing a manuscript he or she might write it for proper use only or for family use.[104] In these cases the involvement of a payment is very unlikely.

In other situations writers were seeking to publish the work or they were looking for a protector. In both cases there is a need for financial sustenance. When one is talking about a professional writer there should be a further definition of his or her professionalism. A writer can be also a scribe, who is copying a work in order to sell. To get a further idea of the writer there are two other questions one should ask: 'What is the level of experience and what is the level of expertise involved?' A writer can be an expert who writes down the recipes he or she tried out personally. But often things are far more complex than that. You find a lot of compiled recipe books even in the hands of experts. This is the case of *De diversis artibus*, generally attributed to Theophilus; but more certainly written by a person who was a practicing artisan with or without the name of Theophilus.[105] In the section on the art of the painter there is a varnish recipe that proposes a second procedure for a varnish. This second recipe holds a clear textual indication that the recipe was copied, it starts: 'the same by another hand'.[106]

Different than the case of Cennini, who wrote an introduction manual to potential protectors is when a master painter, the so-called expert with experience, writes down recipes for the education of his apprentices, he will not gain money because of the

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[103] Wall 1999, p. 72.

[104] The probability of a print culture merely for the self would be very small, if not non-existent.

[105] Hawthorne and Smith 2013, pp. xv-xvii.

[106] Theophilus 1961, p. 19.

writing. However, the master painter does certify the longevity of his workshop and can sustain in his living by maintaining the educational cycle in his workshop. Or there are non-experts who do try out procedures to make something and then write them down. The possibilities of who writes and what is written are many. The criteria involved are paired: professional writer vs. amateur writer; expert vs. non-expert, and experience vs. non-experience. These categories will be further examined in the third chapter of Part I of this PhD dissertation.

3.2 Form and conventions of practical knowledge

In this theis the unit of measurement for practical knowledge is the recipe. A recipe is a literary form. On a practical level it communicates instructions to enact something. What makes a recipe a recipe is the typical literary form and the use of the imperative. The word 'recipe' comes from the Latin verb 'recipere' which mean 'to receive'. It seems to have come into English in the 15th century, was used to indicate physicians' prescriptions and had an initial medical usage. Before the word 'recipe' was associated with kitchen practices, the word 'receipt' was used to indicate instructions for food preparation. A receipt is 'a formula or preparation made according to a formula' with medical or other application.[107] From the fourteenth century until the end of the 15th century recipes were known as 'nyms'. The word 'nym' literally means 'take'. Recipes would most often use the terminology 'nym a pound of'. The word 'nym' would know a short revival in kitchen literature in the seventeenth century.[108]

3.2.1 The form of the recipe

In this part I consider the recipe as a piece of text with a literary form. Literary forms correspond to a set of conventions in order to communicate something. In the case of recipes one can state that they are prescriptions of procedures. What is generally accepted is that prescription and description are opposing formats, but for Howard Levis, one does not exclude the other; he sees recipes as descriptions of procedures.[109]

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[107] OED.
[108] Morton 2004, pp. 209; 254-255.
[109] Levis 1912, p. 1.

The contemporary form of the recipe contains a heading naming the dish, a list of ingredients, and a body of text with the instructions. The early modern recipe corresponds more or less to the form of a contemporary recipe.

As said before, early modern recipes are textual units of practical knowledge. Before I discuss the components of recipes I will introduce how these units are organized in the early modern setting. Bear in mind that the considered recipes are those within the context of a recipe book. Of course, recipes can appear in any other context, such as in account books, in a letter or on a random piece of paper.[110] The most clear visual way to organize recipes is through the use of space. Recipes can be distinguished by a blank before or after the textual unit. Some recipe books add lines or other beautifying elements to the separating space. Another way to recognize the beginning of a new recipe is through the use of a title. Occasionally distinct titles can be missing; this can happen, for example, in a running text. In this case new recipes can commence with the word 'item', which is Latin for 'also'. New recipes can also be distinguished through the use of other markers, such as punctuation or colour. Colour use in recipes seems to be inexistent or at least not frequent in print, unlike manuscript recipes.

Recipe titles have two functions. First, titles are a means to distinguish individual recipes. They often appear centred or indented, underlined, coloured or in a more elaborate script. Second, titles contribute to the organization of the unity of the recipe itself. A title announces what the recipe will do or it alludes to the outcome of the recipe. The title often starts with 'to make', 'for the making of', 'an excellent way to make' or it can simply announce the desired end product, for instance 'A diet drinke'.

Early modern titles have broadly the same function as today, but ingredient lists serve a different purpose. Today we know recipes as a set of instructions containing a separate list of ingredients, often at the beginning. Modern ingredient lists make mention of the necessary quantity of each ingredient and commonly list one ingredient per line or list ingredients in columns. In the surviving early modern recipe culture, ingredient lists do not exactly follow the contemporary standards. Early modern lists of ingredients and materials are not necessarily connected to one single recipe, or any recipe at all. The art technical recipe book NAL 86.EE.69 contains various lists of colours. One of the lists shows how to temper certain colours, for instance with water or with oil. Another list shows which colours and pigments can pass as the colours for coats of arms. Another list

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[110] I will refer to recipes in recipe books and will forego the discussion of recipes as page filler in other accounts.

of colours is accompanied by the market price.[111] In this recipe book lists are not directly connected to a recipe. Some recipe books create an overview of food linked to their season. Wellcome MS 8097 is a cookbook with a squared grid that lists foods according to their month of consumption.[112] A recipe for 'the wound drinke and for the kings evill' lists all herbs to be gathered in May before describing the actual procedures.[113] Early modern listing happens in a categorical way rather than a functional way. They rarely serve one single recipe.

Early modern recipes commonly include the mentioning of ingredients and additional remarks directly in the procedure description. For instance a recipe 'to make white inke' proceeds as follows: 'Take chalke and grind it small & temper it with gome water & for let it stand'.[114] The procedure description includes the ingredients. If one wants to make white ink, one needs chalk and gum water. There is no separate listing of the ingredients, one discovers that the chalk needs to be grinded before it has to be tempered or mixed with the gum water. In early modern recipe culture most of the times the procedure coincides with the mentioning of necessary ingredients.

The body of the text may also include additional remarks, such as the application, storage or prescriptions with use. The Fanshawe 'diet drink' concludes the recipes with information about the length of intake and the precise function of the drink: 'You may drinke of it 6 or 7 days. This is an excelente drinke for any rheumatick body that is inclined to dropsie'.[115] The conclusion of a recipe, if there is any, fulfils the prescription with extra information. In his article on genre convention Francisco Alonso-Almeida focuses attention on two less described stages of the recipe, being 'expiry date' and 'virtues', appearing often at the end of the recipe.[116]

Early modern recipes communicate more information then what is discussed directly above. Another important aspect of recipes is the communication of provenance and ownership. A fascinating example for this topic is the 'Booke of Receipts of Physickes, Salues, Waters, Cordialls, Preserues and Cookery' of Lady Ann Fanshawe, which is Wellcome MS 7113. There are two kinds of recipe attributions in this manuscript. The first type is the provenance. These are attributions where a recipe comes from, such as 'Lady Butlers' or 'My mother'. The second type of attribution is that of

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[111] London, National Art Library: NAL MS 86.EE.69.
[112] London, Wellcome Library: Wellcome MS 8097, fols 81v-87r.
[113] London, Wellcome Library: Wellcome MS 7113, fol. 7v.
[114] Oxford, Bodleian Library: MS B Rawlinson D. 1025, fol. 30r.
[115] London, Wellcome Library: Wellcome MS 7113, fol. 7r.
[116] Alonso-Almeida 2013, pp. 72, 80-82.

ownership, and in the case of Wellcome MS 7113 the recipes most often belong to Ann Fanshawe. The manuscript registers transactions of knowledge; it registers who recipes come from and who they go to. David Goldstein argues that the convention of attributing is a seventeenth century usage.[117] The whole of the recipe book attributes almost 100% of its recipes. The names in the margins register the social network of Ann Fanshawe. Many of them belong to her extended family. Recipes do not only give the summary in the form of a title and instructions; they also can give information about the networks in which they circulated.

3.2.2 Recipes and narrations: mechanisms of persuasion

Apart from provenance and ownership, there can be more information extracted from a recipe. Some recipes are peppered with anecdotes.[118] Information about a provenance and/or usage context may shine through the anecdotal level of the recipe. The word anecdote comes from Greek *anekdota* and means 'things unpublished'. Anecdotes are 'secret, private, or hitherto unpublished narratives or details of history'.[119] This description fits for anecdotes in recipes.[120] Wellcome manuscript 425 contains an interesting piece of plague writing. Two recipes, being one cure based on onion and one protection based on oil, are accompanied by an extra layer of information. The recipes would come from a certain respected Sir 'Messer Lugio' of Siena who 'was killed in Florence by people from Siena and died at the Florentine prison *Carcere delle Stinche* and was put to dead by a young person from Siena for money; he was promised 1000 florins'.[121] Why was this information written down? What is the extra value of this piece of information? In which way can the details of the murder serve the recipe? The narration of these facts does not directly contribute to the functionality of the recipes. The consumer principally receives information about the provenance of the recipes. However, as seen before in the piece about experience-based knowledge, the issues of authority and credibility are relevant for practical knowledge. In fact the writer of this

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[117] Goldstein 2013, pp. 143-147.
[118] I thank Martin Prochazka for his suggestion to see anecdotes as a strategical means in recipes. Prochazka investigates the relationship between anecdotes and historical narratives in his *Ruins in the New World* (2012).
[119] OED.
[120] Other characteristics of the anecdote, such as its humorous twist or gossip like reporting is missing in these precise plague recipes. OED; http://www.dbnl.org/.
[121] Freely translated from London, Wellcome Library: Wellcome MS 425, f. 135v.

recipe stresses in three different parts of the plague writing that the recipes have been approved of and that they work. He concludes by saying that he has personally witnessed their functionality. The sensational character of the narrative serves as an eye catcher for the reader, and the repetition of the testimony serves as a guarantee for the functionality of the recipe. In this way an anecdote and claim can serve a recipe and fulfil the rhetorical function of persuasion.

3.2.3 Conventions of measurements: quantifying time

When one talks about recipes, one also talks about quantifying units. A significant part of the instructions is about the amount of time certain actions have to take. In fact, the timing in a recipe is a crucial and essential part of bringing the execution of the recipe to a successful end. Often in early modern recipes a precise time indication is missing. This might be due to the fact that the actual author knows how long something needs to boil. Some recipes call explicitly upon the experience of the user. For instance the Bolognese manuscript says if you want to dye a tread red with verzino, to boil verzino 'as long as you think sufficient'.[122] In some cases a precise time is given and again other recipes give an approximate time. Sometimes the material conditions of substances are described. For instance the recipe to make amber varnish in the Paduan Manuscript says: 'Take common turpentine, make it to boil for a quarter of an hour, add to it some amber well powdered on the marble, boil it for half an hour until the amber is liquefied, and take it from the fire'.[123] First it is described that the substance has to be boiled for a quarter of an hour. When it has to be boiled again, the user has to rely on two complementary instructions: either the substance has to boil for half an hour or the substance has to boil until it has obtained the liquid state. This second instruction is an explanation of how the substance should become before one takes it of the fire, in case a 30 minutes time frame is not sufficient.

Little scholarly attention has gone to other systems of time management in early modern recipes. It is not unusual to encounter the prescription to make something boil for the duration of an Our Father. I argue that in early modern Europe prayers were used to control the duration of the actions in recipes.[124] In this way religious knowledge was

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[122] Translation from Italian, citation taken from Merrifield 1999 [1849], p. 588.
[123] Translation from Italian, citation taken from Merrifield 1999 [1849], p. 688.
[124] I have not come across any work that theorizes or discusses this matter profoundly.

used for practical purposes. Due to the nature of the transmission of practical knowledge, these measurements largely survive past the invention of the clock. The mechanism used for Europe's first (at least the first we know of) clock is weight-driven. The weight driven clock made its entry into Europe by the end of the thirteenth century, most presumably. There was no visual hour indication spoken of yet, but a bell was struck every hour. During the fourteenth century astronomical clocks appeared across Europe and during the fifteenth century automata or spring-driven clocks had made their entry.[125] Minutes as a sexagesimal fraction of an hour were introduced much later. For a long time the meaning of minute was variable, but it often refers to 1/10 of an hour.[126]

A clock is a piece of information technology; it communicates the time of the day. Herbert Ohlman states that information technologies are 'extensions of human sensory-motor capabilities'[127] and he proposes five fundamental questions to study its evolution:

1. How much of our life is affected by a certain invention?
2. How much of our income is spent on using an invention?
3. What percentage of the population owns the invention?
4. What would be the effect on society if we had to do without the invention?
5. How many people are employed world-wide in industries which have developed from electrical or electronic inventions?[128]

These questions give measures for contemporary application of technological innovations. Especially the last question is dated; it makes no sense to talk about electricity industries before Benjamin Franklin's experiments and observations concerning electricity. The four remaining questions on the other hand can easily be applied to the early modern setting.

First, how much of early modern life is affected by the invention of the clock? Jacques Le Goff argues in his impressive work on medieval society that during the fourteenth century there were changes in the measurement of time.[129] Church time was replaced by clock time. Communal clocks were instruments that ran daily life and divided the workday into fixed units in order to advance a working schedule. These instruments were superposed by merchants and hence the basis of a more economic reasoning about time.[130] The technology was often not very precise and an escapement system was built

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[125] Jagger 2012; Ohlman 1990, pp. 695-696.
[126] OED.
[127] Citation from Ohlman 1990, p. 686.
[128] Ohlman 1990, pp. 690-691.
[129] Le Goff 1980, p. 44.
[130] Le Goff 1980, pp. 35-36.

into clocks, which gave the possibility to create mathematical sense to the division of days in hours. But even though this correction was calculated, for many centuries time was a problematic topic. At the time of the Dutch inventor of the pendulum clock, Christiaan Huygens (1629–1695), clocks were often fragile and irregular.[131] The clock had an enormous influence in the daily life of people since the fourteenth century. In recipe books this influence of the clock is not always present. For instance, Cennino Cennini (ca. 1360–ca. 1427) has a recipe to keep a mordant good 'from one vesper to the other'.[132] The indication of a day happens through church time. This is certainly due to reasons of transmission and persistence of time measurement patterns from the past.

Second, how much of people's income is spent on using the clock? And third, what percentage of the early modern population owned a clock? With the coming of new techniques the clock was no longer necessarily a public object but could also be a private instrument. For a long time, the presence of clocks must have been public or semi-public. There is a discussion about the earliest presence of domestic clocks. Ohlman dates it back to the late fourteenth century.[133] Jagger on the other hand situates the earliest reference one century later. Jagger found that the first reference to a domestic clock goes back to 1469 and is found in one of the Paston letters. The description of this 'lytell clokke' says exactly what it was, a miniature version of the tower clock. Further, Jagger dates the first portable clock goes back to 1482.[134] There might be a difference in the approach of the two scholars, Ohlman referring to concrete artefacts and Jagger referring to textual indications. However, I find that the modest number of clock makers might indicate that clocks were not that omnipresent after all. During the sixteenth century, France had five known clock makers, of which two were royal clock makers.[135] Taking into account that in the best case each clock maker had a series of workers, helpers and apprentices and that some clock makers might have not been registered, we still are dealing with a very small number of people that produced clocks in the whole of France. I will leave a comparison with the number of sixteenth century French painters behind, but I think mentioning this is enough of a statement because of the multiplication of the amount of active and registered painters. Most probably the concept and use of the clock was more established than keeping a private clock.

Fourth, what would be the effect on society if early modern society had to do

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[131] Le Goff 1980, p. 49.
[132] Translation mine, Cennini CLII.
[133] Ohlman 1990, p. 695.
[134] Jagger 2012.
[135] Jagger 2012.

without the invention? Without a clock, working days were irregular and the timing of the church would offer the dominant pattern of the day. Without clocks, recipes would call upon the ecclesiastical apparatus for timing. Instead of using the clock time as a reference for duration, prayers were used. In fact, J.B. Oosterhout published a study of independent Flemish rhymed prayers of medieval Bruges. He distinguished the textual form of the prayer from the religious act of the prayer.[136] This distinction might not be as contemporary as we may think. Prayers in early modern recipes books would be understood in terms of time or duration, meaning the time it takes to say the prayer. Each prayer has its own length and takes a certain amount of time to say. The most common prayers one meets in early modern recipes are:

1. Our Father
2. Hail Mary
3. Miserere

The texts of these three prayers are borrowed from the bible. The Our Father or paternoster, also referred to as the Lord's Prayer in English, comes from Mt 6:9-13.[137] Hail Mary or Ave Maria comes from Lk 1:28,42. And finally the miserere is a penitential psalm, Psalm 51. In all the investigated recipes, these three prayers are only mentioned by name, never written out completely. Prayers belonged to common knowledge. Prayers were a common good that served as an indication of time. Recipes report that a substance has to soak, boil or rest for the 'space' of a number of prayers.

Converting prayer time to clock time is quite an impossible task. A truthful estimation is difficult to obtain because there are several variable parameters that coincide. There are the problems related to the text and there are problems related to the saying or reading of the prayer. The first issue is the one of text fixity. Even today the Our Father has not obtained an absolute form of text fixity, meaning that the various Christian churches use different translations with various degrees of differences. The variability of the texts of prayers was certainly an early modern phenomenon. Before the printing of prayer translations in vernacular it might be difficult to know which language was used and which translation. With a Latin recipe book, one might believe that the paternoster was actually intended to be said in Latin. But for instance with the Bolognese manuscript this becomes a point of discussion as the whole manuscript uses Latin, Italian

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[136] Oosterman 1995, p. 17.

[137] Paternoster is understood as Our Father or the Lord's Prayer and not as the series of prayers one prays with the aid of a rosary, which in Dutch is called paternoster. The large beads of a rosary are reserved for the paternoster, in some languages this refers to the whole of the prayer cord or string with prayer beads.

and a mixture of the two. And what to say about the Flemish *Thouck van wondre* (1513)? Dutch or Flemish speaking users might have very well applied a Flemish version of the paternoster. The research after the textual and material side of *A Very Proper Treatise* (1573), which is the main player of Part II of this dissertation, brought a sixteenth century Flemish version of the Our Father to light.[138] The prayer appears in a volume that binds several works of different interest together. In the order of appearance:

1. Anonymous, *A Very Proper Treatise* (1573)
2. A fly leaf with English writing
3. A single leaf with Latin writings, a Dutch Our Father, and several drawn figures
4. *Alphabetum monachi fratris Thome Kempis ordinis regularium*[139]
5. *Alphabetum pauperis monachi in schola humilis fratis Thome de Kempis*[140]
6. A model book of Guilielmus Middelborch, dated 1578

There is material evidence to support the thesis that all the items were bound together around 1825 by bookbinder William Pratt, on orders from the eccentric collector John Bellingham Inglis (1780–1870). According to my findings, I divide the book in two chronological parts, which corresponds to the two used media. The first book is a sixteenth century print; the other four parts are handwritten documents from the 15th century. Because the handwritten documents are partly in Middelborch's hand and partly the models he used for copying, I can conclude that the written documents were within Middelborch's reach. Middelborch's interest was in letters and so was Inglis', at least for this volume. In this precize volume Inglis bound *A Very Proper Treatise (…) which teacheth the order in drawing & tracing of letters* to other documents. The main players in this gathering are letters and alphabets.

The Flemish version of the Our Father in the Glasgow binding does not correspond at all to the contemporary or biblical version. This text is very different in length, content, and form. The Our Father has seven petitions (and an eventual doxology at the end). The payer does not use rhyme. The Middle Dutch prayer has 28 verses, divided over seven stanzas and uses the rhyme scheme AABB CCDD etc. The first line of the each of the stanzas contains one of the petitions of the biblical Our Father. The Middle Dutch prayer keeps all the criteria for a 'good' prayer. Among the characteristics Oosterman lists for prayers are confession, humility and unworthiness, preparation for

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[138] The work is catalogued as S.M. 1161 at the University Library of Glasgow.
[139] *The alphabet of the monk brother Thomas à Kempis of the order of canons regular.*
[140] *The alphabet of the poor monk in the school of the humble brother Thomas à Kempis.*

dead and fear of a sudden death, thanksgiving and the asking for mercy and grace.[141] These are the aspects the believer wants to communicate to God in his or her prayer. A humility *topos* case in this prayer is 'we poor children made of mud', which gives a representative example of the tone of the prayer. Glasgow MS SM 1161 contains a Dutch variation on the Our Father, which proves that text fixity for prayers is unstable and therefore it is difficult to determine the exact length of a certain prayer.

The other problem that impedes our understanding of the precise timing of a prayer has everything to do with the way the prayer was said. The modality of praying could be very different considering the circumstances. A prayer could be read aloud or it could be memorized and said silently in one's mind. The purposes of these prayers had to serve practical, daily issues. One might assume that it was not the stiffly ceremonial cadence that was used, but rather a swift and fluent style. The most precise indication of how to say a prayer for practical use is found in Sir Kenelm Digby's (1603–1665) closet. A Jesuit that came from China in 1664 brought a way to make tea with eggs: stir two yolks with fine sugar and pour tea upon it, stir well and drink hot. Mr. Waller's way to make tea with eggs is slightly different: 'The water is to remain upon it, no longer then whiles you can say the Miserere Psalm very leisurely. Then pour it upon the sugar, or sugar and eggs.' The psalm has to be said 'leisurely' or without haste. This would be more like the ceremonial speed. The question is if this was the common way or if this was an exception. The answer might lay in the last part of the recipe where a clarification follows: 'thus you have only the spiritual part of the tea'. Here the spiritual dimension of the prayer takes part and this would be reflected upon the tea. Saying a prayer as an act of believing and consequently obtaining a tea with a spiritual dimension goes hand in hand with the ceremonial convention of the length of prayers. However, I believe that originally this prayer was used for its practical purposes and that it got an extra layer through transmission and personal adaptation. Thanks to this example I can conclude that in daily practical use the saying of prayers must have been 'practical' and not ceremonial.

In this part I have made a study about the use of prayers as time units for practical knowledge. This habit goes back to a time before the invention of the clock, which is a time where the church dominated the timing in daily life, on the work floor and in the recipe book. Religious knowledge was used in a practical way. Prayers were allocated a practical significance. This means that religious knowledge could be subordinate to

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[141] Oosterman 1995, pp. 23-34.

technical knowledge.

3.3 Functionality and *raison d'être* of recipes

3.3.1 Implication of instruction

The communication of practical knowledge proceeds along certain conventions. The form in which practical knowledge is communicated is commonly a recipe. Early modern recipes are often just a means of enhancing the memory of the user. This aspect will be discussed below. Early modern recipes often have a haphazard and incomplete character. Recipes could be written down for proper use or could be written down in a more standardized way, which makes copying and further dissemination possible. Eventually, the idea of a recipe follows literary conventions that serve the communication of information – or in this case practical knowledge.

A recipe is a literary genre that conveys information or practical knowledge. In this PhD dissertation the recipe is understood as a unit of measurement of practical knowledge. Both William Eamon and Allison Kavey put the significance of recipes with the communicative aspect. Kavey sees recipes as a 'means of conveying natural knowledge'.[142] Eamon refers to recipes as the 'conventional format for recording technical processes in the early modern how-to books' and stresses the utilitarian character of recipes.[143] Eamon points out the implicit contractual nature of recipes. They are prescriptions for experiments and they use the imperative. This establishes a binding between the reader and the text. The recipe prescribes an action; the completion is the trial itself.[144]

3.3.2 Function and dysfunction of early modern recipes

The function and the dysfunction of early modern recipes touch upon various aspects

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[142] Kavey 2007, p. 8.
[143] Eamon 1994, pp. 4; 131.
[144] Eamon 1994, p. 131. Eamon refers to Greimas 1979, p. 7.

that define practical knowledge. Practical knowledge dwells in discourses of truthfulness, usefulness, reliability, practicability, secrecy versus commonly known, a tacit vein, etc. Dysfunctional recipes are non-executable or implausible recipes and therefore they are a *contradictio in terminis*. Dysfunctional recipes have been described in various terminologies: fraudulent recipes, false recipes, uneasy recipes, impossible recipes, lies, etc. The functionality of the recipe is the communication of information in order to obtain something, *ergo*, with a dysfunction recipe, something goes wrong along the line. Some of them are only known to the specialist's eye. Although in some cases today's readers of medieval and early modern recipes might end up frowning when facing some curious recipes. Wellcome MS 425 contains an odd recipe for a 'cosa mirabile' or 'admirable thing'. The description of the recipes is as follows: the user is advised to take an egg, perforate it and insert human blood until it is full. The opening of the eggshell has to be closed with wax and the egg has to be replaced under the chicken. When the chicks are born, the user has to take the same egg and break it. The substance inside will take the form of a creature that will make a good powder for 'great things'. The user is charged with silence concerning this procedure. The recipe concludes that alternatively one could add human sperm instead of human blood.[145] To our standards this mysterious recipe has a highly improbable outcome.

A lot of early modern recipes have problems with the execution and/or outcome. I describe them as dysfunctional recipes; meaning that they are not functional and are not directly applicable or simply the whole of their successful execution is questioned. Some recipes are actually dangerous and nocuous. A pretty example of scholarly awareness can be found in the health and safety warning clause in Mark Clarke's edition of the Montpellier *Liber diversarum arcium* (*Book of divers arts*). Here the reader is advised that 'mediaeval standards of health and safety at work were considerably more lax than those of today. Many of the materials and processes described in the present volume are dangerous. Any attempt to reconstruct any of the materials or processes described in this volume should always be preceded by a risk assessment, especially with respect to the use of materials that can be toxic by touch or inhalation.'[146] In little words the warning resounds: don't try this at home.

Already in the early modern period the functionality of recipes was questioned. In his *Piazza universale di tutte le professioni del mondo* (Universal marketplace of all the

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[145] London, Wellcome Library: Wellcome MS 525, f. 141r.
[146] Quotation taken from Clarke 2011b, p. xiii.

professions of the world, 1583) Tommaso Garzoni calls improbable secrets 'ridicoli & vani' or ridiculous and in vain. Isabella Cortese, the presumed author of *I secreti de la signora Isabella Cortese* (*The secrets of lady Isabella Cortese*, 1561), copied from Fratello Benedetto who warns the reader about thirteenth and fourteenth century masters such as Geber (Jabir Ibn Hayyan), Raimondo (Ramon Llull), Arnaldo (Arnaldus de Villa Nova) and 'other philosophers'.[147] The reason why one should not follow medieval alchemists is because 'non hanno detto verità', they did not tell truth. The writer adds that for more than 30 years he has read, reread, and studied their works and did not find anything else but fables and chitter-chatter. He advises to not spend a lifetime on these works, as he did. He touches upon another point, the economical aspect of getting involved in the journey of alchemy. The writer confesses that he has not only lost a lifetime, but also a lot of money. He encourages his reader to follow what he says and writes. Further he recommends following her ten commandments. Fra Benedetto gives also one example of incongruent recipes with the various masters, but her overall critique is related to the big and smaller names of earlier alchemists.

A case study from contemporary secondary literature on the topic of dysfunctional recipes is a metallurgic recipe for Spanish gold from the medieval *De diversis artibus*.[148] To obtain Spanish gold one needs red copper, basilisk powder, human blood, and vinegar. The recipe provides instructions for the creation of the basilisk:[149]

> 'The Gentiles, whose skilfulness in this art is probable, make basilisks in this manner. They have, underground, a house walled with stones everywhere, above and below, with two very small windows, so narrow that scarcely any light can appear through them; in this house they place two old cocks of twelve of fifteen years and they give them plenty of food. When these have become fat, through the heat of their good condition, they agree together and lay eggs. Which being laid the cocks are taken out and toads are placed in, which may hatch the eggs, and to which bread is given for food. The eggs being hatched chickens, chickens issue out, like hens' chickens, to which after seven days grow the tails of serpents, and immediately, if there were not a stone pavement to the house, they would enter the earth. Guarding against which, their masters have round brass vessels of large size, perforated all over, the mouths of which are narrow, in which they place these

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[147] More on the authorship of Cortese's *Secreti* in the third chapter of the first part of this dissertation where I argue that what we read in the second chapter is not Cortese's voice, but that of fra Benedetto.
[148] Attributed to Theophilus, as discussed above.
[149] Note the similarity with the recipe of Wellcome MS 425 (London, Wellcome Library). A basilisk is a chicken-like animal and in both cases human blood has an important impact.

chickens, and close the mouths with copper coverings and inter them underground, and they are nourished with the fine earth entering through the holes for six months. After this they uncover them and apply a copious fire, until the animals inside are completely burnt. Which done, when they have become cold, they are taken out and carefully ground, adding to them a third part of the blood of a red man, which blood has been dried and ground. These two compositions are tempered with sharp [vinegar][150] in a clean vessel; they then take very thin sheets of the purest red copper, and anoint this composition over them on both sides, and place them in the fire. And when they have become glowing, they lake them out and quench and wash them in the same confection; and they do this for a long time, until this composition eats through the copper and it takes the colour of gold. This gold is proper for all work.'[151]

This recipe is exemplary in current scholarship that deals with 'uneasy recipes'. Various keys of reading have been proposed. Robert Halleux attributes this precise recipe to an Arabic alchemical tradition. The translation of Arab alchemical text comes with specific problems, which might make us doubt the authenticity of these translations. However, Halleux' proposal for this precise recipe for Spanish gold is that it contains alchemical codes. The code for a red haired man is being decoded as mercury, extracted from cinnabar.[152] Arie Wallert continues the quest for the meaning of some of the ingredients. Wallert uses the terminology 'cover name' for names of ingredients that only insiders understand. He interprets sulphur for blood and mercury for basilisk ash.[153] In this same line of interpreting Pamela Smith proposes that lizard might be another cover name for mercury. In this context she signals a recipe for mosaic gold painting pigment in *Rechter Gebrauch der Alchimei* (1531).[154] The unreliability of recipes can depend on coded words in recipes.

In a similar case study Spike Bucklow offers another dimension to the studies of what he calls 'impossible recipes'.[155] Buclow's case study proceeds with the recipe for polishing gems, another recipe from *De diversis artibus*. In his article Bucklow refers to one

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[150] The author of this thesis changed the word 'acid' for 'vinegar'. The Latin version of the texts says 'aceto'.
[151] Translation from Latin taken from Theophilus 1847, p. 267.
[152] Halleux 1996, p. 887.
[153] Wallert 1990, p. 161.
[154] Smith 2009, p. 46.
[155] In short, impossible recipes can cause complications because there is a problem with either the ingredients or the instructions. For instance the content can be speculative. Or there can be a problem with the descriptive terms the author used; what for the author seems 'necessary and sufficient' may look quite different to the users. Bucklow 2009, pp. 18-19.

of the remarkable passages of this hideously long recipe:

> 'But should you wish to sculp crystal, taking a goat of the age of two or three years and binding his feet, cut an opening between his breast and stomach, in the position of the heart, and lay in the crystal, so that it may lie in its blood until it grow warm. Taking it out directly, cut what you please in it, as long as the heat lasts, and when it has begun to grow cold and to harden, replace it again in the blood of the goat, and being made arm anew, take it out and cut it, and do thus until you complete the sculpture; at the last, being made warm and taken out, you will rub it with a linen cloth so that with the same blood you can procure a lustre for it.'[156]

Bucklow correctly states that this prescription probably did not know a great follow up in the medieval and later workshops because of its impractical and time- and money-consuming procedures. Bucklow argues that the procedure to cut a gem is presented in a mythical way, which has its own logics and that the writer of the recipes did not have literal intentions. The crystal gem is a hard material, in order to cut it one needs heat. The goat's blood symbolized the component fire; a goat was considered a hot-tempered animal. The goat's heart is considered a solar organ. This kind of reasoning makes part of medieval hylomorphism or 'the scientific doctrine that everything is composed of some mater, 'hyle', in some form, 'morph'.[157]

The following somewhat 'mild' but still doubtful recipe appears in Hugh Plat's *The Jewel House of Art and Nature* (1594):

> 'Howe to knowe when the Moone is at the full by a glasse of salt water.
>
> It hath beene creediblie reported unto me, that if an ordinarie drinking glasse bee filled brim full, a little before the full of the Moone, that, even at that instant when the Moone commeth to the full, the water will presently boile over.'[158]

Already the Greeks and Arabs used instruments to study celestial bodies.[159] Today, if somebody is interested in gaining knowledge about the state of the moon, there are two simple and obvious procedures to follow. One can consult an institution that keeps track of celestial bodies such as NASA for instance.[160] Or simply one can look outside and make a judgment based on proper experience. Filling a glass of salted water in order to receive information about the moon is no longer considered a valid option. One does

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[156] Translation taken from Theophilus 1847, p. 387.
[157] Bucklow 2009, p. 20.
[158] Plat 1594, p. 80.
[159] Ohlman 1990, p. 694.
[160] A good example one can encounter here: http://moon.nasa.gov/home.cfm

not need a science degree to understand that this recipe will not obtain the desired result once executed. A glass of salted water can be emptied with a natural principle: vaporization. Vaporization is the process where water is converted into vapour, a gas that cannot any longer be contained in the glass such as the liquid form of it. This is a rather slow process, which is depends on the temperature of the environment. In case of the full moon there is no question about boiling and any sudden reaction to the full moon. Kavey has argued that 'failed recipes' could mean a 'shift in the natural order' or a break what was considered the normal functional supernatural order of life.[161]

Another category of dysfunctional recipes is that of the fraudulent recipes. These are recipes that have been constructed wrongly on purpose. The author acts with bad intention. The reasons for disseminating false knowledge can be linked to motives of secrecy for instance. It might be hard to find out that this was the case but complaints can be found in early modern sources. In the *Iewel House of Art and Nature* (1594) Sir Hugh Plat published a recipe for portable ink or powder ink. This recipe contains a comment about other recipes ink:

> 'I could here set down some other forts of inkes that be not common, whereof some will fall from the paper in a few daies, and others would corrode or fret the paper in peeces, but because I know but one good use of them all, and for that I feare so many bad uses, or rather abuses, would follow if they were known and made common, I will rather seeme ignorant of them, then become an author or helper unto bade men in their bad purposes.'[162]

The accusation is clear; people who spread recipes with bad use are bad men with bad purposes. The author questions the utility of ink recipes of other authors. This might partially be because he needs to sell his own product rather than that of others. But since copying from others was not a problem this would not have been an issue. Then the determining of other recipes as being bad might contain a reflection of an actual situation. The question is no longer whether Plat was trying to sell his own recipe but rather whether the bad men with bad purposes did actually have bad intentions and produced fraudulent recipes willingly. Whatever the case, the recipe of Plat's portable ink demonstrated that intentional fraud in recipes was a topic in early modern culture. Fraudulent recipes belong to the wide range of recipes of which the actual functionality can be questioned.

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[161] Kavey 2007, p. 180: n7.
[162] Plat 1594, p. 37.

3.3.3 The promise of truth and control

Recipes tell the truth. Recipes promise procedures which work, which are do-able. The disturbing fact about dysfunctional recipes is that the outcome is not what it promises; hence the functionality of the recipe is disputable. One of the reasons that instructions offer security is because they are based on the experience of another person. This becomes extra clear when one is confronted with one of the recipes to make azure in Jehan Le Begue's manuscript. It says: 'I have nothing very certain to say' and lists goat milk, mother milk, and egg white as possible binders.[163] This might mean that the recipe was not based on first hand experience and it also means that writer are compilers in the first place.[164] This recipe is not dysfunctional but it certainly makes the reader aware of its relative trustworthiness. Again, more conventionally, recipes promote their truthfulness.

Recipes offer a sense of control. A recipe transmits knowledge about certain techniques to obtain something. This something in a larger sense we could call nature. When one makes a pudding, one manipulates or controls the state of the egg, sugar, milk, and flour in order to get a pudding. The manipulation of natural phenomena goes way beyond simple kitchen actions. For instance healing a horse with a prayer is the dominion of reality or nature through spiritual means. There are many more recipes of this genre, such as the controlling of the weather through spiritual means.

According to John Hale the Renaissance was a period where human control over natural phenomena became more intense.[165] People felt the increasing need to control the world, life. Collecting and buying recipe books, almanacs, and other sources could help them in controlling and predicting life. And here lies the reason of success of books of secrets and recipe books, because they give a sense of predictability.

3.3.4 Truth and trust

Another dimension of truth in early modern Europe is connected to trust. The topics truth and trust take the lead in *The Social History of Truth* by Steven Shapin, the major

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[163] Merrifield 1999 [1849], p. 134.

[164] The position of compilers is elaborated in the third chapter of the first part and also in the second chapter of the second part.

[165] Hale 1993, pp. 509-542.

exponent for this topic. Shapin is interested in a body of knowledge that makes claims on truth, namely science. Shapin sees truth as a social institution. Truth never belongs to others, but to 'us' and 'we'. This implies that there are multiple truths and that a truth can reign in a local setting. There is a strong local and group-related character to truth. Truth has also an eternal aspect; it is never supposed to change over time.[166]

Shapin distinguishes an amoral from a moral sense of truth. The amoral kind does not refer to a specific person, but rather to general truth; nobody catches the blame if the expectation does not come true. For instance, we believe summer to be warm and nobody carries the responsibility in case otherwise. A moral form of trust is based on interpersonal relationships with a system of expectations. Shapin's work focuses on this second variation of trust; trust in specific people.[167]

Peter Dear points out that trust in science is the faith or confidence somebody has in the testimony of another person.[168] The meaning of trust can become clear by showing the opposite. For an exemplar case of missing trust I rely on the recipe for powder ink of Hugh Plat, which has been discussed above in the context of dysfunctional knowledge. In his recipe, Plat, the writer of *The Jewel House of Art and Nature*, judges 'bad men':[169]

> 'I could here set down some other sorts of inkes that be not common, whereof some will fall from the paper in a few daies, and others would corrode or fret the paper in peeces, but because I know but one good use of them all, and for that I feare so many bad uses, or rather abuses, would fellow if they were known and made common, I will rather seeme ignorant of them, then become an author or helper unto badde men in their bad purposes.'[170]

Plat published this recipe that claims to produce a good ink. He tells he is aware of other circulating recipes but because of their bad quality he prefers rather to seem ignorant than to spread information he distrusts. Plat provides a moral judgment to the initiators of these recipes. But it is questionable if these so-called 'badde men' had actually 'bad purposes' in mind when creating or copying their recipes. This, in fact, is not at stake

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[166] Shapin 1994, pp. 3-5.
[167] Shapin 1994, pp. 7-8.
[168] Dear 2006, p. 109.
[169] Both Shapin and Dear are interested in a scientific body of knowledge. An ink recipe would belong to the prescientific knowledge such as in the view of Eamon. This book of secrets outdates the typical period, but because of the nature of transmission, which will be studied in the second chapter, this belongs to the normality.
[170] Plat 1594, p. 37.

here; we will presuppose that other writers of unsuccessful ink recipes did not have bad intentions. Plat keeps a relation of distrust in people who spread unsuccessful ink recipes.

Shapin's discourse about unreliability is very much concentrated on gender and social ranking. Then there is the aspect of spreading false information purposely, which was considered an art by Henry Mason. Mason published *The New Art of Lying* in 1620. The tenor of this work is set in a religious context, where the Jesuit values are under attack. As previously seen with the judgment of Plat, I can conclude that the relation of trust and the desire for truth goes beyond the religious realm. In daily practical knowledge the urge for truth is at stake.

3.3.5 Authority claim?

In Shapin's findings, truth telling is linked to a gentle status. The identity of a gentleman in the early modern period is marked by three pillars: wealth, birth, and virtue.[171] Shapin writes that 'gentility was a massively powerful instrument in the recognition, constitution, and protection of truth'.[172] Writings of practical knowledge do not entirely foresee this aspect of gentility, but there are other more frequent techniques used to claim that the written knowledge is true. When a person is in a position of having truth, the person makes this known through certain communicative channels and he or she is being heard for it, this is what I would refer to as authority. It is irrelevant whether the communicated instruction works or not; what is relevant here is that the consumer interacts with the position of claimed authority. I use the word interact because both accepting authorship and rejecting authorship say something about the positioning of the knowledge and its claimer.

A very interesting claim for authority is read in Isabella Cortese's *Secreti*. In this writing the author appeals on arguments of experience and the religious realm. Issues around Isabella Cortese's authorship are examined in the third chapter of Part I. Important to know here is that the author of the *Secreti* copied from a certain abbot from Cologne, named Chirico. The authority-related arguments come from this copied section. Chirico's invitation to accept his authority is being preluded by anticipating arguments. The experience argument paves the way. The abbot presents himself as a

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[171] Shapin 1994, p. 43.
[172] Shapin 1994, p. 42.

person who had studied the great masters for over thirty years. The striking thing is that he didn't find anything useful in their writings. He also shows himself to have mastered the economical aspect of practical knowledge. His experience is not only textual, but also practical in this sense. In two instances the abbot silently indicates himself as an authority. Twice he argues that the user needs to follow exactly what is written down. The following of the text needs to be complete: 'non levare ne scemare cosa alcuna, ma farai quell che dico e scrivo'.[173] Also, the user has to follow his ten commandments. Following what is written serves the purpose of not failing. Finally, the user is promised to receive God's grace if proceeded as prescribed.[174] The advice the abbot Chirico gives is quite compelling. He makes his recipes count.

A more mild way to invite a consumer to give credit to the writer can be found in *Il Libro dell'Arte* of Cennino Cennini, which is considered the first artistic tract in Italian vernacular. In his first chapter Cennini introduces his recipe book as a work containing information that he tried out himself: 'quello che con mia mano ho provato'.[175] Cennini testifies that he tried out the recipes himself and increases his credibility to practical knowledge. Many recipes across early modern Europe bulk of being 'proved' in one way or another. It usually appears in the title or either at the very end of the recipe. It is information not directly relevant for the practical steps of an instruction but it serves the credibility or authority of the author. The invitation to consider the authority is implicit and therefore not commanding. Cennini also accredits his own knowledge and know-how, but he proceeds in quite a different way. Cennini accredits his masters in painting. He was taught for twelve years by Angolo di Taddeo of Florence, who in turn was a pupil of his father Taddeo, who in turn was a pupil of the famous master Giotto di Bondone (ca. 1267-1337).[176]

The difference with the abbot Chirico is that Cennini places himself in an artistic tradition. Chirico turns himself away from a longstanding tradition in Alchemy. Central to the difference is that Cennini was taught by a living person, meanwhile Chirico claims to have studied from texts. Cennini received knowledge in a personal way, through the standard workshop education. The knowledge Chirico received from the long dead masters comes trough textual transmission. Both ways and both contexts belong to the

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[173] Cortese 1565, p. 20.
[174] Cortese 1565, pp. 19-20.
[175] Milanesi and Milanesi 1859, p. 3. Presumably not all the recipes were tried by Cennini himself. Cennini announces in the same paragraph that information in his book is also coming from his master Agnolo di Taddeo.
[176] Milanesi and Milanesi 1859, p. 2.

realm of authority in practical knowledge. In both cases their authority is based on the claim of actual practice.

3.3.4 Practical knowledge and the spiritual dimension

Practical knowledge can come with a religious component. The religious sphere of early modern life in Europe was intensely intertwined with many other layers of life. In 3.2.3 of this chapter I argued that religious prayers were used as time indications in recipes, which brings together the practical, recipes, and the religious, prayers. But the connections between (and the coexistence of) the practical and the religious or spiritual goes further than this alone. Here I will discuss how religious and spiritual matters are connected to practical knowledge.

Recipe books are often compilations containing other types of texts as well. It should not come as a surprise that some collections of recipes appear in books with theological information. Manuscript 506 of the Wellcome Library offers an example of recipes and theological matters coexisting. The miscellaneous volume is written between 1462 and 1470 by a certain F[rate] Sebastianum de Verona.[177] The practical recipes for dyes and colours appear in several parts of the volume, in between texts such as the papal bulls, prophetical writings and sermons. There is no direct relationship between the religious and technical information. The reason for their coexistence in the same volume is due to material conditions of writing. When things had to be written down, people needed a surface to write the information down, which in this case is the paper of a manuscript. Some recipe books are more organized than others. Even in more organized cases, such as Lady Ann Fanshawe's, who had a separate volume for the biography of her family, there are different kinds of practical recipes to make perfumes and medicines in her cookbook, by definition a book containing exclusive kitchen recipes.

Occasionally practical knowledge sustains religious culture. A clear and often-returning example is the recipe for the making of paternosters. Wellcome MS 425 contains a recipe to make prayer buds of 'yellow amber'. Yellow amber is a fossilized tree resin, and therefore this recipe aims to make imitation yellow amber. The yellow colour is obtained by masticot, a yellow lead pigment, and saffron. The masticot is added to

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[177] London, Wellcome Library: Wellcome MS 506, fol. 50r.

beaten egg whites. This mixture is stored in a glass container and kept in the sun for eight days, hereafter the saffron is added. Subsequently the mass is stored in a bladder wrapped in a wet towel and kept warm. The bladder has to be broken to reach the substance, which after boiling is ready to be turned into handmade beads, perforated, and oiled with linseed oil. Finally, before use the beads have to dry in the sun.[178]

The reason why practical knowledge sustains religious culture is because it names a possible purpose for the imitation amber. This purpose is the making of a paternoster, but the actual recipe aims at the prayer beads. Imitation amber could be used for many other things, such as jewels to name just one. But the recipe title puts the paternoster in first line. A paternoster belongs to a particular religious culture. Several religions use prayer beads, but it is an aid for prayers, and prayers in turn lead to spiritual life. So the paternoster, a material object, belongs to a culture sustaining religion and spirituality. Due to the transmission of this recipe, one can easily find recipes for the making of a paternoster in early modern recipe books, an example of practical knowledge sustaining religious culture.

A different level of interference between the religious and the practical is when the writer of a book uses religious knowledge to sustain an argument. Both Cennini and Theophilus open their work talking about Genesis and the origin of man, as an image of god. Here the writers call upon religious texts. Religious texts were the written source of religion and gave spiritual meaning of life. The reason for opening with a link to religious culture is a justification. Practical knowledge within the borders of art recipe books is seen as a revelation of God. It was believed that God created reality and nature as a mystery and it was God who decided whether or not this information was revealed.[179] In this way the writers certified their knowledge as legitimate. In the particular case of Cennini, the righteousness of knowledge is stressed in a triple way. Cennini situates himself in a determined setting in the opening of *Il libro dell'arte*. He says he made and composed this current book 'in the reverence of God, and (…) of all the Saints of God; and in the reverence of Giotto, of Taddeo and of Agnolo, Cennino's master'.[180] Giotto uses God as his references on the one side, and at the other a lineage of his authoritative masters. These are two ways of justifying the knowledge.

Finally, the third one is when the history of creation is being evoked to make a connection between the creation of man and the issue of knowledge, and the current

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[178] London, Wellcome Library: Wellcome MS 425, fol. 126v-127r.
[179] Eamon 2006, p. 223.
[180] Cennini I.

recipe book. After the expulsion out of paradise, Adam 'started with the spade, and Eve, with spinning. Man afterward pursued many useful occupations (…) and this is an occupation known as painting, which calls for imagination, and skill of hand, in order to discover things not seen, hiding themselves under the shadow of natural objects, and to fix them with the hand, presenting to plain sight what does not actually exist'.[181] Cennini claims that painting was one of the first useful occupations of man, making use of biblical culture. Evoking the presence of God creates the legitimate divine atmosphere for specialist artistic knowledge, which was meant for a limited public.

A more intense level where religious and practical knowledge meet is when both find their way into practical applications. I distinguish two variations. The first is when it's said that a prayer should anticipate or accompany the practical procedure in order for it to come to a good end. Cennini for instance, advises the reader to call upon the 'Most Holy Trinity' and the 'Glorious Virgin Mary' before starting work on a panel.[182] Cennini's text indicates that at a certain moment communication with the higher forces is proper or desirable. It is unclear whether this is a habit or an act of believe. This is partly answered by medical recipes. Manuscript 425 of the Wellcome Library offers a procedure to remove an iron rod or bar from a wound. The recipe prescribes a sequence of prayers turned to the sun: five paternosters and five Hail Mary's worshipping the five pains of Christ. After that three paternosters and three Hail Mary's worshipping of the Holy Trinity. And then one has to pray that Christ will make the rod come out entirely. Finally one has to take the iron bar between two fingers and pull so that it can come out. In this procedure the prayers are clearly an act of faith. But it is still a case where the religious accompanies or guides the practical.

The second type is when the religious knowledge becomes practical knowledge, or when the religious knowledge is used as an act of faith for practical purposes. Manuscript 425 of the Wellcome Library also offers plenty of material for this case. When a horse is in pain, the procedure prescribes that one should say three paternosters and three 'avemarie' in the ear of the horse, repeated three times; this is how the horse will be liberated from pain.[183] In this recipe the practical procedure is the saying and repeating of the prayers. The action undertaken by human intervention will find its completion in divine intervention. The practical part of acting and the spiritual part of healing are so closely intertwined in this recipe. This marvellous recipe gives instructions

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[181] Cennini I.
[182] Cennini CIIII.
[183] London, Wellcome Library: Wellcome MS 425, f. 137v.

for a medical problem, instructing the spiritual segment of life as a solution; which is the summit of the religious and the practical intertwined.

4.   Conclusion

Practical knowledge can exist in different ways: oral, visual, and textual information transfers, which Bouza calls the communication trinity. This PhD dissertation concentrates on the textual aspect of practical knowledge. Practical knowledge or experience-based knowledge can be found in a wide range of texts. For instance, in botanical catalogues, which define and describe plants, the descriptions come with practical knowledge. Here, recipes or instructions are taken as the textual unit of practical knowledge.

This chapter starts with the premise of knowledge in the early modern period. Knowledge in general and certainly practical knowledge is not easily categorized, because of the interdependence of various disciplines of knowledge in the early modern period. Further, the chapter situates practical knowledge. It has given an insight into the state of the arts of practical knowledge and phenomena that cover more or less the same area, such as secret or common knowledge. Finally it theorizes the form and characteristics of written recipes.

The following chapter will move on to the mechanisms and dynamics of how practical knowledge circulated in early modern Europe. This topic is closely intertwined with the first chapter, and it has been challenging to draw a precise dividing line.

Chapter 2.

The Transmission of Practical Knowledge

Every scribe who is instructed into the kingdom of heaven
is like a householder who brings out of his storeroom
things both new and old

Mt 13:52

1. Transmission dynamics and the metaphor of rhizome

In this chapter I will argue that the transmission of practical knowledge proceeds along complex patterns. I will introduce a metaphor to talk about these transmission patterns, known as the root rhizome.[1] The rhizome offers a metaphor suitable to address the

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[1] I thank both Martin Procházka and Carlo Ginzburg for this suggestion; following my conference paper 'Adapting Common Knowledge: A Case Study of the Art of Limning', presented at the 2014 TEEME conference *Between Words and Worlds: Texts and Contexts in the Early Modern Period* in Prague. Cfr. Leemans 2014a. Deleuze and Guattari's concept of rhizome has been frequently used in interdisciplinary fields of study, at times being appropriated. See Jones and Roffe 2009, p. 2. Frohmann reports that the concept has even been 'over-used'. See Frohmann 2008. The rhizome has often been found suitable to use in context

complexity of practical knowledge transfers, because the rhizome is a multiple-ramification system that can acquire multiple forms and have irregular growing intervals. Practical knowledge in early modern Europe travelled through rhizomatic networks. I will make use of the terminology 'transmission' to indicate the travelling or passing on of knowledge. We use a wide variety of different words to describe knowledge in motion; some common ones are: transmission, dissemination, diffusion, spread, and circulation. In this dissertation, I will primarily use 'transmission' and 'dissemination'. In order to create variety I will also use other terminologies, among which 'circulation'.[2]

In this chapter I contextualize practical knowledge transmission within its physical space. I use two early modern environments where practical knowledge was created, applied, and transmitted: the artist's studio and the laboratory. The artist's workshop is seen as a professional environment for knowledge creation, application, and dissemination. The artist's workshop is the concrete environment for the use of artists' recipe books. Relying on a fictitious but didactical dialogue between two assistants, I will show that the copying of textual sources in a specialist environment was common practice, adding to the oral and demonstrative transmission of practical knowledge. I argue that it is exactly the textual practical and applicable knowledge that could leave the professional environment and enter other circulation channels.

The second example is the laboratory, linked to the early modern academies and secret societies. At the centre of this, Girolamo Ruscelli's description of the *Accademia Secreta* is studied. The description appears in the *Secreti nuovi* (1567), which is a recipe book that that claims to be of Girolamo Ruscelli's, which would be the real name of the

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of hypertext and hyperlinked information. See Robinson and Maguire 2009. A good example of textual criticism that makes use of rhizome: Eschrich, Gabriella, 'Reading the Afterlife of Isabella di Morra's Poetry', *Tulsa Studies in Women's Literature*, 34 (2015), 271-304.

[2] I single out the term 'circulation' for further discussion because of its ambiguity. Because the core significance of the word 'circulation' is circle, I will elaborate the idea of the circle. The movement that is expressed with the word 'circulation' is that of a circular movement. Now circles are known to be perfectly round. Here the story of the 'O' of Giotto might come to help. Giorgio Vasari wrote in his Vite that Giotto showed his artistic capacity through the simple gesture of drawing a line. The line was not a straight line but a perfect circle, drawn without compass.[2] A circle is a line with no end and no beginning. The only end and beginning one could indicate is when one follows the procedure of the making or drawing of the circle. But in a perfect drawing this beginning and end should be united perfectly, without distinction. The circle offers another metaphor to talk about knowledge transmission, but it is opposite to the rhizome, which is variable and complex, as shall be seen further in this chapter. Using the term 'circulation' for the transmission of knowledge is quite determining as it might unwillingly imply a closed circle of knowledge transmission, such as in a limited high elitist circle or professional environment with professional secrecy. The other thing the circular movement implies it that the same knowledge would return to where it comes from. Both ideas do not correspond with reality, as knowledge often travelled outside of its original environment and knowledge within a certain environment is subject to change. Nevertheless, despite the ambiguous meaning of the term 'circulation', it is commonly used to address information transfer of which this PhD dissertation will make use occasionally, without the intention of a circular and closed knowledge transfer.

earlier forged Alessio Piemontese, according to the book itself.

The description of the *Accademia Secreta* is most likely, just as the Volpato dialogue, a literary product too. Nevertheless, it is still eligible as an object of study of practical knowledge transmission, because the description offers an ideal model of a laboratory. The idea of laboratory in this text needed to be seemingly realistic to the reader, and therefore it embraces an ideal. The purpose of portraying a laboratory and secret society fits into Ruscelli's plan to win people's trust. People were aware of the fact that recipes could lead to potential failure rather than success. Therefore the writer of a printed recipe book needed to offer support for his claim of knowledge. Printed and handwritten recipe books often contain 'safety' clauses on the level of the individual recipe, and occasionally on the level of the introduction. Most often these are variations of 'I have proved this', coming from the Latin recipe book dictum 'ipse probavi', 'I tested this myself'.[3] In the case of Ruscelli's *Secreti nuovi* (1567), the writer constructed a narrative meant to convince the reader of the truthfulness of the recipe. According to the introduction a whole scientific board and specialised workers collaborated and supervised the re-enacting of each of the recipes three times. I argue that it is unlikely that the actual testing was a historical event, but my interest is in the purpose and ideal of the narrative.

The study of practical knowledge transmission in the professional environment of the workshop offers an example of the concrete, physical context, as well as the modalities and dynamics of practical knowledge transmission. The study of the secret society of a natural philosophy academy offers an example of the idealized physical context, modalities and dynamics of practical knowledge transmission. In this dissertation the concept of a rhizome is most suitable to study the phenomenon of the transmission of practical knowledge. In what follows I will shed light upon the concept of a rhizome and I will illustrate the theory relying upon the example of early modern books about art technology in a wider European setting. I will talk about the existence of textual variants, related to the early modern transmission modes of copying and oral transmission. This will show how recipes were copied across the European continent, compared to the irregular growth of a rhizome. After this concrete example I will discuss the transmission modes linked to their physical environment. This offers a context to highly specialized recipe books that were created and used in that environment and to more general recipe books that borrow material from the more specialized ones. The

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[3] This concrete example comes from Eraclius, cf. Merrifield 1999 [1849], p. 185.

understanding of how the space works in the making and using of books with practical knowledge is key to the understanding of these sources.

Textual criticism investigates the correspondence or interdependence between sources. A frequently used model to symbolize connections is the tree structure, which is easily translated into a tree diagram. The tree model is an old model that is used by several disciplines. In the mid eighteenth century Charles Darwin (1809 – 1882) for instance used the tree diagram in his *On the Origin of Species*.[4] But already in the early eighteenth century the tree model was applied 'by textual critics who were concerned to determine the lineages of biblical and classical manuscripts'.[5] A noted example of a scholar using this approach is Karl Lachmann (1793 – 1851), who showed in his comments that three manuscripts of the text *Lucretius*, of which he published the transcription in 1850, all derived from a single archetype.[6] This method is based on the idea that at the basis of every text lays a unique flawless text. This hypothesis is not sustainable for recipe books for the following reasons: 1) recipe books borrow from multiple sources, 2) the sources of recipe books can be oral, demonstrational, or textual, and 3) copies of recipes or recipe books don't aim to be literal. The multitude of sources and transmission modes suggests that the single archetype hypothesis is untenable.

Recent methodological effort to deal with the haphazardly character of recipe books, comes from Francisco Alonso-Almeida.[7] He applies Michael Hoey's 'discours colony' to English recipe books between 1600 and 1800. He defines a colony as 'a discourse whose component parts do not derive their meaning from the sequence in which they are placed'.[8] With the beehive as the prime methaphor, it is easy understanding that the text type is homogenous, the order heterogenous. Important is that the sequence of the textual parts are unrelevant to the meaning of the text. This method can be appliedin a useful way, as it gives meaning to the non-coherence of a group of recipes, seaking strength in the diversity of a recipe collection, rather than seeing it as a weekness.[9] Nevertheless the text-colony's usefulness, this model neglects some essential criteria when talking about transmission dynamics. The text-colony model is interested in a recipe book as a finished collection of recipes. It takes this collection as

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[4] Tetel Andresen 2014, p. 115.
[5] Tetel Andresen 2014, p. 115.
[6] Pasquali 1988, p. 15.
[7] Alonso-Almeida 2013.
[8] Quote taken from Alonso-Almeida 2013, p. 82.
[9] Alonso-Almeida 2013, pp. 82-85.

a final product, neglecting other textual genres appearing in the same book and neglecting its history. Recipe books are often a product in progress. The text-colony model bypasses transmission dynamics by focusing on the endresult of the manuscript.

This chapter investigates transmission dynamics but will not rely on the tree model because of its unsustainability, and neither will it rely on the text-colony model because of the interst in the dynamism of recipes before and after being fixed in a single book. For this reason, the concept of a rhizome is the most appropriate and useful for the study of recipe books and practical knowledge. The OED defines rhizome as: 'an elongated, usually horizontal, subterranean stem which sends out roots and leafy shorts at intervals along its length'.[10] Think of ginger, bamboo, and asparagus roots. The rhizome model is often compared to the tree model in order to determine its characteristics. The tree has a centralized root, which means that its structure is hierarchical. The centralized root is situated in a network of ramifications. All these ramifications are based on a bifurcation or multiple split. This means that the further the little roots are distant from the central root, the smaller they are. The tree model makes use of a long-term memory, because the centralized root is always measure of compare to any smaller root. The rhizome is a multiple root system that makes use of the short-term memory, meaning that only the direct connection counts.

The concept of rhizome was developed by philosopher Gilles Deleuze and psychotherapist Félix Guattari, and was published for the first time in 1976.[11] Later, in 1980, it was included in *Mille Plateaux*.[12] The edition here consulted is *A Thousand Plateaus* (1987, reprint 2005).[13] This work takes books as images of the world and the realities of books and literature are seen as assemblages. Assemblages of realty are 'unattributable'. These assemblages behave like rhizomes. A rhizome is a multiple ramification system of a subterranean stem that can assume multiple forms.

Within the boundaries of *A Thousand Plateaus* the French duo determined six characteristics of the rhizome for philosophical application: connection, heterogeneity, multiplicity, asignifying rupture, cartography, and decalcomania. The first characteristic is connection. A rhizome can be connected and should be connected at any place and to any other thing. The second characteristic is heterogeneity. A rhizome can be connected to different code systems, for instance the political, economic, biological etc. The third

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[10] OED
[11] Gilles Deleuze and Félix Guattari, *Rhizome* (Paris: Éditions de Minuit, 1976).
[12] Gilles Deleuze and Félix Guattari, *Mille Plateaux* (Paris: Éditions de Minuit, 1980).
[13] Deleuze and Guattari 2005.

characteristic is multiplicity. Rhizomes have no object or subject; they have no beginnings or ends. They have increasing dimensions of multiplicity. The fourth characteristic is asignifying rupture. When a rhizome is broken, it starts up again. This is easily demonstrated with an animal rhizome. For instance, it is difficult to interrupt ants' ways. The fifth and sixth characteristics are cartography and decalcomania.[14] A rhizome is not a single tracing but it is a map with multiple entryways. Examples given to clarify these aspects are the city of Amsterdam and the orchid. The city of Amsterdam is a rhizome city because it has no roots; it is built on water and has canals as an infrastructure. With this concept of a rhizome and its characteristics in mind I will now discuss a group of connected early modern books and their interconnectivity.

One of the difficulties in studying early modern books containing practical knowledge is the tracing of this knowledge. The instructions in recipe books contain excerpts of a knowledge culture. One of the possible questions one can ask is where the knowledge comes from and goes to. According to the rhizome method these are 'totally useless questions' to ask.[15] However, showing where the knowledge comes from and showing the dynamics in transmission is the exact way to show that recipe books behave like rhizomes. During the sixteenth century, Europe was fiercely populated with interconnected vernacular recipe books. In this part I will discuss a possible line of connections between art technological books. My interpretation of rhizome and art technological books builds further on the textual correspondence William Eamon made in his *Science and the Secrets of Nature* (1994). Below you will find a visual representation of the textual coherence between the discussed works, which will allow me to draw conclusions about the transmission dynamics of art technological knowledge and the applied theory of the rhizome to art technological knowledge.

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[14] The OED definition for decalcomania is: 'a process or art of transferring pictures from a specially prepared paper to surfaces of glass, porcelain, etc., much in vogue about 1862'.
[15] Deleuze and Guattari 2005, p. 25.
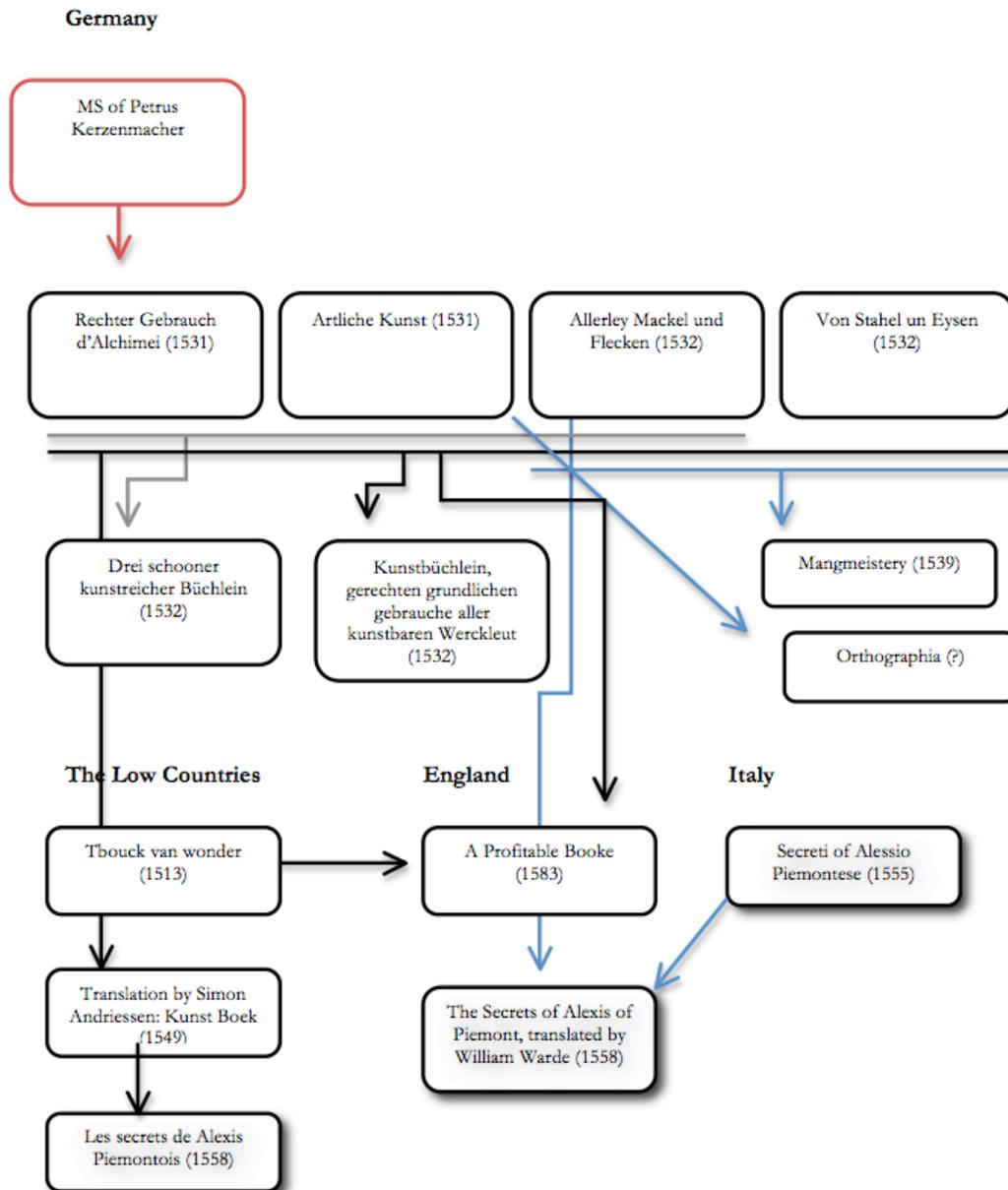
Fig I.2.1: Visual representation of rhizomic connections.

The most popular and well-known collection of art technological recipes in early modern Europe is found in the German *Kunstbüchlein* or 'art booklet'. The *Kunstbüchlein* are a group of initially four booklets or pamphlets that went through more than twelve editions between 1531 and 1532. These booklets are printers compilations with information that derives from a workshop environment, which will be further explored later in this chapter. The first *Kunstbüchlein* is named *Rechter Gebrauch d'Alchimei* or 'The proper use of alchemy' printed by Christian Egenolff in 1531. The basis of this work is the alchemical treatise in manuscript from Petrus Kerzenmacher. The original manuscript has never been found, but in 1534 the entire Kerzenmacher treatise was

published by Jacob Cammerlander, hence the comparison is possible and *Rechter Gebrauch* is found to be indeed based on Kerzenmacher's manuscript. The second *Kunstbüchlein* is entitled *Artliche Kunst* or 'Pretty skills', which was printed by three different printers in 1531: Simon Dunckel of Nuremberg, Peter Jordan of Mainz, and Melchior Sachs of Erfurt. This particular volume was reprinted until well in the 1540's. Its position was taken over in 1549 by Valentin Boltz's *Illuminierbuch* or 'Illuminating book'. The third booklet was *Allerley Mackel und Flecken aus* […] *su bringen* or 'How to remove various stains and spots from clothing' which was firstly printed in 1532. It was printed by Sachs, Jordan, Meierpeck, and Kunigunde Hergot of Nuremberg. *Allerley Mackel* was focused on dyeing and the cleaning of fabrics. The fourth and last treatise was equally published in 1532: *Von Stahel und Eysen* or 'On steel and iron'. This work on metallurgy was printed by Sachs, Jordan, and Hergot.[16]

During the initial phase of the *Kunstbüchlein* (1531–1533) printers focused on the four titles described above. A different rhizomatic offshoot was the creation of new works. New titles found their way to the printing press, but they were based on these four well established works. In 1532 three of the *Kunstbüchlein* were printed by Michael Blum of Leipzig under the title *Drei schooner kunstreicher Büchlein* or 'Three pretty booklets of ingenious skills'. And in 1535 all four *Kunstbüchlein* were printed under the title *Kunstbüchlein, gerechten grundlichen gebrauche aller kunstbaren Werckleut* or 'The little book of skills, proper, basic practices for all skilled workmen'. The title appeared by two different printers: Egenolff and Heinrig Steiner of Augsburg. The 1539 title *Mangmeistery* was printed by Jacob Cammerlander; the book title combines *Von Stahel und Eysen* and *Allerley Mackel*. Subsequently Cammerlander printed *Orthographia* of Fabian Frank, where he included ink recipes from *Artliche Kunst*.[17]

The *Kunstbüchlein* were assembled not only in the German speaking area, they were taken up in a larger European context. In the English setting, recipes from *Kunstbüchlein* ended up in a famous English manual. Leonard Mascall translated and transferred recipes from the most common Dutch and German recipe traditions concerning dyeing and removing of spots. Mascall's *A Profitable booke declaring dyuers approoued remedies, to take out spottes and staines, in sillkes* was first published in 1583 and knew other editions in 1588, 1596, and 1605. *A Profitable booke* is a translation and

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16 Eamon 1994, pp. 114-119.
17 Eamon 1994, pp. 127-129.

compilation out of *Tbouck van wonder* and *Kunstbüchlein*.[18] Franco Brunello, specialist in the history of dyeing, found that the first printed dye manual in Europe was the Flemish *Tbouck van wonder* from 1513, printed in Brussels by Thomas van der Noot (ca. 1475–ca. 1525). This volume contains 59 recipes for the dyeing of cloths, leather, and also paper and canvas. A second edition followed in 1544 by the Antwerp printer Symon Cock. This edition announces 59 recipes in the table of contents. Two of these recipes are different. Recipe no. 13 of the 1544 edition prescribes a yellow dye instead of sanguine dye. The last recipe, no. 59, is no longer another way to dye red but it is a recipe to make iron as soft as copper. From here on follows a sequence of metallurgical recipes, succeeded by recipes for wine and vinegar. *Tbouck van wondre* of 1544 is concluded with a treatise on plants, which is more of a general household manual.[19] Finally, a third edition appeared in 1551 by presumably the widow of the Antwerp printer Jacob van Liesveldt (ca. 1490–1545). Van Liesveldt was known for the printing of the first Nederlandish bible.[20]

The European spread of the German *Kunstbüchlein* was facilitated and stimulated by the contribution of the *Secreti* of Alessio Piemontese. How the *Kunstbüchlein* end up in the *Secreti*, happens in a multiple way. Not all editions and translations of the *Secrets* are equal. There is a lot of interference of other works. For instance the translation of the *Secrets* in English (1558), made by William Warde, gets additions from *Allerley Mackel*, and the French *Les Secrets* published by Plantin in 1559 adds material out of a Dutch translation Simon Andriessen made of the *Kunstbüchlein* in 1549.[21] The *Secreti* originally were printed in Venice in 1555, and this volume became one of the most popular books of secrets of its time. It issued technical, medical, and cosmetic recipes. Scholar Ad Stijnman published a short-title bibliography on the subject and found that between its first print in 1555 and 1791 there were two hundred and sixty-four editions of the *Secreti* published.[22] In the sixteenth century alone, one hundred and thirty-four editions of the *Secrets* were published. In the first five years there were already thirty-one editions made in Italian, French, Dutch, English, and Latin. The last of these thirty-one editions is the

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[18] The connection between *Tbouck van Wondre* and *A Profitable Booke* was already discussed in Driessen 1934.

[19] The comparison is based on two twentieth-century reproductions of the texts: Braekman 1986; Frencken 1934.

[20] He came to his end, beheaded; because he printed Luther's comments with an over clear reforming tone. See Greenslade 1963, p. 123; Hermans 2009, p. 130. Unfortunately I did not have the possibility to compare the third edition myself.

[21] Eamon 1994, pp. 128-130.

[22] This contains a possible double edition (no. 80-81) and a manuscript copy (no. 67).

Latin version.[23] Christoffel Plantijn or Plantin (1514–1589) was the second printer of the *Secrets* and the first non-Italian printer to publish the *Secrets*, in French (1557) and later in Dutch (1558). Plantin opened his printing press in 1555; this is less than two years before his first publication of the *Secrets*. Plantin produced eight editions of the *Secrets*, both in Dutch and French. The translation of William Warde into English ran to fourteen editions. Warde's and Plantin's translations and publications combined, then, account for twenty-two editions of the *Secrets* that include material from the *Kunstbüchlein*.[24] (These numbers are approximate, as they are based on surviving information.) The work of Eamon focuses on the textual coherence of the works and he draws conclusions on science and popular culture in early modern Germany.[25]

The German side of the history of the *Secrets* is a particularly interesting case. I argue that there is an interference of the history of *Kunstbüchlein* in the printing history of the German *Secrets*. The translation of the *Secrets* into German appeared only in 1569. Already in the first five years after the *Secreti* were firstly published, the work was translated into French, Dutch, English, and Latin, and in 1563 three Spanish translations made their entrance, among them the first Catalan and Castilian translations.[26] The first German translation (no. 83) only followed in 1569, which is one year before the first Portuguese translation of the *Segredos* appeared (no. 88).[27] The first German translation did not stick to the original title, instead being translated as *Kunstbuch* or 'Art book'. In one instance the German *Secrets* would be translated into *Von den Secreten*, which is more faithful to the frequently appearing Italian title *De Secreti* (no. 85). But most of the German translations of the *Secreti* stick to the title *Kunstbuch* (nos. 83, 84, 91, 95, 111, 114, 127, 143, and 164). There is a clear correspondence in title between *Kunstbuch* and *Kunstbüchlein*. The first means 'art book', the second 'art booklet'. I contend that the success of *Kunstbüchlein* could satisfy the German market for a longer time than in other countries. When the *Secrets* finally made their entrance, they assimilated a title that could easily be understood by the public. The *Kunstbüchlein* became a known concept very early in its printing history. There is an overlap in content between the *Kunstbüchlein* and the *Secrets*, because both contain art technological recipes of the same calibre. Adapting the title of the *Secrets* to the common knowledge of people guaranteed the success of a book.

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[23] The first Latin edition was a translation from an Italian edition. The first Italian edition was a translation of the Latin manuscript. The origin of the *Secreti* will be discussed in the second and third chapter of Part I.
[24] Stijnman 2012.
[25] Eamon 1994, pp. 121-126.
[26] I will examine the possibility of an earlier Spanish edition during this and the following chapter.
[27] Stijnman 2012.

In this part I have mapped out the publishing history of a possible story line or narrative in technical literature, starting and ending with the German *Kunstbüchlein*, building on the case study of William Eamon. What Eamon did around the group of texts around the *Kunstbüchlein* is drawing conclusions on science and popular culture in early modern Germany and he extends this study to a wider European context and also to the wider phenomenon of the frequent appearing of technical literature in vernacular. Eamon refers to this period as the age of 'how to'. As mentioned above, he focuses on textual interdependence. I use his argument to demonstrate that recipe books behave as rhizome. In other words, I connect his case study to the rhizome model developed by Deleuze and Guattari.

This PhD thesis follows the narrative of Eamon considering the group of German and European vernacular recipes books. Other narratives would have been possible, exactly because these recipe books behave as rhizome. These recipe books are assemblages, they are printers' products, built out of other collections and compilations. There is always a connection to be found between the different recipe books. Recipe books can reproduce other recipe books, in a quite literal way. They can be a translation of another recipe book. They can take a selection of another recipe book or add another selection to a particular recipe book. This can all happen with or without the preservation of the original title. A title can be a connection or a break point. The heterogeneity of subjects and its change or mutation is equally a particularity of these recipe books. In this part I have shown one possible configuration of this landscape of multiple recipe books. This means that the transmission of art technological texts, and also practical knowledge, is complex and hard to pin down. The transmission patterns are complex and the network of information flow is a rhizomatic one, meaning full of multiple decentralized connections.

2.   The appearance of textual variations

The discussion above shows the textual interdependence between a group of early modern art technical sources. It is an account mainly relying on the level of publications and thus this could be described as the textual interdependence on a macro level. In the current part, the micro level of the interdependence of texts will be discussed. I will rely

on the study of Michelle DiMeo on authorship and medical networks[28] to demonstrate that the copying of texts proceeded with different rules than those we adhere to under today's concept of copying. Further I will rely on my own findings concerning Wellcome MS 7113 regarding copying issues, translation, and oral transmission.[29]

During my research I came across theories about authorship that I believe to be based on misconceptions. As will be further explored in the next chapter there is the argument of two scholars Feuillet de Conches and Baschet, for example, who published a work on *Les blondes femmes selon les peintres de l'école de Venise* (1865) arguing that textual overlap or textual coherence between two or more works would indicate the same author for all works.[30] The outcome of their research on a group of recipe books remains influential today. I argue that argumentation about authorship and textual overlap indicating one author are impractical arguments for practical knowledge. The early modern concept of making a book is different from ours. For instance, there was a different understanding of plagiarism. In fact, copying was a frequent and common practice among books for personal use and books for publication. However, the copying itself was equally a different procedure than the one we understand today.

Michelle DiMeo demonstrated that copying practices in seventeenth century England did not proceed according our conventions. She points out that two British Library recipe books from the Brockman family contain the same recipe to make cherry water.[31] Granddaughter Elisabeth copied this recipe from the recipe book of her grandmother Ann. What for early modern standards would be the same, for our eyes is still characterized by a lot of differences. Grandmother Ann generally writes numbers with full words and she uses punctuation, meanwhile granddaughter Elizabeth writes the numbers with numbers and uses close to no punctuation. Then there is a clear difference in the concluding expressions of the recipe. Ann wrote 'the virtue you shall find to be good', meanwhile Elizabeth wrote 'you shall find it to be good'. Clearly copying involves a good amount of personal elaboration. This lines up with the findings of Kari Anne Rand Schmidt who discussed the method of registration of recipes and collections of recipes for *The Index of Middle English Prose*. She notes that repetition between individual recipes in recipe collections is very rare. And if the individual repeated recipes are compared textually, they show considerable differences, alternating punctuation,

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[28] DiMeo 2013.
[29] Leemans 2015b
[30] Baschet and Feuillet de Conches 1865, pp. 102; 181-183.
[31] DiMeo and Pennell 2013, pp. 25-46.

vocabulary, and omitting or adding things.[32] Dimeo found that the copying of texts in the early modern world lead to textual variations.

The manuscript that illustrates my findings and reflections about textual variations best is MS 7113 of the Wellcome Library in London. This manuscript contains the title 'Booke of Receipts of Physickes, Salues, Waters, Cordialls, Preserues and Cookery' and belongs to Mrs Fanshawe. It is Joseph Averie, a scribe who started this manuscript, who wrote and signed the title page in 1651. The manuscript kept on being supplemented until 1707 by the heirs of Mrs Fanshawe. Mrs Fanshawe is better known as Lady Ann Fanshawe (1625–1680), wife of the diplomat and translator Sir Richard Fanshawe (1608–1666). This English couple resided multiple times in the Iberian Peninsula.[33] This reality is reflected in the recipe book. The collection of recipes shows the European itinerary of the couple haphazardly. In terms of recipes I would divide the recipes into English and foreign recipes. The English recipes are mainly kitchen and medical recipes. The foreign recipes appear in translation and in the original language. Among this group there are several Mediterranean recipes; they are spread all over the manuscript and they address mainly perfumes. In this group I would place the recipes of interest considering the study of transmission. These are several recipes of Spanish origin, all translated into English, and one Portuguese recipe that appears in original and translated version.

The Spanish knowledge that one can find in this manuscript is almost entirely related to perfumes. Most of the perfumes are amber based and often have other purposes than perfuming the human skin: we meet the perfuming of gloves, the perfuming of leather, pastilles to burn etc. The group of recipes of Spanish origin appears twice in the manuscript; first, as stand-alone recipes in the proximity of other recipes for waters and powders. Then, they appear for a second time as a group in a little booklet stitched into the manuscript. They were selected and copied in the same order of appearance as in the manuscript. Here the copying of recipes has the function to gather a selection of recipes that originally appear across the whole of the manuscript. This can be explained by the material support of an originally separate booklet. So this precise group of recipes appear twice in MS 7113. What is significant is the fact that recipes were gathered and re-written again in a very neat handwriting and were given an additional space on separate leaves. The copying of the recipes happened in a literal way: word for

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[32] Rand Schmidt 1994, pp. 425-427.
[33] The recipe book was started at return of the stay in Spain between February 1650 and 1651.

word. I argue that the personal elaboration of a text already happened in the first stage. Thus the second stage of copying the recipes in one document did not need any further textual elaboration. In the manuscript itself the recipes appear in a more arbitrary way, meanwhile in the copied quire the section of recipes appears to be ordered. Literal copying served a purpose. In the study of DiMeo it becomes clear that copying for personal use was not strictly literary and rather changed according to personalized elaborations. Here the case study shows an example of literary copying. I argue that the second literally copied group of perfume recipes had a representative function. These recipes appear in a neat handwriting in a separate booklet. Most likely this booklet was meant to show people. It ended up stitched to the whole manuscript probably at the time of later generations, in order to prevent loss.

This particular set of recipes provides us with plenty of information about the Anglo-Iberian context in which knowledge transmission took place. The recipes register the place, time, and people involved. We know that the knowledge transmission about perfumes took place in Madrid between 1656 and 1665. There is even a concrete place indicated: *Casa de las Siete Chimeneas*, which was the ambassadorial house of the couple. This is the very place where the 1665 peace treaty between England and Spain was signed and also the place where Richard Fanshawe died in 1666.[34] The person whom the recipes come from is called Francisco Morenas. He was at times accompanied and also replaced by his cousin, who is also his assistant. Morenas or Moreno and his assistant performed demonstrations of how to make perfumes. Often expert knowledge had to be demonstrated in order to be fully comprehended. Wellcome MS 7113 offers this very happy reference to this probably more widely used practice. The study of the Spanish recipes in Wellcome MS 7113 shows that knowledge was transmitted orally through demonstrations. It also shows that the copying of recipes could have another function than just transferring knowledge.

A different case in Wellcome MS 7113 is the Portuguese recipe. One of the pearls of Wellcome MS 7113 is the recipe for *pão de ló*. The recipe appears around the middle of the manuscript, not too far from the two groups of Spanish recipes. *Pão de ló* is a Portuguese sweet cake which is still eaten today. It is a fluffy and light cake made of eggs, sugar, and flower. Early modern visual representations of *Pão de ló* are known by the seventeenth century Portuguese still-life painter Josefa de Obidos. A Portuguese

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[34] Davidson 2004.

dictionary of synonyms registers that the word *bate* would indicate the same as *Pão de ló*.[35] *Bate* presumably comes from the verb *bater* which means to beat, to hit, or to batter. This refers directly to the main preparation technique. The recipe of Wellcome MS 7113 prescribes to whisk twenty eggs, one pound of sugar and one pound of flour for 'the space of an hour or five quarters'. After this action of a continuous rapid sweeping motion the dough is put into a baking basin that is clothed with paper after which it is baked in the oven. Certainly the history of *pão de ló* has yet to be written: from my preliminary research it seems that the cake and the term do not always go together in history. The fifteenth century Ms I-E-33 at the National Library of Naples contains a recipe for *pão de ló*, although it misses two of the basic ingredients: eggs and flower.[36] The basic ingredients of this *pão de ló* are sugar and almonds and it is not baked in the oven but prepared over the fire. Not quite the *pão de ló* Ann Fanshawe was interested in. The Naples variant corresponds to one of the recipes for *pão de ló* in *Arte de Cozinha*, the first Portuguese recipe book put into print, in the 1680's. Here the recipe is called *pão de ló de amendoas*. The same printed recipe book has a similar *pão de ló* that is baked in the oven with a base of sugar, flour, and eggs; and named it *pão de ló fofo*, or a fluffy *pão de ló*. Different recipes, names, and concepts of *pão de ló* were present at different moments in history. The concept of *pão de ló* is not consistent throughout history, and neither the recipes.

Wellcome MS 7113 certainly deserves its place among the highlights of the history of this sweet. It indicates foreign interest in European transmission of Portuguese kitchen wisdom. And this becomes relevant for the topic of transmission. The recipe appears twice, but the repetition has a different function than the Spanish recipes. First the English translation appears and then the Portuguese original. The translation seems to be quite accurate apart from one curiosity. The original recipe is constructed using the common form to address its public, through the imperative: '*Premeiram se tomao vinte ovos*' or 'First you take twenty eggs'. The English translation does not follow this international accepted form, and translates it as 'First they take twenty eggs'. I can eliminate the idea that the person translating has no experience with recipes or with translating, because along the way other imperatives come up and they are translated as intended. What I argue is that consciously or unconsciously the person translating did take a position: that of an outsider. He or she translates the recipe as describing how the Portuguese make *pão*

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[35] Another synonym for *pão de ló* would be *pão leve:* Lopes 1977, p. 817.f
[36] A facsimile and transcription of Ms I-E-33 is found in Gomes Filho 1963; for the recipes of *pão de llo* see Gomes Filho 1963, pp. 132-135.

de ló. So the recipe was not only taken up in the collection for further practical reproduction. It was written down to register what and how the Portuguese or 'the other group' would produce the sweet. This is strengthened by the fact that the original Portuguese recipe is written down as well. Note that in Wellcome MS 7113 the Portuguese recipe is the only recipe of foreign origin appearing in the original language. Also here applies the conclusions of DiMeo. The translation comes with a certain degree of elaboration, that of taking a position of an outsider, resulting in an alteration in the text.

This recipe certainly did not escape my attention as it has two different languages, two different scripts, two different uses of the imperative, and two different means of transmission. I conclude that there are a lot of questions around *pão de ló*.[37] Whatever the historical succession of events for this recipe, it involves several people. Which brings me to Elaine Leong's theory where families collaborate and construct a manuscript in several stages. Important for my argument here is that the presumably English person who wrote down the translation takes an unusual point of view for a recipe. The writer, who might be also the translator, includes in the translation a particular perception of the Portuguese, that of a different people. Earlier in this part I discussed that the simple action of copying a text can easily lead to the creation of textual variants. The early modern concept of copying did not necessarily imply a literal taking over of every single word in the same sequence. Here I conclude that also translating and dictating are responsible for textual variants in instructions, recipes, and practical knowledge. Textual variants are texts that contain a significant textual overlap. In the rhizome metaphor, every textual variant is a new offshoot of the root. They are similar but not the same and the offshoot can start growing in whichever way, at whichever time, and at whichever place.

3. Contextualizing knowledge transmission: from origin to wider circulation

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[37] Many questions remain. For instance who translated the text? Was it Richard, husband of Ann Fanshawe and translator of Camoes' *Lusiads* (1652)? A minor error betrays that the Portuguese version was written by a non-native speaker. The recipe talks about the paper in female terms 'a papel', rather than in masculine terms 'o papel'. This would mean that it was copied from a textual source where the 'o' was misread as an 'a', which is an acceptable mistake for a non-native speaker.

In the previous part I addressed the theory of practical knowledge transmission, applying the rhizome metaphor and using the elaboration of a concrete transmission example about textual transmission of art technical knowledge, the *Kunstbüchlein*. This macro study shows that practical knowledge expands over the European continent. Through a micro study of textual variants, I shed light upon one concrete aspect of transmission. One of the examples used was the fascinating recipe book of Lady Ann Fanshawe. The appearance of Portuguese and Spanish recipes is quite normal as the continental transmission of recipes suggests. But in this particular case one can see how the practical living conditions facilitate knowledge transfers. The Fanshawe couple had an ambassadorial function in the Iberian Peninsula. This means that not the recipes travelled, but the people or users travelled. In the current part I provide two examples that contextualize the knowledge transmission processes. Inherent to the process of knowledge transmission is the production of new knowledge. The writing down of knowledge includes minor or major changes, which leads to new knowledge production.

I argue that practical knowledge found its origin in specialized and adapted practical environments. Steven Shapin stated that 'knowledge […] does not stand outside of practical activity: it is made and sustained through situated practical activity'.[38] In light of this I develop two case studies about the concrete circumstances of practical knowledge transmission. I focus on 1) the professional work environment of artists, more precisely the painter's studio, and 2) on secret academies with laboratories.

The professional environment is a nucleus where practical knowledge was actually applied and where textual sources of practical knowledge were created. These texts sometimes left the work environment and got into a wider circulation. This is how such texts could get into hands of professional collectors who had their eye on publishing. Thus, originally professional knowledge came (at a later stage) into print. The two cases studies, of the workshop and the academy, show similar transmission contexts.

My conclusions on the concrete context of practical knowledge transmission are based on two literary works: a dialogue and an introduction to a printed recipe book. Both texts are literary products, meaning they are fictions. However, both cases reflect an early modern reality that was created with the purpose of resembling a realistic situation.

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[38] Shapin 1994, p. xix.

3.1 Knowledge transmission in the professional environment of a painter's workshop

In this part I analyse the artists' workshop as a professional environment where practical knowledge transfer was an organized procedure. The situation of the artist's workshop serves as an example of how practical knowledge circulated and was disseminated in a professional environment. The concept of rhizomatic transmission persisted even in a highly organized professional environment. As will be seen, the knowledge transmission was based on the learning process of the apprentice, who received a manual from the leading artist. The manual contained a collection of relevant recipes. The application of practical knowledge was the prime reason for the existence of a workshop. For instance, a painter that needed to paint an altarpiece needed a space to carry out the work.

Why practical knowledge is transmitted in workshops is to comply in the workshops purpose and also to ensure in the durability of the activity. An efficient and large-scale workshop had several people in service; sometimes the children or relatives of the artist.[39] Each of the individuals working within this workshop needed to know the rules of the art. To guarantee the survival of a workshop, practical knowledge would have to be passed on to employees and future generations of artists. It is assumed that a significant part of specialized education in the early modern workshop would have happened through demonstration and oral transmission. However, there are textual indications that shed light on textual transmission as a valid option for knowledge transfer from master to students in a workshop. I argue that within a professional environment specialist knowledge circulated both in an oral and demonstrative way, and in a textual way.

I will use the literary source *Modo da tener nel dipingere* (undated) of Giovanni Battista Volpato (1633–1706) to demonstrate the transmission modalities of textual practical knowledge in the workshop. The Volpato text is a dialogue, which is a piece of fiction. However, dialogues could serve educational purposes, as is seen with one of Desiderius Erasmus' most known works the *Colloquies*. The first printed edition of 1518 is known as *Familiarium colloquiorum formulae*, but other, later enlarged, editions followed. The purpose

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[39] In the medieval and early modern period, artist's workshops ran as family businesses. Workshop efficiency is often associated with large amount of pupils. Michelangelo is considered atypical by Hicks because he did not work often with studio assistants. See Rubens 2015; Hicks 2015.

was to teach schoolboys good Latin, and as mentioned, the literary form of the dialogue was used. [40] The Volpato dialogue reflects a spoken conversation between two apprentices, of which the younger one, named Silvius, has close to no experience and the older one has mastered the mechanical parts of painting. Silvius requests that his elder should teach him 'the mode of preparing canvas, colours, and those things which pertain to the business in which I [Silvius] am engaged, as I [Silvius] have had little practice in such things'.[41] This indicates that one needs practice in order to learn. The dialogue develops itself in a conversation where knowledge is being transmitted.

Textually speaking, it looks like recipes from a recipe book were integrated. The style of the following answer to the question how to wash paintings seems to be taken straight out of a recipe book: 'Take some ashes, which have been sifted very fine that there may not be any pieces of charcoal or any large substances which may scratch the picture; put them into a small pipkin with pure water, and with a sponge spread them all over the painting, and clean it by moving about the sponge gently, then wash it off quickly with pure water, because the ashes corrode the colour. Afterwards wash it well with clear water, dry it with a linen cloth, and then varnish it with white of egg'. This precise recipe is being criticized by the elder apprentice, because washing paintings damages the last refining layers of a painting and therefore also the final quality. The dialogue has a clear didactic purpose. It contextualizes practical knowledge in the artists' workshop.

This dialogue contextualizes concrete sources and their accessibility. The advice Silvius' elder gives is based on the work procedures of known painters, such as Bassano, who was one of the actual masters of Volpato, the dialogue's author. The apprentice names his sources and gives insight on how to get the content of those sources. The precise part of the dialogue opens with a question from Silvius and answers from the elder:

S.   How are varnishes made?

F.   Varnishes are of different kinds, some we make ourselves, some we buy, like the thick varnish, that of amber we buy, but mastic varnish I make myself.

S.   So tell me how do you make it?

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[40] Rummel 1990, p. 239.
[41] Translation taken from Merrifield 1999 [1849], p. 726.

F.   I take pulverized white mastic, and put it into a recipient[42] with spirit or turpentine, or naphtha, in such quantities that the spirit of turpentine may rise two-thirds above the mastic in the recipient. I set the recipient over the fire, and boil it until the mastic is perfectly dissolved, and sometimes add to it a little *olio d'abezzo*. This serves for varnishing finished pictures, but if you wish to see divers modes of preparing varnishes, consult Armenio da Faenza and Rafael Borghini, who teach all things pertaining to our trade, and how to make other kinds of varnishes, as well as the proper mode of using them.

S.   I don't have these books, nor can I see them.

F.   Borrow them, and write down what you wish to know on this subject; perhaps your master may have the works, and then you may use them, because as they wrote of other things appertaining to painters, if you master studies painting, he will most certainly have them.[43]

The narrative around the recipes brings the recipes and their application in context. The dialogue transforms this recipe heading into a question of the younger apprentice: 'How are varnishes made?'. The elder apprentice replies that there are different varnishes, of which some are made by himself and some are bought. This kind of information would generally be missing from a recipe book. Here, the dialogue contextualizes the topic of varnishes.

What the elder apprentice adds after the recipe is of major importance for the argument of the transmission of practical knowledge in a professional workshop environment. From this piece I deduce that textual sources were used in the workshop and that the transmission of textual knowledge was a fact. First the elder gives information about which sources are used. These are 'Armenio da Faenza and Rafael Borghini'. Armenio da Faenza today is commonly known as Armenini (1525–1609), he was a painter, copyist, writer, and priest. He published but one work entitled *De' veri precetti della pittura* (1587). This is the work the elder apprentice refers to. Armenini's work is not exactly a recipe book. The work contains three books, which digress on the basics of the painting trade and on iconography. It is quite possible he had the second edition

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[42] The original text says *ampola*. According to Treccani *ampólla* is a recipient of glass, but it can also appear in earth ware or metal. Merrifield translates *ampola* with *pipkin*, which according to the OED is a small pot or pan, usually of earth ware. I preferred to replace *pipkin* with the more generalizing term recipient. Cf. OED; Treccani.

[43] Merrifield 1999 [1849], pp. 742-743. Translation mine, but based on Merrifield's translation.

of 1678 in mind.[44] The second work mentioned by the apprentice is *Il riposo* (1584) of Rafaello Borghini (1537–1588), which has painting and sculpture as its subject. This work discusses the main topics of both arts and teaches the basics. Two important 16th century treatises concerning painting make part of the canon of textual sources about practical knowledge.

The dialogue of Volpato contains additional information relevant for the transmission of practical knowledge. A bit further on in the dialogue, the younger apprentice asks the elder if he is the one who prepares the painter's palette. As this is among the apprentice's responsibilities, the elder apprentice gives an account:

> S.   I pray, tell me, do you set your master's palette?
>
> F.   Certainly; I also distemper all the powder colours, and it is sufficient for him to tell me what he wants to paint, for I know what colours I ought to put on the palette; I wash the sketches, I oil them, I varnish them, and yet to some I apply the white of egg according to his orders; and then he has given me in writing full instructions in the distempering of the colours that I may know what to do, and his directions exactly correspond with those of Armenino da Faenza, and this you also may write them out, for besides this he teaches the whole process. Father Lana also, a Jesuit, has treated of this matter in his discourse on painting.[45]

In this part the apprentice communicates that his master gave him a handwritten[46] document with all the information he needed to know about colours. Furthermore, there seems to be a textual overlap between the text of his master Bassano and the text of Armenini. This means that Bassano's text was adapted to the practical working conditions of his workshop. In this way the elder apprentice could directly apply it. The recipe and procedures were partially taken from Armenini, but probably also from other sources such as the Jesuit Francesco Lana (1631–1687), who wrote *Prodromo ovvero saggio di alcuna invenzioni nuove* (1670), a book about inventions. There is a possibility Bassano's collection of recipes and procedures contained procedures that came out of proper experimenting, but this will be discussed in the next argument about academies. I deduce from the dialogue that in a professional environment a master possesses printed and

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[44] This could help in the further determining of the production date of the Volpato's dialogue. Merrifield determines it should be written at least after the work of Lana. Cf. Merrifield 1999 [1849], p. 722.

[45] Merrifield 1999 [1849], pp. 746-747.

[46] The original text says *in scritto*: cf. Ruscelli 1567, fol. 3v.

handwritten books containing practical knowledge. The master lends printed copies for proper research to his students and presumably provides students with selections of recipes and procedures adapted to the workshop tasks. Students receive printed works to be copied from and they receive concrete handwritten guides. Handwritings in the professional environment thus contain concrete and useful fragments of different works. This situation corresponds in some ways to the recipe books of non-specialists. Both are marked by a fragmentary character, precisely because these writings grow and develop based on the copying of selected material.

Volpato's dialogue contains a lot of information about the practical side of workshop practices and knowledge transmission. The difference between Volpato's and a standard recipe book is that Volpato's text gives insights into the context wherein recipes were used and how the recipes were transmitted. I conclude that in the specialist environment of the painter's workshop, there was knowledge transmission through oral, demonstrational, and textual means. Among the textual sources there might have been both printed and handwritten sources. The dialogue in particular gives insights into the transmission patterns and fragmentary character of handwritten recipe books in the workshop which was apart from a physically adapted workspace of an artist, also a hierarchic enterprise and a training centre of the new generation of artists.

This dialogue offers contextual insights in textual transmission in the workshop of the painter. This fragment from the dialogue not only teaches us that textual sources were used alongside oral and visual knowledge transmission, it tells us which textual sources were used, and it also tells us more about how they were used. The apprentice tells his younger colleague to borrow written works and copy exactly what is of use. The transmission happens through the borrowing of works. In this case textual transmission is based on interpersonal contacts and professional networks. On top of this the reader receives information about transmission dynamics. We can deduce that borrowed texts were copied. Only the useful parts or parts of interest were copied. This means that practical knowledge first went through a process of selection before it was copied. The dialogue of Volpato shows that selective copying of textual sources with practical knowledge was a custom in the professional environment of the painter.

3.2   Practical knowledge, laboratories, and secret societies

The first case study of knowledge transmission in a professional environment was the artist's studio. Here I present a case study of knowledge transmission in another environment where practical knowledge was put into practice: the laboratory. The posthumous *Secreti nuovi di maravigliosa virtu* (1567) of Girolamo Ruscelli can offer an interesting insight in the concreteness of the organization, operating, and materiality of a secret society and its functions. The text suggests that the secret society contains a laboratory where all recipes are executed in order to verify their truthfulness.

Ruscelli is mostly known as the author behind the books of secrets of the more famous Alessio Piemonese. Ruscelli is also known for the foundation of the *Academia dello Sdegno* or the 'academy of disdain' in Rome.[47] The *Secreti nuovi* gives a lengthy proem about the functioning of his Neapolitan 'academia filosofica […] che fusse e si chiamasse secreta' or the philosophical academy that would remain and would be named 'secret'.[48] According to Eamon and Paheau's calculations, the academy would have been founded around 1542.[49] An academy with this precise name *Accademia Secreta* does not appear in the British Library Database of Italian Academies, neither is it discussed in the authoritative work about Italian academies of Michele Maylender.[50] The Database of Italian Academies of the British Library does list Girolamo Ruscelli in a Neapolitan academy, named *Accademia Martiraniana* that was active between the 1530s and 1555 with the following members: Cosmo and Giano Anisio, Scipione Capece, Bernardino Martirano, Agostino Nifo, Bernardino Rota and Girolamo Ruscelli.[51] But this is a literary academy; this academy was not interested in the study of natural philosophy or practical knowledge in any way.[52] The existence of the society is one of the mysterious veils resting upon this case.[53]

Eamon and Paheau raised questions about whether the society really existed, but did not reach a definitive conclusion. The society could have been an actual operative organ, but it could also have been an imaginary society and fruit of Ruscelli's literary pen. If it was a fake, the society might have been forged in order to claim authority over

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[47] For problems about attribution of Alessio Piemontese's writings, cf. chapter three of Part I of this dissertation.

[48] Ruscelli 1567, fol. 1r.

[49] Eamon and Paheau 1984, p. 329.

[50] I refer to Maylender and Rava 1926-1930.

[51] http://www.bl.uk/catalogues/ItalianAcademies/

[52] Maylender and Rava 1926-1930, IV, pp. 20-21.

[53] Worth investigating is the idea that the *Accademia Secreta* is possibly the *Accademia Martiraniana*.

Alessio Piemontese's secrets, which Ruscelli edited.[54] It is quite possible that the academy in fact was a product of the literary mind of Ruscelli, as he declares after stating their working method that he sends the chosen secrets to the printer. Whether real or not, the description of the procedures to deal with practical knowledge and the space this happened in are certainly of great value. If the society belongs to the realm of fantasy, it still represents an ideal image of a knowledge producing entity. Eamon and Paheau point out the possibility that this could have been a utopian society.[55] The interest in this fictitious text lies in the fact that it was probably created in order to sustain the credibility of the recipe book.

Ruscelli's *Secreti nuovi* contains two parts: a prelude and a recipe book. The more interesting part here is mainly the prelude, which contains a lengthy description about the space where the secret society met and had their daily activities. Unfortunately, there is no concrete information about the requirements for a laboratory. The description of the space housing the laboratory is focused on the structure of the building and beautifying elements. Another part of the description treats the composition and conduct of the members, the financial situation and the secrecy rules.

Even though the account may be based on fictitious facts, I consider it useful to discuss the transmission patterns and procedures of the *Accademia Secreta*, held against concrete givens about similar institutions and their ways. The principal purpose of the *Accademia Secreta* was the study of 'true anatomy of the things and operations of nature'.[56] Their intention was to learn themselves, adding that disciplines such as medicine were mostly helped by *l'arte*, intending precisely how the OED definition of art puts it: 'skill in doing something, esp. as the result of knowledge or practice'.[57] They were first and foremost interested in 'all kinds of secrets for all sorts of people, whether they be rich, & pour, learned, & uncultivated, & man, & woman, young or old'.[58] The secrets they could find primarily came from textual sources: 'from printed books or old and new manuscripts'.[59] There was a clear order and method in dealing with experiments: they were all repeated three times to check their truthfulness.[60] The collecting of writings with

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[54] Eamon and Paheau 1984, p. 336.
[55] Eamon and Paheau link it to the work of Frank and Fritzie Manuel about *Utopian Thought in the Western World* (1979). This work offers plenty of case studies of utopian topoi in early modern (and later) literature. See Manuel and Manuel 1979.
[56] Ruscelli 1567, fol. 3v. (English translation from Eamon and Paheau 1984)
[57] OED.
[58] Ruscelli 1567, fol. 3v. (English translation from Eamon and Paheau 1984)
[59] Ruscelli 1567, fol. 3v. (English translation from Eamon and Paheau 1984)
[60] Ruscelli 1567, fol. 3v.

practical knowledge and the repeating of the procedures stood at the core of the functioning of the *Accademia Secreta*. Interesting is the fact that there seems to be a single mode of collecting of practical knowledge, and this is through writings. In the next chapter I will expand on other methods of practical knowledge acquisition, such as oral acquisition of knowledge, which seems to be absent here. The *Secreti nuovi* of Ruscelli, which borrows secrets that passed through the *Accademia Secreta*, is tendentially a work based on a textual tradition of practical knowledge. One of the works Ruscelli copies from is Isabella Cortese's *Secreti* (1561) that is also based primarily on other textual sources. This contributes to the idea that practical knowledge survives in multiple ways. In this example one sees that once practical knowledge gets into textual circulation, it can remain in circulation through copying. In the case of Cortese, the author presumably took some fragments out of manuscript and printed them, and it was later copied by Ruscelli and put into print again. The same fragments were put into print through the book of Cortese plenty of times.[61] The study of Ruscelli's *Nuovi secreti* shows a literary way of collecting recipes alongside a textual circulation of practical knowledge.

Paracelsus proclaimed that 'experience was the crucial link in obtaining knowledge'.[62] The *Accademia Secreta* would be the institution that offered guarantees of the utility of the recipes of both the publications of Alessio Piemontese and Girolamo Ruscelli. The legitimation of their judgement would lie in their system of testing and re-enacting the recipes. It is written that they would repeat recipes three times: 'in doing such experiments we adopt an order and method, one better than which cannot be found or imagined, as will be recounted next. Of all those secrets which we found to be true by doing three experiments on each in the manner that will be described'.[63] My contribution offers a sceptical note to this practice, which is opposing the secrecy policy of the society. The practical side of their rule to test every recipe three times is unsustainable. One wonders how the antidote for the poison and Black Death for pope Clement VII was re-enacted. Or for this matter, how did they deal with the broad selection of medical cures? Did they invite sick people to their secret place for treatment, or did they go on the streets to treat people? There are one thousand and twenty-four medical recipes in *Secreti nuovi*.[64] This means that the secret society needed at least three-thusand seventy-two people to be cured. I argue that involving enormous amounts of

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[61] For more on this topic and concrete references, see chapter three of Part I.
[62] Quotation from Smith 2008, p. 289.
[63] Ruscelli 1567, fol. 3v. (English translation from Eamon and Paheau 1984)
[64] For a breakdown of recipes, cf. Eamon and Paheau 1984, pp. 335-336.

individuals would make the secret society more of a known society, which would go against the foundations of the society. The prerequisite of testing might have been a measure taken in order to create believable conditions for accepting the book as truth.

The statement about experimenting and re-enacting recipes can be criticised through a textual and book historical study, which I develop more fully in the third chapter. Ruscelli's introduction contains crucial information about his sources. Ruscelli and his co-members of the secret society used exclusively textual sources. Ruscelli literally copies parts of books entirely. As I will point out in the third chapter of Part I, he copied the entire first chapter of the first edition of Isabella Cortese's *Secreti* (1561), including the ending formula of the first chapter. This ending formula of Cortese is not in place in Ruscelli's work as he ends his first chapter only much later. This is an obvious sign of blind copying. And blind copying does not contain a lot of substantial interaction with the recipes. The testing of recipes and selecting them on their truthfulness would mean that a selection is found in the examined materials, which is missing in the *Secreti nuovi*. Based on the textual study, I conclude that it is unlikely that the testing claimed in the introduction actually took place.

During the sixteenth century in different places on Italian soil, secret scientific societies entered the scene of the study of nature. These societies were called *accademie* or academies. Plenty of them had their interest invested in natural philosophy, such as the *Accademia Secreta* from Naples in the 1540s. Girolamo Ruscelli claims to be a member of this secret society. Possibly the description is a literary product, rather than a faithful account of an actual society. If it is truly a literary product, then it is still useful for this argument because it reflects a certain credible ideal. The description about procedures is of importance to understand how people reasoned about experimenting and about finding truth. Furthermore, the account is of use because it talks about the sources, which appear to be exclusively textual.

3.   Conclusion

The second chapter of Part I of this PhD dissertation has dealth with practical knowledge transmission. There were three approaches used to discuss this subject. 1) The first pillar was the building of a theoretical framework through the metaphor of rhizome, developed by Gilles Deleuze and Félix Guattari for the first time in 1976. 2) The second pillar demonstrated the application of the theory, through a textual study of transmission patterns. First, the macro level of transmission dynamics is discussed through the example of the German *Kunstbüchlein* and their spread across Europe. Second, the micro level of textual transmission is discussed through the study of how textual variants come to life, for instance through copying, oral transmission and translation. 3) The third pillar was the contextualization of practical knowledge transmission. Here two typical sites of practical knowledge, the artist's studio and the secret academy, brought to light various patterns of knowledge transmission. For the professional work environment as the studio or workshop of a painter, one can see that there is a multifunctional dissemination pattern of practical knowledge. In the case of the workshop one can easily rely on Bouza's 'communicative trinity' scheme, because oral, visual, and written communication are all a significant part of effective and purposeful knowledge transmission. The case of the *Secreti nuovi* and the literary construction of a secret academy points out a pattern of textual transmission. In the case of the artist's studio, necessary knowledge was selected from other sources and written down. This is how highly fragmentary manuscripts come into circulation, which later might come into printed circulation. In the case of a textual circulation I need to point out that while the selection I discussed shows a textual dissemination, there is practice involved by initiators of knowledge or mediators who wrote down the recipes and individual users on the home front who bought the recipe books. It is doubtful that there was actually a secret society as described that tested recipes according to rigid procedures. Practical knowledge behaves like a rhizome root. With practical knowledge we are dealing with both a fixed set of returning recipes and also with a multitude of changing recipes that appear in whatever sequence and selection. Following one channel or web of recipes is a way of researching practical knowledge. Both the multiform and the single mode disseminations are dynamics inherent to rhizome growing dynamics, or to practical knowledge transmission.

Chapter 3.

The Early Modern Users of Practical Knowledge:

Mediating the Information Flux

[…] the physician […] hath no particular acts demonstrative of his ability,

but is judged most by the event, which is ever but as it is taken:

for who can tell, if a patient die or recover,

or if a state be preserved or ruined,

whether it be art or accident?

Francis Bacon, 1605

1.   Introduction

The current chapter builds on the previous ones; the first chapter explored the nature of practical knowledge; the second chapter studied the transmission of practical knowledge through textual witnesses. This third chapter will study the users of practical knowledge, more precisely the category of users that is responsible for the transmission of practical

knowledge. My research aims at answering the following research questions: Who dealt with practical knowledge? What were the key roles in the transmission process? Who dominated the flux of practical information? Who were the mediators in the transmission process? What is the profile of the mediators? What is the position of mediators in the transmission process? Are there any interesting instances of identity? Are there relevant secrecy topoi in the literature the consumers and mediators produced?

The transmission of ideas and knoweldge, whether orally or textually, is a human interaction. I address these people as users or consumers, and I will use these terminologies interchangeably. Virtually all people were users, because everybody, irrespective of their level of literacy, age, gender, or class, dealt with instructions and recipes. Although everybody was a consumer, not everybody was responsible for the dissemination of the practical knowledge they used. Users of practical knowledge can be narrowed down into categories. Among the group of users there are people responsible for the dissemination. This group can be further divided into subcategories. The two subcategories of interest are gatekeepers and mediators. The category of gatekeepers are described by Karel Davids and are relevant for this dissertation because they are individuals with a function in the early modern society as knowledge provider.[1] This category may have written down their knowledge in manuscripts, but they are mainly active in a one-to-one relationship. Think for instance of wise women in the village where random people had access to for information about herbs and health.

Different from gatekeepers are the mediators of practical knowledge, a terminology that is developed within the boundaries of this PhD dissertation. The subgroup of mediators is responsible for most of the wide dissemination of practical knowledge. Mediators collected practical knowledge and spread it through print. Through this medium they reached for a big group of users, which mostly remained anonymous to them. Although both of them provide and manage practical knowledge, the mediators give a firm boost to the dissemination. The gatekeepers work more on a personal level with their public. The level of dissemination and involvement with the public is in both cases different. The profile of both practical knowledge providers will be explored subsequently.

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[1] Davids 2012.
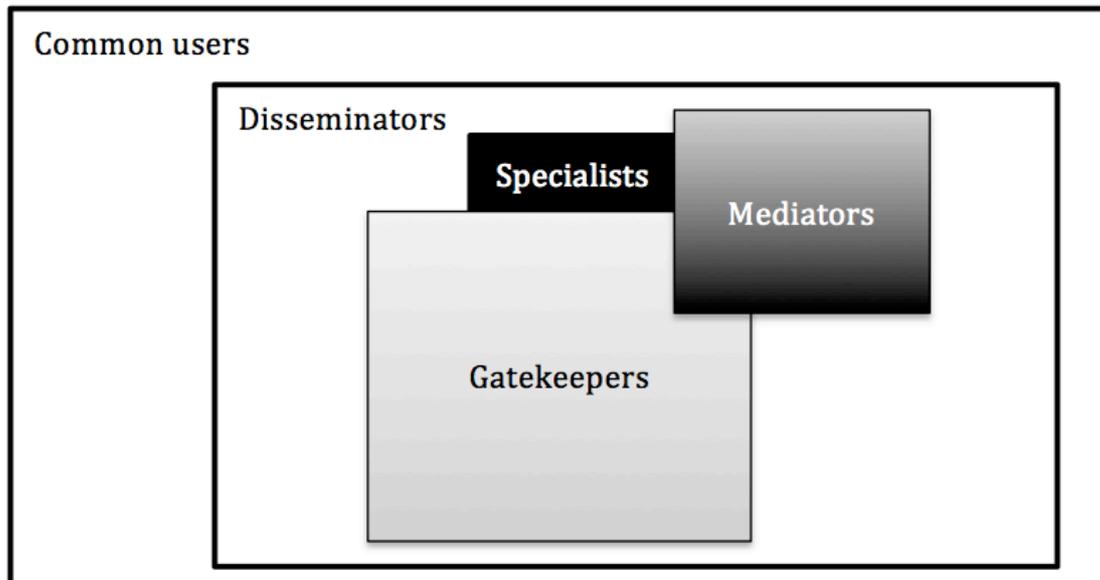
Fig. I.3.1. Diagram with categories of users

I argue that practical knowledge mediators did not necessarily posses over inherent or personal knowledge about the subject matters of the practical knowledge they disseminated. Mediators purposefully collect knowledge. This group can be further subdivided into two categories. Some of the mediators were professional writers who wrote for a living, I refer to this group as literary mediators. In their case the knowledge gathering aimed at being economically profitable. Often writers of recipe books are mistaken for specialists in the area. The results of the current chapter give nuance to the commonly thinking pattern that writers of recipe books are specialist-authors. An exemplar case is the question of the writer of the *Secreti* of Isabella Cortese. After a long-running debate, still no consensus has been reached about Isabella's case. Various scholars took into consideration the supposed alchemical speciality and long years of experience of Isabella Cortese, who is presented as the writer of the *Secreti*. Here a completely different hypothesis will be defended. The author or writer, whether called Isabella Cortese or not, does not claim to be a specialist in alchemy. Rather the contrary is true, the author recognizes his or her source: the work of a certain abbot Chirico was copied. It is this abbot who claims to be a specialist. The historiography and the critical reading of the *Secreti* of Isabella Cortese will be part of this chapter.

In this chapter I was able to grasp several issues of complex authorship through the critical reading of the books of secrets. Often answers lie enclosed within the books themselves, but are overlooked because of the existing theories. I argue that my chapter

contains a lot of original research. In the case of Isabella Cortese I will work with Cortese's *Secreti* and Vannoccio Biringuccio's *Pirotechnia*. Cortese's *Secreti* have often been treated poorly, as if the claims made in the book are all fraudulent. In this case, a concrete profile of the writer cannot be reconstructed based on the content of the book. The book faithfully recognizes its sources and therefore I conclude that often each of the instances are decontextualized in contemporary studies, because they are taken as being the writer's voice rather than the voice of other literary producers. Equally in the case of the *Pirotechnia*, it has been decontextualized in order to serve a hypothesis. In this chapter I address various issues that historiography has brought forth and offer a new reading of the sources.

The second subcategory of mediators of practical knowledge contains practitioners, referred to as mediating practitioners. In some cases practitioners decided to publish their findings, in other cases collectors of knowledge decided to interact and experiment with the found practical knowledge. Two cases will be examined: Leonardo Fioravanti and Hugh Plat. Both were medical practitioners, but both met a different cultural climate while exercising medicine. Fioravanti, who had a degree, was accused and jailed more than once, meanwhile Plat operated without degree and never met institutional headwind.

The current chapter does not only build on the previous one, it actually complements it. Each chapter examines a different point of view of the reality that recipe books are compilations; they are composed. Most recipe books contain information that comes from different sources. Among the information included, there often exists specialist information. Specialist knowledge in common recipe books is a strong indication that these recipe books are compilations. Specialist knowledge comes forth out of specialist environments. At a certain point in time, this specialist knowledge can leave the specialist environment, and get into wider circulation. In the previous chapter the dialogue of Volpato was used to demonstrate this tendency. This chapter argues that the wide spread of practical knowledge in early modern Europe was not the responsibility of experts, but rather of people with collector's interest, often linked to professional purposes.

1.1 Gatekeepers

The concept of gatekeepers of knowledge was described by Karel Davids in his article 'Who defined 'useful knowledge' in Early Modern Times?'.[2] Gatekeepers are people who dealt with an enormous flux of knowledge, meaning they went through procedures of 'selecting, translating and focusing'.[3] Since this category has been described before, it is relevant for the discussion of users and consumers of practical knowledge. Gatekeepers were present in early modern society, but they are not always visible to our eyes. He looked at a category of people who defined 'useful knowledge' in early modern times, because currently used definitions about 'useful knowledge' are 'ex post', meaning that it is today's scholars looking back and deciding what is useful and what not.[4] The determining criterion to single out a gatekeeper is his or her function in society. According to David's findings people who decided what was useful knowledge or gatekeepers were women, clergymen, and virtuosi. With virtuosi Davids follows the definition of John Cascoigne: virtuosi are people 'who had the time and leisure to advance knowledge either by collecting rarities or by promoting experiments'.[5] Davids describes how this precise category of gatekeepers almost comes to perish during the eighteenth century.[6] Already during the seventeenth and also the eighteenth century 'institutionalized, academic and formal knowledge tried to impost itself [...] all over Europe'.[7]

A bit less defined in terms of categories is the concept of Ursula Klein and E.C. Spary in their co-edited work *Materials and Expertise in Early Modern Europe*. Here they introduce that all practitioners in their publication about materials and expertise could be seen as gatekeepers because 'matter was both transformed and transformative: it left their workshops and laboratories in a new and different condition, but also went to alter the condition (social, physical, moral) of consumer and clients, from courts to

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[2] Davids 2012.
[3] Davids 2012, p. 73.
[4] Davids 2012, p. 69.
[5] Davids 2012, pp. 79-80, referring to Cascoigne John, *Joseph Banks and the English Englightment. Useful Knowledge and Polite Culture* (Cambridge: Cambridge University Press, 1994), 59-60. The working definition of Davids is similar to the one of William Eamon, who defines virtuosi as scholars, gentlemen, and curiosi. See Eamon 1994, p. 301.
[6] Davids 2012, pp. 73-76. Davids distinguishes between the Dutch context and other societies in the North Atlantic where 'gatekeepers of knowledge in the eighteenth century were primarily based at academies, societies, state agencies or publishing houses rather than at universities or similar institutions of higher learning'. See Davids 2012, p. 82.
[7] Polónia, Capelão and Giesteira 2016. I cited from this work in progress with permission of my supervisor Amélia Pólonia.

commoners'.[8] Klein and Spary use the term gatekeepers more in a context of economical profitability, and a certain output to a larger public. The current PhD thesis will rely on David's theory.

Women played a vital role in the collecting, consuming, and disseminating of practical knowledge. It is often argued that household literature and recipe books were products of female enterprise. However, Elaine Leong proposes a new reading and interpreting for recipe books in her article 'Collecting Knowledge for the Family'. She argues that recipe books can be seen as 'testaments of the interests and needs of particular families'.[9] Equally Sara Pennell argues that 'culinary knowledge is collectively generated'.[10] Leong studied the notebooks of Mary Cholmeley as a multi-stage and open-ended construction process, where several members of a family contributed and collaborated, both male and female.[11] Recipe books are often compiled by multiple members of a family, regardless of their gender. Still, institutionalized knowledge did not appeal on female disseminations.

Generally though, the users of practical knowledge are not determinable by gender or class. Gatekeepers are people manipulating the information flux and appurtenant material culture. Their actions do not always involve writing and therefore they form a more difficult category of subjects to investigate. Alessio Piemontese writes in his *Secreti* (1555) that he got his information 'not only from great men by doctrine, & great lords, but again from poor women, from artisans, from peasants, and every kind of person'.[12] Piemontese stresses that any person could be a potential source for practical knowledge.

This corresponds to what recipe books indicate as their sources. Recipe books of seventeenth-century England often recognize their source. This is the case of the recipe books of Ann Fanshawe (Wellcome MS 3117), or Johanna St. John (Wellcome MS 4338). Both recipe books frequently name and indicate their source, either in the margin or in the recipe itself. A fascinating fact about Wellcome MS 3117 is the appearance of plenty of attributions. There are two kinds of attributions. The first kind of attribution is that of provenance, indicating where a recipe comes from, such as 'Lady Butlers' or 'My mother'. The second type of attribution is that of ownership in the moment of the

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[8] Klein and Spary 2010, p. 22.
[9] Leong 2013, p. 81.
[10] Pennell 2004, p. 242.
[11] Leong 2013, pp. 84; 90.
[12] Translation is mine: 'da grandi huomini per dottrina, & da gran Signori, ma ancora da pouere feminelle, d'artegiani, da contadini, & da ogni sorte di persone' from Piemontese 1555, sig. A2v.

registration of the recipe, in this case the recipes belong to Ann Fanshawe. The manuscript registers transactions of knowledge; it registers from whom recipes come, and to whom they go. David Goldstein argues that the convention of attributing is a seventeenth-century usage. The whole of the recipe book MS 3117 attributes almost a hundred per cent of its recipes. And again Goldstein has traced a lot of the individuals and found that they came from different social backgrounds. The names figuring in the margins of the manuscript contain plenty of unknown people, but also fairly well known personalities such as Sir Kenelm Digby. The names in the margins form the social network of Ann Fanshawe. Many of them belong to the extended family.[13] This means that the family and their surroundings are a significant part of the sources for practical knowledge.

Sometimes recipes make a larger provenance known. A beautiful example is found in Wellcome MS 4338. Among the many recipes for curing breast cancer in Johanna St. John's recipe book, there is one which 'was used to a woman whose breast was to be cut off but was not broke & it kept her very many years without any paine or troble & at last dyed of another desease. La Child knew the women to whom it was taught by a French man'.[14] This recipe involves three people before it actually was taken up into Johanna's recipe book. A Frenchman taught a recipe to a woman who applied it. La Child knew this woman and clearly knew Johanna. La Child possibly means 'Lady Child', the manuscript often uses 'La' before names. This is also the case for 'La St. John Mary', which would be Lady St. John Mary.[15] In this example the recipe recognizes a known female user, an unknown female user and unknown male user as its sources. Source recognition can be found in the indication of provenance in recipe books.

Virtually everybody in early modern Europe could be a gatekeeper of practical knowledge to greater or lesser degree. Gatekeepers are not bound to gender or class, but rather to a position in society. They are the people who manage or control the information flux concerning practical knowledge. Everybody who entered the cycle of selecting, using, and passing on of practical knowledge could be seen as a gatekeeper.

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[13] Goldstein 2013, pp. 145-146.
[14] London, Wellcome Library: Wellcome MS 4338, fol. 18v.
[15] London, Wellcome Library: Wellcome MS 4338, fol. 15v.

1.2 Mediators

Mediators are managers of the information flux. Mediators control the information flux; they are the professional providers of practical knowledge.[16] They serve as a hatch to practical knowledge. Mediators have a gatekeeping function as well, but rather multiplied. While a gatekeeper exploits a one-to-one relationship with the user of knowledge, the mediator has an impersonal relationship with his anonymous group of benefiters who receive the mediator's information through print.[17] This category mediates between providers of knowledge (be it orally or textually) and other users (common users and also other mediators).

I argue that the group of practical knowledge providers does not only exist out of gatekeepers. Here I describe a different group of practical knowledge providers. Both gatekeepers and mediators have a lot in common, but there are differences. Davids describes and attaches importance to the function of gatekeepers in society. As mentioned before, in this research, it is the type of relationship with the user or receiver of information that is determining. I have three arguments that show a breaking point or rupture with between both categories: 1) the medium they used, 2) the outreach to a larger public, and 3) the professional involvement.

The type of relationship with users is different for mediators consequently to the tool they used: the printing medium. The main way mediators reached their public is through print. In the case of the gatekeeper the tools were manuscript and oral means of transmission. In this way one can argue that mediators work structurally. The relationship between the mediator and the public is largely impersonal, whereas the relationship between the gatekeeper and the public, or 'the other consumer', had a very good chance to be personal since it often included oral transmission and thus personal contact. One could go to the local gatekeeper in order to find out about a certain procedure. But one did not go to the mediator to get access to practical knowledge; one bought his or her book.

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[16] Mediators control the information flux because they are at the providers, even though the idea is to share information with others, the final decision of the nature and quantity of information passing through the gate belongs to the group of mediators. I say 'group of mediators' because in the case of Girolamo Ruscelli, others have put his work to publication post mortem.

[17] In line with the previous chapter, it is more than probable that in later stages the printed information ended up in manuscript again, which means that the mediator indirectly reached for his public. In fact, the concept of rhizome provides that printed, handwritten and oral means of transmission can all work together in multiple ways to the dissemination of practical knowledge.

A significant part of the spreading of practical knowledge across Europe during the sixteenth-century happened through print. An exemplary case study can be found in the second chapter of Part I, about the spread of the German *Kunstbüchlein*. What many of the mediators have in common is that they write for a living. The work behind the scenes of printed recipe books involves the on-going sequence of collecting, experimenting, adapting, improving, selecting, editing, and publishing practical knowledge. The degree of the spread of practical knowledge is the criterion for appurtenance is the limited group of practical knowledge users I am defining as mediators.

The current chapter studies four mediators, of which two are mediators with practical experience and two are literary mediators. Three out of these four mediators are Italian 'professors of secrets'. This historical term will be explained below. The reason why the Italian setting contains more examples is because each of the cases is problematic and interesting. The Italian section struggles with issues about name integrity and professionalism. Already during the sixteenth century two of them were blamed for using false names. The first is Isabella Cortese, presumed to be the first female recipe writer, and among the various constructions around her persona is the belief that she was the Ragusan archdeacon Mario Chaboga. The second is Alessio Piemontese, the most successful recipe collector. Often it is believed that the name Alessio Piemontese is the pseudonym of the professional writer Girolamo Ruscelli. The third professor of secrets is Leonardo Fioravanti, who is seen more as a quacksalver than a professional writer. He often had run-ins with the officials, and dealt with the judiciary system more than once. All of these cases come with caveats, which are issued in this chapter.

The fourth mediator is an English professional writer. The case of Londoner Hugh Plat is less ambiguous. Hugh Plat, who published about medical practical knowledge and cured people just as Fioravanti did, was never imprisoned for his illegal practicing. We can perceive Hugh Plat's identity quite clearly through documents. His body of work, biographical data, and reputation as a professional writer are well preserved. Still, Plat has a lot in common with the Italian professors of secrets in his way of working and his objectives related to practical knowledge. But he also has a strong opinion on the professors of secrets, which he called the 'Magical crew'.[18]

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[18] Plat 1594, sig. B3v.

1.3   The Professori de' Secreti

William Eamon introduced contemporary scholarship to the concept of professors of secrets. Professors of secrets are 'relentless seekers of obscure, veiled, and occult things'.[19] The terminology *Professori de' Secreti* has a historical use. It was used by the Dominican monk Tommaso Garzoni in his *Piazza universale di tutte le professione del mondo* (1583)[20], which means 'Universal marketplace of all the professions of the world'. In his discussion of the profession, Garzoni focuses on the nature of secrets rather than on the status of the professors. Garzoni's prime example is natural philosopher Girolamo Cardano (1501–1576). Garzoni uses Cardano's taxonomy of secrets. The professors of secrets are not directly judged by Garzoni, but he does warn against the misuse of secrets. The conclusion of each of the discussed professions in *Piazza universale* results in a list with names. Garzoni provides his readers, and us, with the names of sixteen professors of secrets:[21]

1. Plinio [Pliny (23–79)]
2. Alberto Magno [Albert the Great (1200–1280)]
3. Rogerio Bachone [Roger Bacon (c. 1214–c.1292)]
4. Hieronimo Cardano [Girolamo Cardano (1501–1576)]
5. Giouan Battista Porta [Giovambattista della Porta (c.1535–1615)]
6. Don Alessio Piemontese [Alessio Piemontese]
7. Quell profane dell'Agrippa [Cornelius Agrippa (1486–1535)]
8. Hieronimo Ruscello [Girolamo Ruscelli (1504–1566)]
9. Isabella Cortese – il cui nome si tiene esser mentito insieme con quell di Don Alessio dal Ruscello [Isabella Cortese]
10. Il Fioravanti glorioso [Leonardo Fioravanti (c.1517–post 1583)]
11. Lo Scalifero [possibly Julius Caesar Scaliger (1484–1558)]
12. Il Fallopia [Gabriele Fallopius (1523–1562)]
13. Antonio Mizaldo [Antoine Mizauld (1510–1578)]
14. Leuinio Lemnio [Lieven Lemse (1505–1568)]

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[19] Eamon 1994, p. 135.
[20] The first edition is of 1583, but the edition consulted by me is the one of 1593.
[21] Garzoni 1593, p. 184. The information between square brackets is mine.

15. Il Paracelso [Philipp Theophrast Bombast von Hohenheim, known as Paracelsus (1493–1541)]

16. Giacobo Vvechero [Johannes Jacob Wecker (1528–1586)]

17. & altri assai, ma in effetto fra colore ne son recitati molti che hanno piu del superstitioso, che altro.

The seven professors of secrets that Hugh Plat named (nos. 2, 4, 5, 6, 10, 13, and 16), are all present in this list. As mentioned before, Plat addresses these seven as 'that crew', while Garzoni kept to a less judgmental terminology. Both lists contain a selection of international scholars. Eight of the sixteen names are of Italian origin, and among the other names there are professors of secrets from Germany, Switzerland, England, France, and the Netherlands. One possible exception among the Italians is Isabella Cortese, who I associate with a Dalmatian writer (see below). The professors of secrets are bound to a larger European context and largely coincide with mediators because many of them widely disseminated recipes through print and practice.

The list of professors is not a closed one. It starts with recognizing one of the classic authorities (Pliny) and includes medieval authorities (Albertus Magnus and Roger Bacon). From the fourth subject on, sixteenth-century subjects are named and the list is left open. Garzoni's final word on the professors of secrets is that among the professors of secrets many are superstitious. These concluding words give an idea of the public opinion around the profession. In what follows I will study the profile of a selection of professors of secrets. What all professors of secrets have in common is the search for knowledge, often metaphorically understood as a hunt or *venatio*.[22] The concept of *venatio*, 'a hunt – as an attempt to penetrate territories never known or explored before' was explored first by Paolo Rossi[23], but further developed by William Eamon who argues that: 'the 'new' scientific epistemology advanced by the professors of secrets was in reality one of the most ancient epistemologies of all: that of the hunter. The hunter of nature's secrets experiences nature as a dense woods in which theory offers a poor guide. Just as the hunter tracks his hidden prey following its spoor, the hunter of secrets looks for traces, sings, and clues that will lead to the discovery of nature's hidden causes. […]

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[22] Eamon 1994, p. 270.
[23] Citation of Paolo Rossi taken from Eamon 1994, p. 296, who cites from Rossi, Paolo, *Philosophy, Technology, and the Arts* (New Harper & Row, 1970), p. 42.

The 'secrets of nature' which were inaccessible to the intellect, could be found out only by long experience in the ways of nature'.[24]

Some professors of secrets had to deal with questions about their reliability and authenticity. Garzoni's list reports that two of the professors of secrets were disputed. The identity of Alessio Piemontese was already discussed in the post mortem publication of Girolamo Ruscelli, where the final editor argues that Ruscelli published his secretes under the name of Piemontese. Garzoni echo's this debate in his writing. However, the case of Isabella Cortese, equally seen as a creation of Ruscelli, is not based on a similar claim. I underline that Cortese is the only female subject in Garzoni's list and it is the only subject that is being judged as a lie without previous claims or reattributions. In what follows I will disentangle issues of identity.

2.   Literary mediators

This part will study the complex cases of authorship of two of Tommaso Garzoni's list of the *professori de' segreti* or professors of secrets: Isabella Cortese and Alessio Piemontese. It is the only instance in which Garzoni adds that both would be a deception, produced by the author Girolamo Ruscelli (1504–1566). In this part I will trace the historiography of the two authors Isabella Cortese and Alessio Piemontese and their publications. Both Cortese's *Secreti* and Piemontese's *Secreti* offer a very curious case of complex authorship. A lot of the conclusions drawn today are based on a deep-rooted historiographical mishmash of presumptions, and a nineteenth-century understanding about authorship. The short version of the current most commonly heard hypothesis is that a historical person with the name Isabella Cortese does not exist, and that Alessio Piemontese is a pseudonym. The two cases are intertwined, as various sources attribute the works to the same person, Girolamo Ruscelli, author of yet another book of secrets: *Secreti nuovi di maravigliosa virtu* (1567) or 'New secrets of marvellous virtue'.

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[24] Eamon 1994, p. 269.

2.1   The fortune of Isabella Cortese

In the case of Isabella Cortese, male authors have been proposed to fill in the gap of the unidentified author, because unidentified female writers were interpreted mostly as pseudonyms or lies. Over history, several propositions have been made around the identity of the writer of *I secreti de la signora Isabella Cortese* (1561). Gap-fillers were mostly taken directly out of the network of people around Cortese's *Secreti*: the printer Giovanni Bariletto, the dedicatee Mario Caboga, the privilege-seeker[25] Curtio Troiano Navó, and another professor of secrets Girolamo Ruscelli. I argue that there is a tendency to attribute books of secrets to male potential authors, and to authors rather than writers. Most hypotheses propose a master brain as the driving engine behind a group of sources. I name this tendency 'the monopoly of secrets', and I will disprove it where there is evidence. I must add to this that none of the hypothesis made are sufficiently convincing because of lacking proof and weak argumentation. I argue that these hypotheses are brewed based on textual overlap and editorial style. Textual overlap is a problem of transmission. It explains the existence of a social network with the purpose of knowledge exchange and an editorial style rather than the existence of one singular driving engine behind these books. My conclusion is that the *Secreti* of Isabella Cortese is a composed recipe book that recognizes its sources and that went through an editing process.

The publication of interest here is *I secreti de la signora Isabella Cortese* (1561) or *The secrets of Lady Isabella Cortese*. Cortese's *Secreti* was an octavo, which was published for the first time in Venice by Giovanni Bariletto and had at least fifteen Italian editions and a further four German editions.[26] There is no extensive bibliographical or book-historical research about this publication and its public. Often it is assumed that it aims at a female public because of the title page information. The complete title says *I secreti de la signora Isabella Cortese, ne' quali si contengono cose minerali, medicinali, artificiose, & Alchimiche, & molte de l'arte profumatoria, appartenenti a ogni gran Signora. Con altri bellissimi Secreti aggiunti*, meaning 'The secrets of Lady Isabella Cortese, which contain mineral, medicinal, artificial & Alchemical things, & a lot of the art of perfumery, belonging to every great lady. With other beautiful secrets added'. The clause 'every great lady' determines a female public. Still, the title adds also that other secrets were added, without reference to the subject or

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[25] Terminology used by Elizabeth Armstrong in her work 'Before Copyright' where she discusses the French book-privilege system between 1498 and 1526. See Armstrong 2002, pp. 29-30.
[26] I see the work done for this part as the preliminaries of a larger book-historical investigation on this precise book title, where each individual remaining copy is examined.

public. Despise what the title says, a male public is not unthinkable. Maybe cosmetics are considered female in the first place, but a male public could also make use of this. Think of the European environment of the theatre, where young adolescent male actors took roles of female characters.[27] Another subject of Cortese's *Secreti* is alchemy, which is a recognised subject of male interest.

A male public could be confirmed, or at least substantiated, by the signatures in the surviving copies. So far I have seen only five copies. Two of the five copies have male signatures and one has a so-far unidentified name.[28] Another male user turns up via a reference to Isabella's *Secreti* in another publication. In *The art of glass* (1662), Antonio Neri refers to Cortese's work. He points out Cortese's variant on making of *Aqua fortis* with arsenic instead of vitriol. Neri knew Cortese's *Secreti*; he points out that he used her book 'printed at Venice in Italian eighteen years before the publication of this work'.[29] Also Hugh Plat copied from this work.[30] I conclude that the actual audience of Cortese's *Secreti* is probably very mixed, which is not a surprise for early modern books of secrets and recipe books in general.

Let's start at the beginning about what we know and do not know about the identity of Isabella Cortese, presented as the author of the book. The strongest – and almost only – vein in the discussions about Cortese's *Secreti* is about the authorship. According to William Eamon, Cortese was a Venetian noble lady. But he is one of the few scholars attributing a concrete, yet vague, identity to the author. The truth is that up to today no single document can conclusively prove the existence of a historical Isabella Cortese, but neither is there a document proving the authorship of a male author. There is silence around the name Isabella Cortese in Venetian archival material.[31] As a consequence, the historical existence of Isabella Cortese has been questioned by most scholars.

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[27] The introduction of female actresses was a gradual evolution in the European history of drama. *The Oxford Companion to Theatre and Performance* says: 'In all European theatrical traditions, female roles were regularly played by boys or young men until Italian popular companies introduced actresses in the mid-sixteenth century. Even these companies were not allowed to use actresses throughout Italy, and where actresses were permitted they used male performers to play bawdy female servants […] Gradually, the use of actresses spread across Western Europe, but the English commercial theatre remained an all-male preserve until the enforced cessation of playing in 1642, and only introduced actresses after the Restoration in 1660.' See Shapiro 2010.

[28] All five copies come from the British Library: BL 1038 C.4; BL 1038 d 10; BL 1038. c. 9; BL 1492 d 4; BL 1578/4270.

[29] Neri 1662, p. 309.

[30] See below.

[31] Lesage also draws attention to the fact that Cortese does not appear in the *Dizionario Biografico degli Italiano*, not in the archives of Modena, the city of origin of the family name Cortese. See Lesage 1993, p. 157.

As mentioned earlier, these questions echo a sixteenth-century doubt about the author's identity. As seen in the above list, Isabella Cortese was taken up in Garzoni's account about *professori de' segreti*. Cortese's name *si tiene esser mentito* or 'is considered to be a lie'. Cortese would not be the only fictional author. Alessio Piemontese too would enter into this category of made up professors of secrets. Both Isabella and Alessio were believed to be a fabrication of Girolamo Ruscelli (1504–1566). Ruscelli is the founder of the Roman *Accademia dello Sdegno* or the 'academy of disdain/indignation, an initiative for people to gather with the intention to learn. So already, a mere two decades after the first edition of Cortese's *Secreti*, the existence of the author was put into question. However, another sixteenth-century document, contemporary to the first publication, would seem to argue the opposite. On August 17th, 1560, one year before the publication of Cortese's *Secreti*, a printing privilege was requested to the Venetian Senate for: *Gli secreti della Sig.ra Isabella Cortese* or 'the secrets of Lady Isabella Cortese'.[32] Communications with the official authorities are supposed to be truthful. And in this case, the author of the book of secrets is in fact named as Signora Isabella Cortese. So from the point of view of the sixteenth-century sources, there are two opposite messages. Neither of the two offer exclusive proof.

Studies that examine the *Secreti di Isabella Cortese* have something in common: 1) they are looking for the identity of the author. 2) They interpret the use of the grammatical first person as indicative of text written by the 'true author' of the work. 3) They deny the existence of a historical Isabella Cortese. 4) Subsequently they propose a replacement author, normally a male with some link to secrets or the publishing world. Although any one of these steps in isolation, or even the complete form of this argument, might be acceptable, it is a fact that this pattern is so pervasive that is problematic. As mentioned above, I call it the 'monopoly of secrets', because the idea is that a male master brain is the organizing force and executor of multiple published recipe books. The master brain is monopolizing the secrets business in mid sixteenth-century Venice and Italy. These hypotheses are based on the textual similarities between a significant group of recipe books. However, I have a different, and in many ways simpler explanation for these similarities: they are proof of transmission of knowledge within a network of people.

The first modern scholars to question Isabella's identity are a nineteenth century French duo. In 1865 the scholars Feuillet de Conches and Baschet published a work on

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[32] Lesage 1993, p. 166.

Les blondes femmes selon les peintres de l'école de Venise or a work on 'Blond ladies in the eyes of Venetian painters'. The duo made a textual comparison between the four books of secrets:

1) Alessio Piemontese, *Secreti* (1555)
2) Girolamo Ruscelli, *Secreti nuovi di maravigliosa virtù* (1567)
3) Timotheo Rossello, *Della summa de' secreti universali in ogni materia* (1575)
4) Isabella Cortese, *I segreti della signora Isabella Cortese* (1574)

The reasons for attributing all four works to the same pen are based on the recurrence of topics and what they believe to be a similar writing style.[33] According to Feuillet de Conches and Baschet, Girolamo Ruscelli is the author of the books of secrets written by Alessio Piemontese, Isabella Cortese, and Timoteo Rossello. This last one is the author of *Della summa de' secreti universaili in ogni material* (1559), hereafter referred to as the *Summa*.

This hypothesis was dismantled by Claire Lesage in 1993, through a textual comparative study. She concluded that lexicon, regional patina, linguistic complexity and procedure technicality are different in each of the four cases. She also analysed the introductions, and found that they were all different in style and approach, notwithstanding some superficial topical similarity in two of them, being hunting for nature's secrets in Cortese's *Secreti* and Rossello's *Summa*. Her argument is thorough, rigorous, and well supported, and I find it convincing, both as a dismissal of the charge that Cortese's Secreti could have been written by Ruscelli, and as a framework for arguing against other claims of 'mastermind' authorship.

According to Jo Wheeler, the true master brain and hunter of secrets in this story is Curtio Troiano di Navò. Wheeler finds evidence for this hypothesis in two documents. The first is the grant of printing privileges. The person who asked the rights to print Cortese's *Secreti* is Navò, rather than the printer Bariletto. The document names two other books: the *Summa* of Timoteo Rossello and the *Pirotechnia* of Vannoccio Biringuccio. Wheeler believes that the dedication of the third edition of the *Pirotechnia* offers a context to the mystery around Rossello's and Cortese's book. The dedication is also addressed to Mario Caboga and talks about the fact that Caboga 'embellished and amended' (*adornata & emendata*) all three editions[34]. According to Wheeler the document 'reveals that the dedicatees of the first two volumes were fictitious'. The dedication states that Caboga did not suffer the fact that 'certain false names were found (…) under his

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[33] Baschet and Feuillet de Conches 1865, pp. 102; 181-183.
[34] Biringoccio 1558, sig. A1v.

shadow', which would indicate that he would have been publishing under a false name.[35] Wheeler takes two key factors together: first, Caboga and the use of false names around his person, and second; the three books of the printing permission: the *Summa*, the *Secreti* and the *Pirotechnia*. And this would explain the mystery around Isabella Cortese.[36] Wheeler proposes that the dedications of the *Summa* and the *Secreti* were written under false name, therefore the whole book would have been written under false name. And Navò would have been the driving force behind all the books dedicated to Caboga. To refer to this the network around Caboga and Navò, Wheeler developed the name 'the Ragusan connection', which has been used repeatedly in historiography.[37]

My original research has uncovered significant supporting evidence for an alternative interpretation of the dedication of the *Pirotechnia*'s third edition. Wheeler argues that the reference to 'all three' editions in the dedication refer to the three books in the permission grant, being Cortese's *Secreti*, Rossello's *Summa*, and Biringuccio's *Pirotechnia*. Wheeler claims that Curtio Troiano di Navò was the organizing brain behind *I secreti de la signora Isabella Cortese* (1561). She uses interesting external sources, but decontextualizes the information of the dedication of the third edition of the *Pirotechnia* in order to get to this conclusion. My research investigates whether 'all three' editions referenced in the third edition of a particular book, refers to the editions of the book itself, rather than to the volumes that are only tenuously related? I argue that the dedication of the *Pirotechnia* makes the *Pirotechnia* central. I believe that Navò refers to the two earlier editions of the *Pirotechnia* rather than the *Summa* and the *Secreti*. It is exactly those two earlier editions that Caboga edited, but he does not appear in the dedication.

But beyond the Ockham's Razor argument, my research has turned up convincing evidence for this reading. An analysis of the three first editions of the *Pirotechnia* would indicate that they come from the same printing press. They all consist of the same amount of leaves, and the imagery is recycled.[38] Two of the presumed printers are unknown to scholarship: the second printer Giovan Padovano of Venice, and the third Comin da Trino di Monferrato. Remaining with the argument of potential fake names, two of the dedicatees fall under this same category. The first edition of 1540 makes the dedication to Bernardino Moncellesi da Solo,[39] and the second edition of 1550

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[35] Wheeler 2009, p. 37; Wheeler 2013.
[36] I have to mention that equally Timotteo Rossello, the author of the *Summa*, is left without historic data, but nobody seems to be bothered about this.
[37] See Wheeler 2013; Ray 2015, p. 57.
[38] Smith and Gnudi 1943, pp. xix-xx.
[39] Biringuccio 1943, p. 2.

makes the dedication to Guidotto Napio of Bohemia[40]. I didn't find any information about any of these four names. It is the printer of the first edition of the *Pirotechnia*, Curtio Troiano di Navò, that is a certain historical person. The self-declared role of Navò in the three editions is small: he would be the printer of the first edition and he wrote the dedication to the third edition. But the coherence between the three editions, in terms of editors' style and network, is quite strong. My interpretation is based on a close reading of the dedication in the proper context, that of the book title itself and its history. This means that I disprove Jo Wheeler's findings. Wheeler claims that Curtio Troiano di Navò was the organizing brain behind *I secreti de la signora Isabella Cortese* (1561). She uses interesting external sources, but decontextualizes the information of the dedication of the third edition of the *Pirotechnia* in order to get to this conclusion. In this PhD dissertation the *Pirotechnia* does not provide any information about the case of Cortese.

Yet another variant of the monopoly hypothesis puts Mario Caboga, the dedicatee of Cortese's *Secreti*, at the centre. Massimo Rizzardini published an opinionated article on the subject in 2010 in which he rejects Claire Lesage's findings.[41] Rizzardini persists in the nineteenth century French hypothesis that all four books were written by one hand, but he proposes Mario Caboga as the true author. He puts forward several reasons: 1) Caboga is a historical person. 2) According to an eighteenth-century source Caboga wrote two books of secrets. 3) One of the Slavic variants of the name Caboga is Kordiza, which according to Rizzardini resembles Cortese.[42] 4) The name Cortese is an anagram for 'secret'.

Rizzaradini makes much of the fact that, according to an eighteenth-century source, Caboga wrote two recipe books. This eighteenth-century source is the *Fasti litterario-Ragusini* (1767) of Sebastiano Dolci who published about scholars and men of letters from Ragusa. This Latin source reports that Caboga wrote 'duos secretorum Libellos sub alieno nome evulgatos'.[43] (Two books of secrets were given under an alien name.) Dolci does not report his sources. An analysis of Dolci's words teaches us that he must make reference to published or printed sources. Anyone could write one, two, or

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[40] Beckmann 1817, p. 466; Smith and Gnudi 1943, p. xix.
[41] Rizzardini 2010, pp. 73-77.
[42] My comment on this hypothesis is that the stress in Kordiza would come on the first syllable: Kórdiza, meaning that the 'i' is short. Therefore it does not perfectly correspond to Cortese, where the first 'e' is long. Again, the work of Cortese is published in Italy, a place where people would be likely to pronounce according to their own rules.
[43] Dolci 1767, p. 40.

more recipe books, but that does not explain the public character and even less the need for an *alieno nome*, which here I would interpret as a pseudonym.

If there is one book that shows significant similarities with the work of Isabella Cortese, it is the *Summa* of Timotheo Rossello. As I mentioned earlier, Caboga was the dedicatee of both Rosello's *Summa* and Cortese's *Secreti*. Another interesting point is that, according to Lesage who studied both works textually, the text of the *Summa* could be seen as a simplification of the *Secreti*, both in the dedication letter and individual recipes.[44] Another aspect of the work of Caboga is that he worked incognito at times. The first three editions of the *Pirotechnia* were edited by the hand of Caboga, but this was only revealed in the third edition, which recognized Caboga's work through a dedication. Both Rosello's *Summa* and Cortese's *Secreti* are dedicated to Caboga. And for all three book titles, the *Summa*, Cortese's *Secreti*, and the *Pirotechnia*, the rights to be printed were asked at the same moment by Navó. Jo Wheeler found a link between Caboga and Navó. In my opinion, Caboga is certainly not an unthinkable candidate, but there are certainly data suggesting he is not the 'master brain'. For example, the dedications in Isabella's *Secreti* and Rosello's *Summa* would be self-dedications and that undermines the purpose of a dedicatory letter. However, the person of Mario Caboga returns in various sixteenth-century documents as well as contemporary theories around the mystery. He was born in 1505 and died in 1582 in Rome where earlier, in 1574, he defended himself after being accused by the Roman Inquisition.

Could Caboga have been the so-called author of Cortese's *Secreti*? He could. But, it is by no means a sure thing, and focusing exclusively on issues of 'true' authorship has a side effect of eliding other important discussions. Recipe books, in fact, are usually not the product of a singular writer. They are compilations, sometimes compiled by a single writer, but always the result of multiple sources.

The work of Isabella Cortese borrows material from various sources, of which some are recognized. Cortese's ten commandments and other advice on how to deal with alchemy do not come from herself, as is generally believed,[45] but from a certain abbot Chirico from Cologne. It is generally believed that the author of the book, either a certain Isabella Cortese or another male writer, was also a fierce practitioner of the art of alchemy. I will not contest this statement, I just contest the reasons put forward for this assumption. It is believed that the author who addresses the readers is the one who

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[44] Lesage 1993, pp. 63-64.
[45] Explicitly in Rizzardini 2010; Eamon 2011.

brought together all the recipes of the book, presumably Isabella Cortese. I argue that the writer of Isabella's *Secreti* copied this section from another source, and therefore it is not the voice of the current writer, but of another writer. The 'I' is copied. The second book is introduced as an *Opera di Canfora* or a 'work of Camphor'[46], starting with a section from *Chirico abate di Colonia*. This text addresses its public as 'dear brother', which is often interpreted as the voice of Isabella. The tone and kind of information is different from other parts in Cortese's *Secreti*. It forms a nucleus of specialized advice for practitioners. Taking into consideration its epistemological secrecy concept, it might be taken from a much older work.

Another of the sources that the *Secreti* of Cortese recognizes is the work of the priest Benedict from Vienna. This makes part of the *Secreti*'s second chapter and follows after the section of recipes from Abbot Chirico. This section contains one of the favourite secrecy topoi: the discovering and preservation of knowledge, connected to the death of a person. This is one of the reasons Cortese's *Secreti* has been treated dismissively as forgery. I argue that what we read is not the voice of Isabella or the writer of the *Secreti*. It is the voice of the person who signed the paragraph with the narrative, being *fratello Benedetto* or 'brother Benedetto'.[47] The *Secreti* of Isabella Cortese recognizes its sources where possible or necessary. Often in the past narratives and advices have been seen as the author of the *Secreti* talking in person to its public. This was often received with a lot of scepticism. I argue that a close reading of the source is necessary to understand the textual dynamics. The 'I' of Abbot Chirico is not the same 'I' from brother Benedict, which is certainly not the 'I' of an Isabella Cortese.

With this in mind, the similarities between the various recipe books around Cortese's *Secreti* should not be understood as the work of one single author. It is often argued that the author would have tried to adapt his product to a diversified market. Secrets in general were a marketable product. Signs of editing are often seen as the style of an author. But the editing of recipe books before printing is quite a normal practice across Europe at that time. I have studied recipe books both in manuscript and print. I state that manuscripts are the raw material, often not elaborated. There can be a title and a name, but I would see it as rather exceptional. Further, when you meet a clean organized recipe book, you are clearly dealing with a copy. Normally recipe books are

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[46] The OED definition of camphor: 'A whitish translucent crystalline volatile substance, belonging chemically to the vegetable oils, and having a bitter aromatic taste and a strong characteristic smell: it is used in pharmacy, and was formerly in repute as an antaphrodisiac.'
[47] Cortese 1561, fols 14r-v.

compilations that had the potential to be used daily. They have signs of usage such as stains, comments, crossed-out information, writings in the margins, writings in different hands (because writing down recipes was a practice common to an entire household), etc. The printed recipe book is different: it is a polished version of a manuscript. Often recipes in a printed recipe book are arranged or semi-arranged into books or chapters, according to subject for instance. In the case of Cortese's *Secreti* there are three books: the first book is medical, the second alchemical, the third artisanal. In later editions a fourth book is added, with beauty as subject. Analogue with the second chapter, texts continuously change. A new topic might have been introduced in newer editions because of demand or potential success of the topic, as printed recipe books were market oriented. Cortese's *Secreti* wasn't any different.

Another element indicating the work of an editor is the order of recipes in the case of Cortese's *Secreti*. The first recipes of each chapter are eye catchers. The very first recipe is about treating Black Death and poison. The recipe includes a narrative involving historical personalities. The story goes that Brother Gregorio Mezzo developed a remedy against poison and Black Death for Pope Clement VII. Clement VII was born as Giulio di Giuliano de' Medici (1478–1534), and his papacy ran between 1523 and 1534. The antivenin was tested on two condemned prisoners of the Campidoglio. The first one died. The second one survived – or at least he survived the poison and the cure.[48] The second chapter starts off with Abbot Chirico's distinct introduction, ten commandments, and recipes, followed by brother Benedict's narrative and recipes, before going to more random recipes about alchemy. The signs of an editing process are seen in the structure and build of the book.

Further evidence of selling techniques for secrets can be found in the second chapter on alchemy. The chapter is introduced by a plea of Abbot Chirico to the reader. The reader should not follow what the alchemical authorities have said, because 'they did not tell the truth'. The thirteenth and fourteenth century masters such as Geber, Ramon Llull, and Arnaldus de Villa Nova told nothing but 'fables and chitter-chatter'. He advises to not spend a lifetime on these works, such as he did; he lost thirty years. Chirico touches upon another point, the economic aspect of getting involved in the journey of alchemy. He confesses that he has not only lost a lifetime, but also a lot of money. Chirico encourages his reader to follow strictly what is instructed, such as the recipes and

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[48] Cortese 1561, fols 1r-2r.

the ten commandments.[49] Making readers follow recommendations of the writer, especially when these recommendations tell to stay away from other authors, might be counted as a way to sell the book.

The eighth commandment gives us a clue about the secrecy concept that is handled in the *Secreti*. It says 'do not teach this art to anyone, because revealing the secrets makes them loose effectiveness'.[50] According to the taxonomy of secrets of William Eamon, this can be categorised under epistemological secrets, which are seen as a more Medieval form of secrecy understanding. In this view God put secrets into nature, and they are impenetrable and powerful. To make secret knowledge public was breaking the celestial seal. Here, the risk is to make the secrets dysfunctional. Again, it also belongs to the second category of social secrets; a social secret is the intentional suppressing of information for protectionist reasons.[51] It is often heard that printed secrets are a kind of *contradictio in adjecto*, because what is more public than printed material on a free market? But here market principles might play. Keeping Cortese's secrets personal signifies that anybody interested would have to buy a book rather than copy it. And this is a significant difference between handwritten recipe books and printed recipe books: the return to an old secrecy pattern might be very functional for selling the book.

2.2 Entanglement between Alessio Piemontese and Girolamo Ruschelli

In this part I argue that Alessio Piemontese is a gatekeeper in the guise of a mediator. In this research Girolamo Ruscelli (d. 1565/1566) is identified as the literary mediator behind the publications of Alessio. To come to this conclusion I will first go back to the hypothesis of the French scholars Feuillet de Conches and Baschet, who argued that Girolamo Ruscelli is the author of the books of secrets written by Alessio Piemontese, Isabella Cortese and Timoteo Rossello.[52] Previously I grouped Cortese's and Rossello's work together and looked for a connection with Mario Caboga, the possible compiler.

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[49] Cortese 1561, fols 9v-10v.
[50] Cortese 1561, fol. 10r.
[51] See chapter one of Part I.
[52] Baschet and Feuillet de Conches 1865, pp. 181-183.

The 1865 hypothesis proposes Alessio Piemontese and Girolamo Ruscelli as the two other authors. Today it is generally accepted that Girolamo Ruscelli is the real author of the *Secreti* of Alessio Piemontese.[53] In what follows I will discuss Alessio's *Secreti* and Ruscelli's *Secreti nuovi*, list the various argumentations used to link Ruscelli to Piemontese, and build a new hypothesis in which I argue that Alessio Piemontese and Girolamo Ruscelli are two separate physical people.

In 2012 a short-title bibliographical list was published by Ad Stijnman about the *Secreti del reverend donno Alessio Piemontese* (1555) or the 'Secrets of Sir Alessio Piemontese'.[54] Stijnman has been working towards completion of this list and was able to file an impressive number of editions and copies in Italian, French, Latin, Spanish, Portuguese, Dutch, German, Danish, and Polish. As of the year 1999, there numbered two hundred and sixty-seven editions. The most significant printing period for Alessio's *Secreti* lies between the first print in 1555 and 1791; this period counts two hundred and sixty-four editions of Alessio's *Secreti*.[55] In my own research, I was able to trace a reference to a possibly overlooked early edition in Spanish. Stijnman's short-list bibliography lists two surviving and known Spanish editions in 1563, a Catalan and a Castilian version, as the first Spanish editions.[56] The first Dutch translation of the *Secreti* (1558) gives away that the printer Christoffel Plantijn was granted the right to print Alessio's *Secreti* for the five coming years as the only printer. He also obtained the rights to publish Alessio's *Secreti* in French, Dutch, and Spanish. So there was at least an attempt made to publish a Spanish edition between 1558 and 1562, anticipating thus the first Spanish editions. Presumably, if the project was indeed successfully completed, no single copy of this edition has survived to be known.

The first edition of a book of secrets bearing Girolamo Ruscelli's name is *Secreti nuovi di maravigliosa virtù del signor Ieronimo Ruscelli, i quali continovando a quelli di donno Alexio, cognome finto del detto Ruscelli* (1567), meaning 'New secrets of marvellous virtue by Sir Ieronimo Ruscelli, which continue the ones of Sir Alessio, fake family name of the said Ruscelli'.[57] Scholarship has followed information taken from the title. In fact, that Ruscelli would be the true author of Alessio's *Secreti* is commonplace even in library

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[53] The idea that Ruscelli wrote under the pseudonym of Piemontese is found in Eamon 2011, and is a central thought in Guliza 2014.

[54] Stijnman 2012.

[55] This contains a possible double edition (no. 80-81) and a manuscript copy (no. 67).

[56] Stijnman 2012, p. 38.

[57] The title is not very precise about given name and family name. The title sustains that 'Alessio' would be the false family name of Ruscelli. But 'Alessio' is a given name; 'Piemontese' would be the family name.

catalogues. Ruscelli's *Nuovi secreti* introduces the same concept in various instances. In the foreword to the reader, Ruscelli says that the truth is that all the secrets he gathered and published in name of Alessio Piemontese, were collected in the context of an *academia secreta* or 'secret academy': *io raccolsi tutti i secreti seguenti & gli anteriori ancora, ch'io publicai pochi anni [or] sono di Donno Alessio Piemontese, li quali nel vero tutti furono raccolti nella predetta Academia.*[58]

There are various problems with the hypothesis that Piemontese is the pseudonym of Ruscelli or that Ruscelli and Piemontese are the same person. One of the problems is that Ruscelli's *Secreti nuovi* were printed post mortem. The work appeared in 1567, one year after the death of Ruscelli. This means that Ruscelli did not have the final decisive hand in the publication. In fact, the whole of the manuscript was probably not finished at the time of Ruscelli's death. The dedication for instance was written by the scholar Francesco Sansovino (1521–1586). The whole printing process possibly lies beyond control of Ruscelli himself. This means that the editing might not be by his hand and it means that information might have been altered.

Contradictions to the contested hypothesis arise because of several textual and documental indications. The first instance is a biographical record of Alessio Piemontese made in 1753. Giammaria Mazzuchelli creates the profile of a bishop from Piacenza who flourished around 1540. Alessio here is being painted as a specialist in languages, inclined to study natural philosophy, and as having travelled around the world for fifty-seven years. Alessio would have perished around the year 1550.[59] Mazzuchelli clearly takes some of his information from Alessio's printed work. He is also aware of the hypothesis that Ruscelli was the real author of Alessio's *Secreti*, but he states that this is not a generally accepted hypothesis.[60]

The second and third instances come out of the Venetian archives. The second instance comes out of the request for printing privilege for a Latin manuscript from a certain Alessio Piemontese that Ruscelli wants to translate and publish. The third

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[58] Ruscelli 1567, p. 7.
[59] What Mazzuchelli mentioned about Piemontese's life, that he flourished around 1540 and died around 1550 could be pretty close to the truth. The date 1540 could be taken from the manuscript and by the time the printed book arrived on the market, Piemontese was possibly already deceased. It is unlikely that a person working with recipes sells his or her own notes and recipe books unless they are copies. Yet, Ruscelli managed to buy the recipe book of Piemontese, so says the archival document. But this is information beyond the awareness of Mazzuchelli, as he believes Piemontese was a vulgar writer. So, Muzzachelli probably had access to other sources that are unknown to us today. Mukherjee places the flourishing years of Alessio Piemontese between 1514 and 1547. Thus far I was not able to trace where this information comes from. See Mukherjee 2011, p. 69, n. 1.
[60] Mazzuchelli 1753, pp. 464-465.

instance is the printing approval for the project.[61] The last instance comes out of Alessio's *Secreti* itself. It concerns the recipe for pectoral water used for pneumonia, an inflammatory condition of the lungs. The end of the recipe contains a testimony of the meeting between Alessio Piemontese and Girolamo Ruscelli. Alessio writes that *questa acqua mi fu data in Bologna, l'anno mille cinque cento quaranta tre, dal Signor Girolamo Ruscelli* or 'this water was given to me at Bologna, in the year 1543, by Sir Girolamo Ruscelli'.[62] The fragment provides further information that in that specific year Ruscelli himself suffered from pneumonia.

As evidence to contest the hypothesis that Alessio Piemontese and Girolamo Ruscelli are one person, I have called upon Muzzachelli who creates a profile and that acknowledges the early contestations around the identity of Alessio Piemontese. Further there are the two archival documents around the publication of a translated manuscript of Alessio Piemontese by Ruscelli. And finally there is the textual reference of an encounter and exchange of a medicine between the two. With this I have provided the available evidence to sustain that Alessio Piemontese and Girolamo Ruscelli are two independent people.

Then why the need to proclaim the contrary? What could be the use and importance of this mechanism? At the bottom of this case lies a different understanding of authorship and the involvement of marketing principals. As discussed in the first chapter, our conception of authorship is being affected by nineteenth century (and possibly also earlier) thoughts. Parallel to this, our ideas of plagiarism. Today plagiarism is seen as literary theft, but that would not always be shared in the early modern period, where copying was common.[63] Girolamo Ruscelli would actually buy a manuscript and select, translate and possibly rearrange the content before publishing. Ruscelli thus became the mediator and vital factor in a process of knowledge transmission. Ruscelli was the translator and editor of Alessio's *Secreti*; he was the driving force behind the publication. The indisputable success of Alessio's *Secreti* might have generated feeling and dynamics of pride for the actor behind the publication. By the time the *Secreti nuovi* were published, at least seventy-four editions in twelve years appeared over the whole of Europe. And what could be more successful than the most successful book? The 'real'

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[61] Lesage 1993, p. 160.

[62] Piemontese 1555, p. 64; pointed out by Stijnman 2012, p. 32. Special thanks to Mark Clarke who made me aware of this article and its content.

[63] There are exceptional cases about the understanding of plagiarism such as the one of Albrecht Dürer, which I write about in my thesis of the Advanced Master in Medieval and Renaissance Studies at the Katholieke Universiteit Leuven (2011–2012). See Leemans 2012.

author of the most successful book of course. Note that the style in which the *Secreti nuovi* claims its authenticity is very elaborate. The whole introducing part of the recipe book is marked by the same amount of elaboration. Every possibility is grabbed to unveil this exclusive information. The argument is being sold to its public. Whether it was pride or a marketing strategy, considering the documentation at hand, we might not discover how the story went.

According to the proem of the *Secreti nuovi*, Ruscelli recovered secrets from *libri à stampa, ò à penna così antichi, come moderni* or from 'printed books, or in pen, this old, as well as modern'.[64] By his own admission, Ruscelli used printed books and old and newer manuscripts. That the *Secreti nuovi* uses printed material is evidenced in the first section. Folios 8r to 17r contain a faithful copy of the first book of the *Secreti* of Isabella Cortese. However, there are a few clear signs of editorial operations. The last recipe of the first book in Cortese's *Secreti* is a recipe for haemorrhoids.[65] This is a Latin recipe, which is incorporated in a group of Italian recipes for a failing kidney. This last part of the first book is entitled *a far orinare la renella* (to make the kidney urinate) and contains three Italian variant recipes for kidneys and one Latin recipe for haemorrhoids. Ruscelli probably copied from the first edition of Cortese's *Secreti* because he announced the end of the first part after this recipe. Remarkable is that he does not open a second part after having closed the first one. The recipe following the haemorrhoids in *Secreti nuovi*, which is for redness in the face, does not show any sign of discontinuity. In fact, the actual second book is announced with a title page on folio 185r. The reason why he probably did not take another edition of Cortese's *Secreti* is exactly because the second edition of Cortese's *Secreti* contains a slightly altered and enriched selection of recipes. Apart from the faithful copying of the recipes, Ruscelli, or the actual editor, translated the Latin recipe for haemorrhoids and gave the recipe its own space in the publication. In *Secreti nuovi* the recipe for haemorrhoids stands on its own, it has its own title and own set of instructions.

So we can clearly see, Ruscelli uses various sources, of which the *Secreti* of Isabella Cortese makes a significant part. Without recognizing the precise titles, he mentioned that he used both printed sources and manuscripts, both old and new. Both Piemontese's and Cortese's work have been understood as being written by Ruscelli, because of textual

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[64] The translation has to be read with intonation. The sense would be that material was borrowed from printed book, or books that are so old that they are written with pen (or feather), and also more modern books, intended handwritten, but more recently. The writer is quite complete about the media he used.
[65] Cortese 1561, fol. 9r.

overlap. But all of these works are a result of collecting recipes. And collecting and publishing recipes is what a literary mediator does.

3. Mediating practitioners

3.1 At the border of quack medicine: the case of Leonardo Fioravanti

Professors of secrets have a lot in common with so-called charlatans or quacks. William Eamon points out several characteristics of charlatans, being 1) travelling, 2) self-fashioning, and 3) the use of the printing medium. I will first briefly discuss these three characteristics. Travelling takes up a central role in their lives. Somehow, their rootlessness becomes a stereotypical characteristic. Another point associated with charlatanism is self-fashioning, through, for instance, the usage of a pseudonym. Often a nickname or artistic name was used when they were performing in a square. Eamon names 'Il Fortunato' or the fortunate, 'Scampamorte' or the person who escaped death or 'Il Turchetto' referring to the remote origins of the person. The third characteristic is that charlatans eagerly make use of the printing press for publicity pamphlets and popular writings.[66] In the following parts I will seek for these characteristics in the life and career of Leonardo Fioravanti's (ca. 1517–post 1583), number ten in Garzoni's list of professors of secrets.

Fioravanti was a person who travelled a lot, he has been in most parts of Italy, literally from the very South in Sicily up to the very Nord of the country. But his travels went beyond the Italian peninsula, as he went to Spain. Not just the fact that Fioravanti travelled is worth noting, but the number of collisions is the central topic of his voyages. Fioravanti was accused several times in his life. In 1568 he was convicted in Venice for being a vagabond and for his unorthodox cures that put the health of people in danger.[67] During his time at the Spanish court, starting in 1576, he got accused by the *Real Tribunal del Protomedicato* for five reasons: 1) the practice of medicine without a license from the Protomedicato, meaning illegally, 2) the usage of damaging cures, with the death of the servant of courtesan Tristan de la Torre as a consequence, 3) practicing medicine without

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[66] Eamon 2014, pp. 149-150.
[67] Eamon 2014, p. 149.

the right academic titles (that is, a title recognized by one of the three Castilian universities), 4) the making of medicines in his house, (the right to make and sell medicines only belonged to pharmacists), and finally 5) the practicing of surgery against the rules of the authorities.[68] There is also a letter preserved from Fioravanti's days in prison in Milan, addressed to the physicist Niccolo Boldoni and to the deputy of justice, which was dated April 22nd, 1573. He remained there because of accusations made by the 'Collegio de' medici'. According to him, he was put in jail because of jealousy.[69] Clearly Fioravanti collided with the official authorities wherever he went. And among the accusations there was the Venetian judgment about his lifestyle as a 'vagabond'. Fioravanti travelled a lot across the southern Europe and all over Italy. A common factor during his travels is the conflicts with official authorities everywhere he went.

As mentioned above, Fioravanti was named vagabond by Venetian authorities. In other instances, the judgement was more positive, such as in the case of Garzoni who attributed the name 'Il Fioravanti glorioso' to him, which means the Glorious Fioravanti. How others looked upon Fioravanti is only part of his name and fame. Fioravanti himself was interested in building a reputation and name. One way of name building happened through his publications.[70] Fioravanti promotes himself in a certain way, appealing on a few returning images. He frequently names himself medical doctor, surgeon, and knight. Often he is an excellent medical doctor and it is always mentioned that he is from Bologna. It was common practice to present writers or authors in print denominating the place where they came from. However, the fame of Bologna as the oldest university city where medicine was taught might have been part of the reason why repeating the association.

Another way to build his fame was through actions on the medical marketplace: he performed the so-called miracle cures, which he reported in his writings. One of the famous legendary stories is the successful removing of the spleen of Marulla Greco, the beautiful wife of a Spanish captain. This event was presented by Fioravanti as if this was his accomplishment. However, Fioravanti acted only in the capacity of contact person and informed the person who materially executed the action of opening the body and taking out the spleen was Andriano Zaccarello.[71] Another cure he would have invented was for 'mal francese' or syphilis. Fioravanti dealt with the second and third generation

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[68] Eamon 2014, pp. 237, 252.
[69] Eamon 2014, pp. 232-235.
[70] Titles used that resulted out of the search in the USTC.
[71] In his recipe book *Il Tesoro della vita humana* Fioravanti talks about the procedure of removing a spleen, where he narrates this episode. Fioravanti 1570, fols. 25v-26v.

of syphilis patients. The first generation of patients had to deal with the worst variant of the disease. In the following generations, the various stages of the disease evolved in a less severe way. Fioravanti was present in Palermo to cure those in any of the two first stages, which even in a normal condition would disappear by themselves. By the time he left Palermo the next stage would not have made its entrance.[72] And thus Fioravanti narrates about himself that he managed to cure the terrible disease. Fioravanti used his successes as a means for self-fashioning.[73]

However, no matter Fioravanti's efforts in reputation building, it was the Venetian judgment about Fioravanti's lifestyle and his frequent troubles with the officials left an image that remained and was transmitted through history. William Eamon traced the success and perception of this professor of secrets. During the nineteenth century a little respectful image was created around the figure and capacities of Fioravanti. Through the writing of the medical historian Salvatore De Renzi, Fioravanti became the archetype of a charlatan. However, Eamon reasons that during Fioravanti's days this image might have been very different. He posed the question of who would be seen as more significant: Andreas Vesalius or Leonardo Fioravanti. Today people would ask: 'Leonardo who?', but in sixteenth-century Venice they would ask: 'Andrea who?'. Even though Vesalius might have been the founder of modern medicine, his importance is more recognized today than back in the sixteenth century by average people. Meanwhile Fioravanti, who published useful recipes, produced medicines that were sold until well in the eighteenth century in recognized pharmacies and who cured people personally, was more known, had a name and a reputation.

Eamon tried to re-contextualize the significance of the image of a charlatan. He stresses that the meaning of the word charlatan had a different connotation in the sixteenth century. The Italian word *ciarlatano* did not have the connotation of a cheater or incompetent medical doctor. Eamon argues that a *ciarlatano* was one specific type of doctor among various categories of medicinal actors. Finally, Eamon points out that, even though not officially recognized by the history of medicine, Fioravanti had different and unorthodox – but certainly valid – ideas about sickness and about the body. During the early modern period it was believed that balance and imbalance of the humours in the body would establish sickness and health. Fioravanti's *Nuovo modo di curare* or new method of healing was simply seeing a disease as something that can leave the body. He

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[72] Eamon 2014, pp. 82-83, Fioravanti 1570, fols. 29r-30v.
[73] Eamon 2014, p. 130.

also worked with the idea of a dosage or specific quantities of medication for each individual patient. Taking dosages into account was not common practice in the universities Fioravanti had a degree from, Bologna and Naples. He also invented a panacea, a medicine close to what we now know as penicillin, invented in 1908 by the German microbiologist Paul Ehrlich.[74]

Now we have seen travels and reputation then and today of Fioravanti. The last argument is about Fioravanti's use of the printing medium. Fioravanti was an avid publisher of medical recipe books dealing with surgery, secrets, and science. Fioravanti wrote nine books under his own name and he edited two additional titles for other authors. All books were published for the first time between 1561 and 1582. Eamon counts seventy-seven Italian editions in the sixteenth and seventeenth century, including one early eighteenth-century edition.[75] This list includes only his works in Italian, but translations made during his lifetime existed. I will provide the short-title list of all first editions of his own work:[76]

1. *Secreti medicinali* (Venice, 1561)
2. *Capricci medicinali* (Venice, 1561)
3. *Compendio de i secreti rationali* (Venice, 1564)
4. *Dello specchio di scientia universale* (Venice, 1564)
5. *Del reggimento della peste* (Venice, 1565)
6. *Scelta di diversi capitoli importantissimi alla cirugia, estratti dalle opere dell'eccellentissimo dottor, et cavaliere, m. Leonardo Fioravanti* (Venice, 1568)
7. *La cirugia* (Venice, 1570)
8. *Il tesoro della vita humana* (Venice, 1570)
9. *Della fisica* (Venice, 1582)

The two works that Fioravanti made together with other authors are the following:

1. Pietro e Lodovico Rostinio, *Compendio di tutta le cirugia (a cura di Fioravanti e comprendente i suoi Discorsi* […] *sopra la chirugia, con la dichiarazione di molte cose necessarie da sapere, non piu scritte in tale modo* (Venice, 1561)
2. Giovanni de Vigo, *La prattica universale in cirugia.* […] *Et di nuovo aggiuntivi molti capitol estratti dalle opere dell'eccellentissimo dottor* […] *Leonardo Fioravanti* (Venice, 1576)

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[74] Bud 2007, pp. 14-15.
[75] Eamon 2014, pp. 349-350.
[76] This list is based on the bibliography provided by Eamon 2014, pp. 349-350 and is cross-checked against the search results of the USTC.

Most of the following editions were published in Venice, with exception of two. During his lifetime only one work was published in Torino, being the fifth edition of *Compendio de i secreti rationali* (1580). The other work was the sixth edition of *Del reggimento della peste* (1720), which was published in Napels. During roughly two decades of his lifetime Fioravanti published twenty-six editions. This means that Fioravanti would have published at least one book a year. In realty this fluctuates, some years are without books, others have two or three publications.

The nature of Fioravanti's recipe books is very similar to other sixteenth-century Italian recipe books. I will briefly discuss the structure and content of *Secreti medicinali* (1561) because of its particular character. The commonly seen parts in recipe books are the title page, dedication, table of contents with reference system to chapter and page numbers, and three books or chapters with recipes each starting with a title, chapter number, and body of text. The parts that are not always present in other recipe books are a set of sonnets dedicated to people and three concluding parts. The general topic of this recipe book is announced as medicine. The first book is indeed about medicine, offering prescriptions to cure various types of diseases. From rotten teeth and bad smelling bread until the raising of the dead. The second chapter treats medicines and the third chapter teaches alchemy, making use of visual material for the various recipients and instruments. Fioravanti's public is made out of learned readers and potential dilettantes.[77]

Fioravanti is known as a Bolognese medical doctor and popular writer. He was an itinerant healer, such as many of his time. Through his life Fioravanti might have been seen and may still be seen as a charlatan, he was certainly a qualified and practicing doctor who contributed to the sixteenth-century medical scene and literary scene.[78] Fioravanti made his name on the medical marketplace and used this fame to publish medical books to further provide for his living. Fioravanti was a contested figure who, thanks to his practice and books, spread a lot of practical knowledge in early modern Italy, reaching all kinds of people.

3.2   The clear case of Sir Hugh Plat

The case study of professional writer Hugh Plat is presented here as one with few mysteries. Obviously a lot of interesting research questions can be asked around this

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[77] Fioravanti 1561, fol. 177r.
[78] Eamon 2014, pp. 267-278.

historical figure, but in several respects Plat is different from the three previous mediators. First, Hugh Plat is indisputably a historical person, unlike two of the literary mediators that are studied in this chapter. In the words of Deborah Harkness: 'Hugh Plat clearly emerges as a better representative of the actual practice of science in Elizabethan London', comparing him to 'ongoing practices and experiences with Bacon's belief that any inquiry into nature must be undertaken within a structures, and highly supervised, system of administration'.[79] Second, Plat was a London-born and London-based mediator, unlike the other three mediators. London in the sixteenth century was a vital centre for practical knowledge and provided prints with practical knowledge for the British Islands.[80] English books of secrets were either sold anonymously, with only the initials of the writer, or with the full name. This last gives the best probability to clearly identify the person, like in Plat's case. Third, Plat is especially known for his printed books with practical knowledge, but his papers are also preserved. A lot of his handwritten notebooks survive in the British Library. Of the selected group of Italian professors of secrets, not a single manuscript had been reported to survive. Furthermore, Plat's private library is still preserved, and is partly at St John's College Library in Cambridge.[81] Fourth and last, even though he practiced medicine illegally, just as Leonardo Fioravanti, he has a clean record with the authorities.[82] This difference might be explained by the different religious and political climate, but also by Plat's position in society. Plat knew a considerable amount of highly placed people, which could offer a guarantee to be freer from persecution.

Plat has a lot in common with the other mediators in this chapter, although as we can see, he is slightly different in profile. All of them collected, used, improved, and spread practical knowledge through the providing of expertise, or through the printing press.[83] I will shed light on Sir Hugh Plat's profile as a consumer, collector, and mediator of practical knowledge in order to compare him to the other practicing mediator, Leonardo Fioravanti.

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[79] Harkness 2007, p. 214.

[80] In the fourth volume of the successful series *The Cambridge History of the Book in Britain* deals with the period 1557-1695, London takes a significant place because of its printing and publishing centre. See Barnard and McKenzie 2008.

[81] Sir Hugh Plat left his whole library to his son William Plat (d. 1637). William Plat bequeathed his own entire library, which includes the library of his father, to St John's College Cambridge, where he was matriculated in 1609. The lists of books are found in St John's College archive, Ms U2, fol. 53; MS U3, fol. 47. Ayesha Mukherjee counts nineteen fiercely annotated books by the hand of Hugh Plat. See Mukherjee 2011, p. 77, n. 27.

[82] At least, no objecting materials seem to have survived.

[83] It is not unthinkable that some British authors may have gone to the continent to have their books printed. A good overview about the British book market is Pettegree 2011.

Sir Hugh Plat or Platt (*bap.* 1552 – 1608) was a London-born gentleman from immigrant parents. His father Richard Plat, from whom he inherited his gentleman status, was a Hertfordshire yeoman. Hugh Plat enjoyed the education of the better-educated gentry, first in rhetoric, logic, and philosophy at St. John's College at Cambridge.[84] The year of graduation, 1572, was also the year of his first publication: *The Flouers of Philosophie, with the Pleasure of Poetrie annexed to them, aswel pleasant to be read as profitable to be followed by all men.*[85] After this publication Plat entered Lincoln's Inn for his higher education.[86] Malcolm Thick compares his most known publication, the *Jewell House of Art and Nature* (1594) to a contemporary PhD thesis.[87] His two other famous publications, *Delights for Ladies* (1600) and *Floraes Paradise* (1608), appear after the death and legacy of his father in 1600.[88]

The writings of Deborah Harkness and Malcolm Thick on Hugh Plat contain a lot of information about Plat's networks.[89] The people Plat got practical knowledge from can be divided in several categories: courtesans or common people; foreigners, internationals, or locals; intimate circle or professional acquaintances; famous people or anonymous ones. All combinations between these categories can appear, meaning that Plat had a large pool of sources. He knew many people of the Inns of Court, the law courts, and the royal court. Among the English known names, there is John Dee, Stephen Bateman, Sir Francis Drake, and the circle of Sir Walter Raleigh. He knew the queen's surgeon. Plat also relied on his foreign contacts for the intake of practical knowledge, such as the Spanish Ambassador Mendoza. He met foreigners in his own country, on the street, or through other contacts. Among the common and more anonymous people Plat counted on apothecaries, bakers, builders, comfit makers, cooks, dyers, goldsmiths, metalworkers, sailors, saltpetre men, tradesmen, and vintners. He encountered husband-and-wife teams such as Mr and Mrs Edgecombe.[90] Further Thick points out that Plat is an eager person willing to talk to 'an itinerant woad-grower about medicine, an aged gardener about plants, a Dutch entertainer about tricks with molten metal, an Italian woman about preserving nuts', but he would equally talk 'with fellow gentleman at the Bar or at Court'.[91] Finally Plat consulted his own intimate circle

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[84] Thick 2010, pp. 11-13; 23.
[85] Thick 2010, p. 15.
[86] Thick 2010, p. 17.
[87] Thick 2010, p. 29.
[88] Thick 2010, p. 39.
[89] Harkness 2007; Thick 2010.
[90] Harkness 2007, pp. 217-218; Thick 2010, pp. 32-34.
[91] Citations taken from Thick 2010, p. 32.

concerning practical issues. He published recipes of his second wife Judith, like a salad she invented, and the way she made cheese.[92] The connectivity of Plat to people was rather large; he was interested in talking to anybody about his subjects of interest. Plat's contacts cannot be pinned down by origin, status, or gender. He would find his information through people he met and talked with. Thick discusses Plat's methods of information seeking, of which 'casual conversation' is one.[93] The study of Plat shows that his writings testify to oral knowledge collection, involving people of various layers in society. Plat was well informed about where and from whom he could get certain types of information.

The idea that Plat took information from other individuals becomes clear through his publications. However, Plat also gathered information from written sources. Plat read English books with practical knowledge from, for instance, Thomas Gascoigne, Thomas Hill (c.1528–c.1574), and Thomas Lupton (fl.1572–1584). He had an explicit interest in the books of the Italian professors of secrets for instance. Plat consulted the work of Giambattista della Porta (1535–1615), Girolamo Cardano (1501–1576), and Isabella Cortese.[94] Among Plat's collection of recipes for 'wild' fire there appears a recipe copied from Cortese's *Secreti* of 1574.[95] He was also familiar with other Italian works such as that of Bartolommeo Scappi (c.1500–1577), a papal cook.[96] Again he also refers to a certain T.T. in his notes, which is a manuscript.[97] Plat made use of oral and textual sources, both in manuscript and print. Plat provided in a broad spectrum of sources where he collected material from.

Deborah Harkness creates the image of a Plat who 'spent much of his time walking the streets of the City in search of nuggets of practical wisdom about nature, which he copied into small notebooks that he could slip into his pocket before compiling the best and most reliable into published books'.[98] The British Library contains a good twenty of these notebooks, and also family papers with sections by his hand.[99] Just as the professors of secrets, Plat was actively looking for knowledge. He had procedures for the follow-up of practical knowledge from the acquisition to the process of making the

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[92] Thick 2010, pp. 11-40.
[93] Thick 2010, pp. 259-278, in particular p. 259.
[94] Harkness 2007, p. 221.
[95] Thick 2010, p. 295.
[96] Thick 2010, pp. 122; 155.
[97] Thick 2010, pp. 161-162.
[98] Harkness 2007, p. 211.
[99] Add. MSS 72, 891; Sloane MSS SL 2170, 2171, 2172, 2175 (fols 71v-86r), 2176, 2177, 2189, 2194, 2195, 2197, 2203, 2209, 2210, 2212, 2216, 2223, 2242, 2243, 2244, 2245, 2247, 2249, 2272, 3574.

knowledge public. His manuscripts are little notebooks that are a playground for his work in progress. One can deduce analysis and sorting processes from the notebooks. They contain different kinds of information, meanwhile the printer version is often a clean version. Harkness studied the case of 'Plat's published account of a lantern capabale of being carried in high winds without being extinghuished'; she compares this printed account with the information about the same topic in the notebook and sees that the published sketch was elegant and elaborate, meanwhile the one in the notebook was a rough sketch. The notebook contains more detailed information in general, such as the name of the informant, more precise construction details and size. There are marginal notes with the right terminologies about the parts of the lantern.[100] The notebook is a working document. Matters discussed here are often presented open-ended; they are product of collaboration and contingency. The printed books are different because they contain the selection of practical knowledge Plat esteemed suitable to be made public. The printed books contain tested and reliable practical knowledge.[101] Plat's notebooks are his work in progress; his publications are the final result.

Plat's most famous work, *The Jewel House of Art and Nature*, is presented as a work 'conteining divers rare and profitable inventions, together with sundry new experimentes'.[102] Both inventions and experiments are essential to Plat's thought and contributions. The next two paragraphs develop thoughts about his inventions and approach to experiments, because he is a practicing mediator. Inventions in Plat's body of work are improvements on existing ideas. Thick determines four categories of novelties: military, industrial, domestic, and agricultural applications.[103] In 1605 Hugh Plat was knighted by King James VI (1566-1625), because of his service as an inventor.[104] He was noted for his inventions. Some of his inventions were published, others were kept in his notebooks, and others again were meant to be sold. Plat's 'Jewel House' was not only a publication, but also a physical place where he sold his inventions. The bulk of his notebooks consists of lists with specific inventions that could be sold such as macaroni, ink powder, and others. Thick observes an interesting fact about Plat's shop. The name of the shop was projected to be 'Jewel House'. A jewel house is a building to secure jewellery, which was 'a cabinet of curiosities', associated with 'innermost secrets'. Thick argues that clear plans were made but it is unsure whether the shop actually got

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[100] Harkness 2007, p. 236.
[101] Harkness 2007, p. 236.
[102] Plat 1594, sig. A1r.
[103] Thick 2010, pp. 285-286.
[104] Lee 2004; Harkness 2007, p. 233.

finalized. There was a namesake exhibition to show his inventions, which was held in his proper house.[105] Mukherjee found evidence about the materialization of the shop in priced inventories and references to further ideas about furnishing 'our' Jewel House in a letter to Plat from his cousin.[106] If the shop did become reality, Plat's inventions were not merely spread through print. Also the physical space of a shop would have contributed to his trademark. Plat's innovations contributed to the creation of new practical knowledge.

As said earlier, in the light of practical knowledge, inventions were improvements on existing ideas. Plenty of these improvements could be developed through experiments. Fundamental in Plat's thought was that true understanding of nature came through experiment. He had a certain strategy to study nature. First came the selection of an object of study, where after he collected pleasant and useful insights on the matter. Finally he tried to obtain credible information about the property of nature from a practitioner, or he would assist on an experiment and see it himself, or he would conduct the experiment himself.[107] In the preface of *The Jewel House of Art and Nature* he wrote that he had 'spent som of my sweetest hours in reading, & many of them in conference, and more in practice, but most of al in contemplation, in regard of al my charge & travel, adventure as boldlie as the rest, to commend the flowers of my youth, to the courteous view of al well disposed readers'.[108] I conclude that Plat defined an order of importance in the production of his secrets: reading was the least important, and practice the most important action. Reflecting and contemplating took up the largest part of the process.

One of the characteristics of Plat's profile as a mediator is the practicing of medicine. This is a point in common with some of the professors of secrets, in particular with Leonardo Fioravanti. Plat, just like Fioravanti in some circumstances, was an unlicensed physician. He openly practiced medicine and even left written records about the patients he cured.[109] He did not have a specific degree in medicine, yet he also traded in medicine. Other practitioners who tried to walk this way got into trouble with the College of Physicians. Thick calls upon the case of John Clark, a 'collaborator' of Plat, or at least somebody who offered cures based on Plat's recommendations. Clark claimed to have been involved with Plat for the writing of two treatises about medicine, which are lost today. He was imprisoned and fined in 1603, but later released from prison. As far as

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[105] Thick 2010, pp. 335-337.
[106] Mukherjee 2011, p. 75, n.25.
[107] Harkness 2007, pp. 225-226.
[108] Plat 1594, sig. B4v.
[109] Harkness 2007, p. 230.

I am aware there is no record saying that Plat ever came to struggle with the medical authorities. Thick argues that he probably enjoyed protection from clients with high ocial status.[110] His list with cured patients contains fifty-one names of people he healed between 1593 and 1605.[111] At this point in time it is unclear to me if this contains only the healings through personal contact or also the ones over distance, by passing on medications through another person, or through magic. Thick points out that his medical notes contain a lot of information, but are silent about how he operated.[112] Plat left documental proof to sustain that he was a practitioner for a living, other than a writer for a living. Even though these documents give no insights in the precise working way, they are of great value to situate this practitioner.

Ayesha Mukherjee creates the image of Plat as a critic. Mukherjee studied Plat's writings and marginalia in printed books, and finds his notes informal and more personal. Especially, Plat attacked professors of secrets in his body of work. Mukherjee observes that Plat's criticism is spread over the whole of the body of work.[113] *The Jewel House* contains Plat's perception of the professors of secrets. What he referred to as 'that magical crew' included Albertus Magnus, Alessio Piemontese, Girolamo Cardano, Antoine Mizauld, Giambattista della Porta, Leonardo Fioravanti, and Johannes Jacob Wecker. He probably got to know this international company through a work of Wecker: 'Wickerus, that painefull gatherer and disposer of them all'. He juxtaposed this group with the group of 'professors of rare & profitable inventions'. *The Jewel House* contains three points of criticism. His first argument concerns the language of the professors of secrets. They write in 'Latine, French, or Italian', which is not accessible for 'the vulgar sort of people, who have most need of some profitable inventions'.[114] Plat was actively involved in making knowledge accessible. He made a translation from Latin to English of the three books of Cornelius Agrippa's *De occulta philosophia* (1509–1510), preserved at the British Library in MS Sloane 2223.[115] Plat expressed his objection against the language of the professor of secrets, to be taken in a two-fold way. He was not in favour of foreign texts that needed to be translated. And he disapproved of their dark and obscure phrasing.[116] He judged that the philosopher Cornelius Agrippa wrote learnedly

[110] Thick 2010, pp. 213-214; 216.
[111] Harkness 2007, p. 230.
[112] Thick 2010, p. 229.
[113] Mukherjee 2011, p. 70.
[114] Plat, *The Jewel House*, 1594, sig. B3v.
[115] Mukherjee 2011, p. 71.
[116] Mukherjee 2011, pp. 70-71.

'though exceeding darklie'.[117] Plat's second argument that disputes the professors of secrets is 'untruth in their best and most especiall receipts'. Followed by his last argument, that what the professors of secrets have written comes forth 'only by a theorical and speculative kind of contemplations, and not drawne from the infallible grounds of practice, [they] have published whole volumes by imagination onely'.[118] The image of Hugh Plat as a critic is studied here in light of his criticism in various parts of his work addressed towards professors of secrets.

Hugh Plat, a quintessential mediator of practical knowledge, left us with an interesting body of work. Plat was a most active participant in practical knowledge production and dissemination. He used a wide variety of sources and interacted with the knowledge he encountered. Improving existing knowledge was what he did, relying on his proposals in his books, which makes him a producer of new or renewed practical knowledge. Plat presumably had a shop where he sold his inventions. But Plat was not only a professional writer and innovator; he practiced medicine without degree. In contrary to his Italian colleague Leonardo Fioravanti, he was never juridically prosecuted. As said earlier, this different might be due to the political and religious climate; Plat lived a stable life in London where he enjoyed contacts with plenty of individuals from the high social classes and it is not unthinkable that he benefitted from their protectionism. Leonardo Fioravanti, on the contrary, was an itinerant medical healer, being always a passenger, a wandered who was not considered a local. The profile of Plat is different from the idea of an expert that one day gets up and decides to write in order to entrust trade secrets to the world. Plat had an investigating and undertaking spirit, which emerges out of the remaining documentation.

4.   Conclusion

In the second chapter of this PhD dissertation I studied patterns of transmission or how practical knowledge found its way to other people. In this chapter I have investigated categories of people who dominate the patterns of practical knowledge transmission. Virtually all people dealth with practical knowledge in one way or another. I made thus a purposeful selection and narrowed the group down to people who have a principal role

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[117] Quote from Plat's work Floraes Paradise, taken from Mukherjee 2011, p. 71.
[118] Plat 1594, sig. B3v.

in the information flux. My focus lies on mediators of practical knowledge, meaning that they are responsible for a wide dissemination of information. All mediators collect and reproduce practical knowledge. Since mediators are defined by the wideness of their audience or knowledge dissemination network, they have a strong tendency to use print as their way to reach their public, and often as their main source of income. The printing press was a good technology for such a potent medium as books. In light of this section I studied the profile and position of two subcategories: the literary writers and the practicing mediators.

One prime idea of this whole PhD thesis, and more specifically of the second chapter of Part I, is that recipe books are compilations. That idea flows into this chapter it focuses on individuals dealing with practical knowledge, meaning that they collect, organize, experiment, and divulgate practical knowledge. I have rejected the idea that a significant part of printed sixteenth-century recipe books were a result of a monopoly of secrets. The argument that there is a master brain or single responsible person behind a determined selection of Italian recipe books has generally found fertile soil in contemporary research, being mixed anglo-saxon, French, and Italian. I've argued, however, that books always came into being through collaboration between people, directly or indirectly. One can at most point out the writer of a certain manuscript or publication, somebody who collects and brings together material.

In the case of the *Secreti* of Isabella Cortese, various people have been pinpointed as the 'true' mastermind behind her work. Among those proposed were the printer Bariletto, the dedicatee Caboga, the privilege asker Navò, and another professor of secrets, Ruscelli. Among those, I find only Mario Caboga to have a reasonable case supporting him as the compiler of Cortese's *Secreti*, but even there, there is no conclusive proof. In the case of the *Secreti* of Alessio Piemontese, it was certainly Girolamo Ruscelli who put them to print. Later he was identified as the 'true' author, but I argue that Ruscelli was the compiler and editor, rather than the author. In his turn, Alessio Piemontese, a true gatekeeper of practical knowledge, gathered information from various sources. His work was published by Ruscelli. Ruscelli is the true mediator because he opened the information flux to the wider public. And Alessio is a hybrid between gatekeeper and mediator by his original work and further dissemination. I have shown that Cortese's *Secreti* and Ruscelli's *Secreti nuovi* are compilations. Also Plat's work is a collection of gathered recipes, as is the work of Alessio Piemontese. The literary mediators are presumably Mario Caboga and Girolamo Ruscelli.

Another aspect that is fundamental for practical knowledge creation and transmission is actual practice. The mediating practitioners interact in a significant way with practical knowledge; they conduct experiments in order to adapt or innovate the materials. I focused on two medical practitioners that published, Leonardo Fioravanti and Hugh Plat. Ironically enough, the Londoner Hugh Plat did not obtain any legal certificate in order to be a legal practitioner, yet never got into trouble with the established medical orders. As argued before, the personal network of socially higly placed people and the polical and religious climate might have been working in Plat's favour. Contrary to this is the case of the Italian Leonardo Fioravanti, who had a degree from two leading universities, Bologna and Naples, got into trouble with the authorities more than once, both nationally and internationally. Fioravanti has often been associated with charlatanism, like many medical practitioners of his days. He itinerant status made that he was never considered a local. Both practicining mediators operated withing legal systems with different rules and working ways; they worked within worlds with different religious and political climate, which influences how knowledge was dealth with. What distinguishes both cases from other contemporaries are the amount of publications and the personal fame, or their position as mediators of practical knowledge.

Already in the second chapter of the first part I demonstrated through the case study of the *Kunstbüchlein* that practical knowledge has European dimentions. What originally circulated in Germany, soon found its way towards the rest of Europe. In the current chapter the European dimension of practical knowledge returns. Plat for instance was well aware of the existence and status of the professors of secrets, which exists out of individuals from different parts of Europe. Practical knowledge use and transmission have both a local and an international dimension.

What most mediators have in common here is a certain level of doubt regarding their identity and the authenticity of their expertise. The case of Hugh Plat is the most clear and least uncontested, although even he practiced medicine without a degree. However, Plat's criticism about the category of professors of secrets is very useful to us today. The writings of the professors of secrets, according to Plat, needed translation and simplification in order to be transmitted purposefully. Finally, according to Plat, their material was not based on practice. As seen in this chapter, the mediating writers principally collected, edited and published recipes. For the writer, this was a purely textual cycle of events. For the practitioner, this cycle was unthinkable without practice

and experience. Plat and Fioravanti both introduced experiments into this cycle and obtained adaptations and innovations of practical knowledge as a consequence.

Both categories, the literary and the practicing mediators, often were contested while alive, but the image and controversies persisted for some centuries. The importance of these individuals for the current chapter is remarkable, as they were responsible for the wide spread of practical knowledge through print, being one of the determinging argumetns to indicate somebody as a mediator. Mediators of practical knowledge were in a determining position of control of the information flux, for people in early modern Europe and well beyond.

Part II

A VERY PROPER TREATISE

(1573):

THE CASE STUDY OF

AN ART TECHNOLOGICAL

PRINTED BOOK

Introduction

Part II of this PhD dissertation is a micro-scale case study about one book title and its context. The centrepiece of this study is the early modern English printed book *A Very Proper Treatise* (1573). Here the concept of practical knowledge is narrowed down to art technological knowledge. Ad Stijnman describes 'art technology' as: 'knowledge concerning the production methods of works of art or craft, i.e. knowledge concerning materials, tools, machines, techniques, and sites used in making objects with a certain cultural value / from cultural heritage'.[1] Art technological knowledge is imbedded in art technological sources. For sources I refer back to the communicative trinity of Fernando Bouza[2] The communicative trinity is a triangle of oral, visual and written communication. This triangle indicates the ways in which knowledge or information can travel. At the basis of each type of communication is a source. In this part of the PhD dissertation I deal with textual sources, moreover with textual sources containing art technological knowledge.

Part II of this thesis is conceived in symmetry with Part I. It contains three chapters that consecutively talk about 1) the origin or creation of the work, 2) the transmission and dissemination dynamics, and 3) the consumption.[3] First, I will briefly introduce the recurring topics that will serve as guiding lines throughout this second part. Chapter one of Part II focuses on *A Very Proper Treatise* as a work with a literary tradition, and will use textual criticism to study the content, themes, and sources of the book. It further looks into dynamics of textual transmission of the text of *A Very Proper Treatise*. The focus lies here with the text. Generally, the first edition of 1573 will be used,

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[1] Stijnman 2015.
[2] Bouza 2004, p. 11.
[3] The introduction has a schematic representation that includes all six chapters.

unless otherwise stated. This chapter will come with an appendix that gives the collation of the six known editions. The main question for this chapter will be: what information was communicated and where did the information come from?

Chapter two of Part II takes the study further by historicizing *A Very Proper Treatise* as a commodity, taking the book title as a printer's compilation. It will pay attention to the marketing strategies of the printer in the making and selling of this book title. The printer was the driving force behind this enterprise; he functioned as the (literary) mediator in the dissemination process and contributed exponentially to the dissemination of the text and book of *A Very Proper Treatise*. To follow the idea that this book is a printer's compilation I will introduce the idea of separation where the body and index will be separated from the title and printed information in the margins. I have found textual evidence to sustain the idea that the body and indexes were transformed into a coherent part. The title and marginal information additions and elaborations form the part of the printer's elaborations of the text. He made these additions in a purposeful way, seeking to enlarge and specify interests and public. The main question here is: How could the information be spread? Who initiated this process? What was the printer's contribution to the selling of secrets? The short answer is that Richard Tottel probably consulted several sources and selected, collected, rearranged, and modified recipes into a coherent and well-structured work. This chapter examines details of his personal life, business, and working method because his printing business and personality form the context for understanding the making of the book.

Chapter three of Part II investigates the consumption and the consumers of *A Very Proper Treatise*. For this study, a material approach to each individual copy is required. The main strategy used to reach conclusions is the tracing of user signs. Signs of use can be seen in the signature of an owner, a comment of a reader, stains provoked by human interaction, and many more. All these interactive events with a book are seen as significant for the reading and interpreting of the life of a book. Because the different types of reader interactions were many, I made a selection of books and events that most interestingly respond to the question: who used *A Very Proper Treatise* and how was it used? The public will be discussed more completely; the use will be focused on an artistic and religious interest. Never before has a study about the actual users and use of *A Very Proper Treatise* been attempted. Through this study I am able to pin down the people who were in possession of a copy of *A Very Proper Treatise* in their collection and see that the actual use of the book was linked to the subject of interest, but also transcended this.

One of the narratives of Part II concerns the publication of *A Very Proper Treatise*, which is a compiled recipe book. This means the current book borrows material from several sources, which is a common feature for recipe books and works of practical knowledge. The first chapter will focus on the sources, the second chapter will look at how these sources were brought together and by whom, and, finally, the third chapter will look at how these sources were turned into new sources. This narrative of sources will uncover a dynamic transmission of texts and art technological knowledge. It will be clear that while a manuscript was put into print, it would also eventually revert back to manuscript form. It also went back into print after a second manuscript phase.

Another guideline through these three chapters is the public. Susan E. James, who hypothesised that the authorship of *A Very Proper Treatise* appertains to miniature painter Levina Teerlinc, also argued that the volume was made for a 'professional public'.[4] In response I have a very analytical concept of the public and divide the public of *A Very Proper Treatise* into: intended public, circumstantial public, and actual public. A professional public might have been part of the audience, but as shall be seen, this public is varied in nature.

Through the reading of the text one gets a diversified image of the public. One of the sources used was meant for 'painters & scriueners', and this original intended audience probably goes back to the manuscript tradition that lies at the core of *A Very Proper Treatise*. Then in a different instance, in the title, the book proclaims that it was meant for 'gentlemenne', which I collocate as the intended public for the printed edition in particular. The title is one of the marketing instruments of a publication, created by the printer. The image of the public becomes more complex when examining the empirical evidence of the actual owners of the book. Tottel had his fixed customers of his print shop, a group of people living in London, among which a lot of law students and layers, who where regular buyers. This group is a different one from the (which I identify as) actual audience, who were people that left physical traces of consumption and ownership to books. These people are spread in the whole of the country. Tottel's reach on the book market was bigger than what his shop covered.

The narrative of the audience of *A Very Proper Treatise* is complex and will emerge during the three chapters. In the first chapter I will concentrate on the text of the book and therefore I will discuss the intended audience or the audience the writer had in mind while writing the book, which will put us on a two-headed trail. The second chapter of

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[4] James 2009, p. 294.

the second part will focus on the circumstantial or contextual audience, or the audience that was part of the customer network of the editor and printer. The third and last chapter will focus on the actual audience. These data are borrowed from a material investigation of each individual copy of *A Very Proper Treatise*. The conclusion will reflect a comparison between these three different ideas of audience along the various phases of the life of a book.

Chapter 1.

A Very Proper Treatise (1573) as a Literary Product,

Reflecting Art Technological Knowledge.

1. Introduction to a text

The object of analysis of Part II of this PhD dissertation is a concise volume about limning entitled *A Very Proper Treatise*, which is also known under the running title *The Arte of Limming*. This treatise explains various stages of limning in the form of instructions or recipes, with 'limming' or 'limning' indicating miniature or watercolour painting.[5] The importance of *A Very Proper Treatise* lies in the fact that it was the first

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[5] The OED reports that the first registered use of the word limning, intended as miniature or miniature painting, appears around 1485 in MS Porkington 10. The concluding section of the manuscripts deals with *the crafte of lymnynge of bokys*. See Halliwell 1855, pp. 72-91;
http://www.oed.com.chain.kent.ac.uk/view/Entry/108510?redirectedFrom=limning#eid.

English printed book treating specialized painting recipes only.[6] Today six editions are known of this book title. This anonymous recipe book was firstly printed in 1573 and again in 1581 by Richard Tottel in London. Thomas Purfoote reprinted the volume in the years 1583, 1588, 1596 and 1605. There are no editions known by me that were printed outside of London or Britain. The sixth edition is marked by a slight change in the title: *A Proper Treatise* rather than *A Very Proper Treatise*.[7] The historiographical research that I conducted brought a potential seventh and eighth edition to my attention, but both cases might be premised on a misreading. A 1593 edition was suggested in Thomas Moule's *Bibliotheca Heraldica Magnae Britanniae*.[8] Moule was aware of the editions in 1573, 1583, and 1588, and says that the book title was printed again in 1593, which so far cannot be confirmed by the surviving and signalled copies. Likewise, several eighteenth and nineteenth century overviews of art books in German, French, and English report the existence of a 1625 edition carrying the name of the 1605 edition: *A Proper Treatise*. It is possible that this information is based on the misreading of the year 1605. An indication that sustains this argument is the nature of the books reporting the potential 1625 edition, none of which display a book historical interest in collocating a precise copy and all works have the same intent, which is to list all past publications about art. Possibly the information of this first overview of 1793 was taken up blindly in other European editions.[9] Further, *Bibliotheca Heraldica* is an analytical catalogue of books, purporting to list not only book titles, but also their editions. I argue that an additional edition in 1593 is more likely than one of 1625, because this would leave fewer years between the several editions and lines up with the initial frequency of publication of the editions.

The text of *A Very Proper Treatise* is in essence a recipe book. The text is built out of a sequence of recipes offering instructions to make certain things. Textually speaking, these individual instructions contain the same criteria as many handwritten recipe books. This means that the size of the recipes can vary. Some recipes may be a composition of

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[6] Another relevant aspect that contributes to the position of a book in the landscape of publication is the following: Gullick argues that the text of *A Very Proper Treatise* contains new, earlier unpublished, procedures. See Gullick 1979, p. 1.

[7] The sixth and last known edition has a slight alteration in the title, which is *A Proper Treatise*. Only when I refer to a precise copy of this edition, or to characteristics of this edition, I will use this title. Conclusions based on this title are sometimes valid for all of the editions and therefore I will often talk of *A Very Proper Treatise* rather than *A Proper Treatise*, because of the reference to the whole. The texts of all copies are largely and significantly the same. The minor differences are pointed out in collation in appendix 3. Appendix 2 shows the all the traced physical copies, ordered by year of publication and geographic position of conservation.

[8] Moule 1822, p. 22.

[9] Sulzer 1793; Von Blankenburg 1797; Millin 1806; Elmes 1826; Curtis 1829; De Montabert 1829.

instructions coming from different recipes. In some cases a recipe offers a variant or more variant methods to obtain the same effect. For instance, the recipe to make a thin size proposes to use 'newe shreds of glovers leather', but halfway it says that 'the like sise maye you make […] of glue water made of parchment glue'.[10] In other cases the marginal space would indicate a new text fragment with the word 'nota'. For example, the recipe 'to make a black colour, or an ynke' is long, almost two full pages. In the margin appears the word 'Nota' four times, giving different kinds of information such as material quality of certain substances or another procedure used by the 'excellent sort of painters'.[11] Finally there is the writer who manifests him or herself in the first person singular occasionally, such as 'here have I tought you'.[12] The use of 'I' is another returning characteristic of recipe books.

In this chapter I will study the text of *A Very Proper Treatise*, through the application of textual and literary criticism, analysing the work from a textual and literary point of view. I will discuss the title, the intended public, the form, interesting textual instances, and the content. This chapter investigates what has been written and how one can see that it is a compilation. In the next chapter I will historicize this compilation as a printer's compilation. Textual criticism tends to restore texts to their original form. In the second chapter it has been demonstrated through the use of the metaphor of the rhizome that the textual reconstruction of a recipe book is laborious and difficult to obtain. However, in this chapter I will look for potential sources. I will do so not with an eye on restoring the text, but rather to understand where certain textual and practical traditions come from. This will help the second chapter where I argue that *A Very Proper Treatise* is a printer's compilation. I will not only look at where *A Very Proper Treatise* copies from, but also how the book was used as source for copying.

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[10] Anonymous 1573, fol. 2v.
[11] Anonymous 1573, fols 7r-8r.
[12] Anonymous 1573, fol. 11v.

2. The importance of the title: overview, public, and utility

A very proper trea-
tise, wherein is briefly sett forthe
the arte of Limming, which teacheth the order
in drawing & tracing of letters, vinets, flowers, armes
and Imagery, & the maner howe to make sundzy sises oz
grounds to laye siluer oz golde vppon, and how siluer oz
golde shalbe layed oz limmed vppon the sise, & the waye
to temper golde & siluer and other mettales and diuerse
kyndes of colours to wzite oz to limme withall vppon
velym, parchement oz paper, & howe to lay them vppon
the wozke which thou entendest to make , & howe to
vernish yt when thou hast done, with diuerse other
thinges verp mete & necessary to be knowne
to all suche Gentlemenne , and other
persones as doe delite in limming,
painting oz in tricking of armes
in their right colozs, & therfoz
a wozke verp mete to be
adioined to the bookes
of Armes, neuer
put in pzinte
befoze this
time.
(:)

Imprinted at London in Flete
strete within temple Barre at the
signe of the hande & starre
by Richard Tottill.
An.1573.

Cum Priuilegio.

Figure II.1.1: San Marino, California, Huntington Library, *A Very Proper Treatise* (1573): title page (Appendix 2, no. 10)

Before starting my argument I will list all different parts in *A Very Proper Treatise*, in order to facilitate the readability in this part:

1. Title page
2. Body of work: forty-four recipe titles[13]
3. List 1: Index of ingredients
4. List 2: Table of recipe titles

The short title of the work of interest is *A Very Proper Treatise*. Before I discuss the entire

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[13] Several recipe titles contain variant proposals to obtain the desired result. In these cases a single block of text following the recipe title can actually contain two or more recipes or sets of instructions. I conclude that this recipe book contains more than forty-four distinguished recipes or procedures, but I counted the textual units linked to titles.

title as it appears on the title page, I will briefly introduce other information about the title of the book. The running title of the work, which appears in the upper margin in all the six editions, is *The art of Limming*. The running title appears on each of the pages that contain recipes. In the name index at the end of the book, *A Very Proper Treatise* is referred to as 'this present booke of lymming'. An often associated word with this work is 'limming' as can be observed in the full title of this concise work. The complete title of the first edition is as follows:

> 'A very proper treatise, wherein is briefly sett forthe arte of Limming, which teacheth the order in drawing & tracing of letters, vinets, flowers, armes and Imagery, & the maner how to make sundry sises or grounds to laye siluer or golde uppon, and how siluer or gold shalbe layed or limned uppon the sise, & the waye to temper golde & siluer and other mettales and diuerse kyndes of colours to write or to limme withall uppon velym, parchement or paper, & howe to lay them upon the worke which thou entendest to make, & howe to vernish yt when thou hast done, with diuerse other thinges very mete & necessary to be knowne to all suche Gentlemenne, and other persones as doe delite in limming, painting or in tricking of armes in their right colors, & therefore a worke very mete to be adioined to the bookes of Armes, neuer put in printe before this time.'[14]

The complete title on the frontispiece of this book gives an overview of the topics it discusses, the intended public, and the use of the book. The title of the book declares it to be a treatise. According to the OED, a treatise is 'a book or writing which treats of some particular subject […] formerly more widely used for a literary work in general'. The term 'treatise' is also understood as a description or an account.[15] Treatises could appear in all kinds of literary genres. There are plenty of physical and religious treatises for instance. This particular treatise gives a series or collection of art technological recipes, appearing in the order of the proceedings of a limner. The book starts with the order of drawing. Then it issues the preparation of ground or size, and subsequently the preparation of colours to write or to limn with. It contains also a recipe for varnish, and finally other practical knowledge useful for limming. The title gives another word on the intended audience, which are gentlemen and other people. Subsequently I will talk aobut

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14 This transcription is faithful in the representation of capitals as used in the first edition.
15 OED.

two other books. Finally, the title concludes with the information that it was never put to print before. Other than the title, the title page contains information about the place of printing (London), the printer (Richard Tottel) and his shop ('Flete Strete within temple Barre at the signe of the hande & Starre') and the year of printing (1573). I refer to the first edition in this last case, obviously this information changes for every single edition. The very last information on the title page is about the legal formula to indicate that the printer obtained permission to print the book title. I conclude that the title page contains essential information about the publication: title, subject, audience, printer, printing place, date of publication, and legal status.

The title of *A Very Proper Treatise* says that it is 'very mete to be adioined to the bookes of armes'. The title proclaims or invites the reader to bring *A Very Proper Treatise* together with the 'bookes of armes', which are very 'mete' or 'suitable'.[16] Neither the title, nor the book explains what the precise meaning of 'books of armes' is. However, the context will bring answers. First I will try to situate a group of works from the first printer of *A Very Proper Treatise*, Richard Tottel; second, I will contextualize internal references to Tottel's body of work; and third, I will use material evidence to strengthen my hypothesis.

Richard Tottel has two other book titles among his body of work that have a connection with 'armes' and heraldry. The first book is *The Accedens of Armory* (1562), by Gerard Legh. The second book is *Workes of Armorie* (1572), by John Bossewell. What these three book titles have in common, other than a link to heraldry, is that all first editions were printed by Tottel. Further, these are also the only three works about arms that Tottel ever published. Words in titles are usually not chosen randomly. Probably Tottel had a clear purpose attributed to the printing of *A Very Proper Treatise*, this thought will be further developed in the next chapter. There are other internal references in Tottel's body of work, such as the heraldic layer in the work, which will be studied in the following chapter. The edition of 1570 of Thomas Tusser's *Hundreth good Pointes of Husbandry* contains a reference to *Songes and Sonettes*, as a 'standard of excellence'.

To sustain my hypothesis that the printer was the originator of the work I will engage my material investigations of each of the copies of *A Very Proper Treatise*. The copy at Trinity College Dublin responds exactly to the suggestion in the title.[17] Volume

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[16] I was unable to find the adjective 'mete' in the OED, however, this word was used by Nicholas Hilliard in his *Art of Limning*. The transcription published by Arthur Kinney in 1583 notes in the margin that it means 'suitable'. Cf. Hilliard 1583, p. 17.

[17] Appendix 2, no. 13.

EE.k.19 binds *A Very Proper Treatise* 'to the bookes of armes' in one single binding. There are some few material indications showing that the current binding replaces an earlier original binding. The binding houses three books, all three books have cropped pages of the same dimension. The leaf edges are sprinkled with red paint, a habit specific for the seventeenth and eighteenth century. The order of books is remarkable, as they appear in the order of the first editions:

1. *The Accedens of Armory* (1576, first edition 1562)
2. *Workes of Armorie* (1572, first edition 1572)
3. *A Very Proper Treatise* (1581, first edition 1573)

If the early modern person had respected the chronological order of the printing date, the order of the first two books would be reversed. The person who bound these books together made a selection out of other works, because the title page of *The Accedens of Armory* contains a partially lost reference to 'libris 8' or eight books that were acquired at a certain moment in time. Another person acknowledged the existence of the three book titles in this volume by numbering each book. The numbering of books, or acknowledging their sequence in a certain binding, is a habit among people with more ample interests in books. The Dublin binding and collector's habits will be further discussed in the last chapter.

3. The intended audience of *A Very Proper Treatise*

One of the first things that caught my attention about the text was the co-existence of different kinds of intended public. The intended audience of *A Very Proper Treatise* is defined in two instances in the text. The first time it appears in the title, the second time at the closure of the recipes. Both instances show a different aspect of the intended audience. In this chapter the characteristics of the intended audience will be discussed. In the following chapter the reasons for this division in audience will be examined.

The full title specifies two groups as audience, being 'gentlemenne' and 'persones as doe delite in limming, painting or in tricking of armes in their right colors'. The term 'gentlemen' refers to a social rank in the early modern English society, which was

organized in an unequal and layered fashion.[18] Because the title page of *A Very Proper Treatise* proposes gentlemen to be the ideal readers I will examine what a gentleman was. Keith Wrightson describes the layered English society as a society with 'degrees of people', based on the four classifications of William Harrison (1535–1593): the first degree is that of gentlemen, consisting out of nobility, knights, esquires and 'last of all they that are simplie called gentlemen'. The second degree is that of the citizens and burgesses; the third degree contains the yeomen; and finally, the fourth degree includes labourers, poor husbandmen, artificers, and servants.[19] The early modern terminology around classifications was not set in stone. Wrightson points out that Sir Thomas Wilson for instance subdivided society into nobles, citizens, yeomen, artisans, and rural labourers.[20] Wrightson argues that early modern people would categorize society further by conventionalising 'sorts of people'.[21] A lot of stereotyping adjectives could be applied to describe people (poorer, common, wiser, learned, ruder, vulgar, better and many more).[22] Following Michael Braddick and John Walter, I will avoid analysing society as a class system, because this would depend upon an anachronistic terminology born of the nineteenth century.[23]

The gentleman held a special place in the social order of early modern English culture.[24] However, if one looks at statistical evidence, they were not very numerous. In early seventeenth-century Kent and Lancashire gentlemen made up two per cent of the population.[25] Also, gentlemen as a group held no legal classification.[26] Wrightson points out that gentlemen were 'in strict definition the younger sons and brothers of esquires and their heirs', but in practice this classification was hardly sustained.[27]

The early modern concept of a gentlemen is quite fluid and could be understood in different ways but it emerges from a hierarchical society based on social status that can be inherited or conquered. The old English proverb 'it takes three generations to make a gentleman' echoes the heraldic need for 'three degrees of gentry, both on mothers and fathers side'.[28] The bloodline and lineage argument was well developed. In the *Book of*

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[18] Hindle 2001, pp. 655-656.
[19] Degrees taken from Wrightson 1982, p. 4.
[20] Wrightson 1982, p. 5.
[21] Wrightson 1994, p. 33.
[22] Wrightson 1994, p. 34.
[23] Wrightson 1994, pp. 29, 50, 51.
[24] Wrightson 1982, p. 7.
[25] Hindle 2001, p. 656, Wrightson 1982, p. 8.
[26] Wrightson 1982, p. 7.
[27] Wrightson 1982, p. 8.
[28] Shapin 1994, p. 53.

Saint Albans (1486) it goes back to the angels, who were 'creatyd in heven of gentill nature' and 'the begynnynge of mankynde'.[29] This line of thought was very old at the time and was already contested long before. Already Dante Alighieri challenged the idea that gentility was inherited by blood in his *Convivio* or *Banquet*, written at the beginning of the fourteenth century.[30] Another concept about gentlemen takes the economic status in society into account, which functions in a similar way like the bloodline.[31] Willliam Cecil, Baron Burghley (1520/21–1598), wrote that gentility is 'nothing else but ancient riches'.[32] Henry Peacham (1578–died in or after 1644) defined in his *Compleat Gentleman* (1622) that 'touching the mechanicall arts and artists, whosoever labour for their livelihood and gaine, have no share at all in nobiltie or gentry', but again, Peacham also proclaimed that 'riches are an ornament, not the cause of nobilitie'.[33] An interesting working definition about an English gentleman is provided by Guy Miège who wrote in 1703 that 'any one that, without a coat of arms, has either a liberal or genteel education, that looks gentleman-like (whether he be so or not) and has the wherewithal to live freely and handsomely, is by the courtesy of England usually called a gentleman'.[34] It is interesting to see that according to Miège, gentlemen did not have to possess a coat of arms. And *A Very Proper Treatise* precisely promotes its use for heraldry. Even though in various instances the gentle birth, heraldic status, and economical situation of a person played a role in defining whether the person was a gentleman or not, there are other ideas in circulation about the education and behaviour as being the prime characteristic of a gentleman. Overall, then, the understanding of who was a gentleman in the early modern period was characterized by variation and fluidity.

The full title adds to the group of 'gentlemenne' the 'persones as doe delite in limming, painting or in tricking of armes in their right colors'. This second part of the intended audience indicates a group that limns for leisure. The title leaves a lot of room for interpretation of its ideal public. Somehow this addition facilitates the transition to the other definition of the public at the closure of the recipes. At times 'pleasure' was a determining aspect in the understanding of what a gentleman was. A critical note was made in the early encyclopaedic book of Bartholomaeus Anglicus, originally a thirteenth-century source but reprinted in the sixteenth century: 'What is a gentleman but his

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[29] Berners 1486, sig. E6r.
[30] The entire fourth treatise in the *Banquet* addresses the issue of gentility. Cf. Alighieri 1903, pp. 224-382.
[31] Shapin 1994, p. 53.
[32] Shapin 1994, p. 50.
[33] Peacham 1622, pp. 20; 23.
[34] Barry and Brooks 1994, p. 6.

pleasure: but who is more gentle, he that favoureth the poore to the profit of a common wealth, or he that lasciviously spendeth more in one yeere then his parents got in 20'.[35] The title page of *A Very Proper Treatise* sells this book to people of certain standing and people with interests in limning.

Elsewhere in *A Very Proper Treatise* a variation on the public appears. In the concluding word, the writer of *A Very Proper Treatise* addresses the audience as 'painters & scriueners'. A painter is quite straightforward; it is an artist or craftsman that makes images or pictures, principally with paint. The OED gives a range of options for a scrivener, which is somebody who is 'a professional penman; a scribe, copyist; a clerk, secretary, amanuensis'. In his work on the material letter James Daybell points out that both men and women made use of the service of scriveners. This was forced by the rate of illiteracy, but it could also be a matter of choice. Circumstances could be such that the person was in need of a scrivener, such as with illness. It was quite common that household servants, family, friends, or neighbours would write letters as duty or favour. Scriveners and scribes were paid to do so. According to Daybell scriveners were 'semi-professional letter-writers'.[36] In my article on the artist network around Sofonisba Anguissola, Giulio Clovio, and Levina Teerlinc, I have talked about how the writer and poet Annibale Caro wrote multiple letters for his acquaintance Giulio Clovio.[37] The OED extends the function of a scrivener to the writing business, not only linked to letters. This would be more in line with how *A Very Proper Treatise* uses the notion of scriveners, which is linked to writing in general. In fact, some recipes deal with paper or parchment support for colours and ink and associated techniques to draw, paint and write. The manual could be meant for home consumption; there is an ingredient list at the end of the book with substances one could buy at the apothecary.

The connection between gentlemen and arts is not that strange or exceptional. The earlier mentioned *Compleat Gentleman* (1622) of Henry Peacham is a manual or guidebook for the gentleman. The text offers twenty chapters covering a broad range of subjects including the qualities and topics concerning education, communication, and disciplines such as geometry, music, physics, fishing, and war. What is interesting is that chapter thirteen is entirely dedicated to drawing, limning, and painting. The complete title of Peacham's work says it includes 'the Art of Limming', which may or may not be a reference to *A Very Proper Treatise*. Chapters fourteen and fifteen concentrate primarily

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[35] Anglicus 1582, fol. 185r.
[36] Daybell 2012, pp. 23; 74.
[37] Leemans 2014b, pp. 35-36.

on heraldry. Peacham published earlier works about art technological practices. The first publication was called the *Art of Drawing* (1606), which was expanded into *Graphice* (1612), which at its turn was the basis for the *Compleat Gentleman* (1622). The original nucleus of a work for the education of gentlemen sprouted from a work on drawing and painting, or art technological knowledge. However, for Peacham, limning was part of the interests and abilities of a gentleman.

One can find the opposite approach in the writing of Nicholas Hilliard (1547?–1619). Hilliard is known as miniature painter and goldsmith but also worked as an author, writing *The Art of Limning*, which remained unpublished during his lifetime. This was probably not the original intention, as Richard Haydocke explicitly invited Hilliard to write about the argument 'to the viewe of all men by his pen'.[38] Hilliard proclaims that limning should be exclusively a gentleman's activity: 'I wish it weare so that none should medle with limning but gentlemen alone, for that it is a kind of gentill painting'.[39] Hilliard also gives a concrete reason why this is a gentle painting as one can leave the painting at any point without affecting the work. In fact, with other painting techniques the timing and division of work was well calculated.[40] However, his discourse about the nature of limning betrays Hilliard's thoughts concerning godly involvement:

'Heer is a kind of true gentility when god caleth and doubtles though gentlemen be the metest for this gentill caling or practize, yet not all but naturall aptnes is to be chossen and prefered, for not every gentleman is so gentel sperited as som others are, let us therefore honore and preferre the election of god in all vocations and degrees'.[41]

Hilliard also stipulates characteristics of practitioners that he identifies with a gentleman:

'the fierst and cheefest precepts which I give, is cleanlynes, and therefor fittest for gentlemen, that the praticer of limning be presizely pure and klenly in all his doings, as in grinding his coulers in place wher ther is neither dust not smoake, the watter wel chossen or distilled most pure […] dust or haires weare nothing straight beware you tuch not your worke with your fingers, or any hard thing, but

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[38] Secondary literature is full of Richard Haydocke's invitation to the address of Nicholas Hilliard, but this goes mostly without concrete reference. Haydocke's introduction to the reader is a kind of display of the current source knowledge and activated networks. The precise reference is to be found in Lomazzo 1598, fol. 6r.
[39] Hilliard 1983, p. 17.
[40] I refer to afresco or 'a fresco' painting for instance.
[41] Hilliard 1983, p. 17.

with a cleane pencel brush it, or with a whit feather, neither breath one it […], a good painter hath tender sences, quiet and apt'.[42]

The title of Hilliard's manuscript, *The Art of Limning,* equals the running title of *A Very Proper Treatise.* Also Edward Norgate used the running title of *A Very Proper Treatise* for his work *Miniature*, written at request of Sir Theodor Mayerne.[43] I conclude that there is a shift in meaning of the word liming, where in the last quarter of the sixteenth century it indicates painting in books, meanwhile from the turn of the century limning comes to signify portrait miniature painting, what is treated by both Hilliard and Norgate. By the end of the sixteenth century, and certainly in the seventeenth century, the connection between gentility and painterly activities seemed to be well established. One of the best-known sixteenth century works that discussed the qualities of the courtier is *Il libro del Cortegiano*, by Baldassare Castiglione (1478–1529), written between 1508 and 1516, and published in 1528. James Sharpe described Castiglione's work as 'the prototype etiquette book for the Renaissance gentleman'.[44] A translation in English appeared for the first time in 1561 as *The Courtier*, by Thomas Hoby.[45] The fictitious dialogue between historical personalities is dated to 1506, the year in which Castiglione was in England. Castiglione's *Cortegiano* is the first work dealing with the topic.[46]

A Very Proper Treatise reaches out to the fluid concept if the gentleman, which, as we have seen was not bound by a concrete set of characteristics. Further interested people could have been people who needed instruction because of their professional or leisure activities, among which were painters and scriveners. An analysis of the intended audience leaves a complex image of the group of people the book tries to reach. I speak of two layers of intended public because the public is explicitly named in two instances in the book, at the beginning and at the end. The intended public at the beginning of the book, being gentlemen and people with interest, have to do with status and prestige, either through social status (gentlemen) or through social prestige, because acquiring knowledge and educating oneself can be criteria of prestige. The intended public at the end, painters and scriveners, are professionals in the field of writing and painting in books. The book *A Very Proper Treatise*, as printed and sold by Richard Tottel, promotes itself to a group of people with a certain social status. The text of *A Very Proper Treatise*,

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[42] Hilliard 1983, pp. 21-21.
[43] Norgate 1919, p.5.
[44] Sharpe 2007, p. 10.
[45] Wyatt 2005, p. 37.
[46] Later there are other works that are still relevant, such as *Il Galateo overo de'costumi* (1558), by Giovanni della Casa, and Stefano Guazzo's *La civil conversazione* (1574).

which is older than the printed book, promotes itself to professionals. And thus the double layer of intended public, existing out of an old group, being the professionals, and a new proposed group, being a group of social prestige.

4.   The textuality of material culture: colours

This part will focus on the content of the text. For the material culture involved in this recipe book there are several interesting points, but here I will focus on the approach to colours. *A Very Proper Treatise* offers recipes for many different things such as colours, inks, and varnishes. In total, the text contains recipes for forty-three colours; amongst which there are six blacks, six greens, five reds, five blues, five browns, four oranges, three metals, two greys, two orange-reds, one yellow, one flesh-colour, one rose, one purple, and one white.

The organization of these colours and pigments in *A Very Proper Treatise* can be a complicated matter. For one thing, the denomination of colouring agents is not uniform, and the notion or conception of individual colours changes in across different with time periods and cultures. According to our feeling certain colours would be classified differently respect to early modern definitions. How we see the colour pink today is related to the colours rose, magenta, and fuchsia. But, what the OED says about the sixteenth and seventeenth use of the word pink is quite surprising. Pink used to be 'a yellowish or greenish-yellow lake pigment made by combining a vegetable colouring matter with a white base, such as a metallic oxide'. Merrifield points out that there was a further classification of pink, there was Dutch pink, Italian pink, brown pink and many more.[47] Today the seventeenth century pink would be referred to technically as 'English pink'.[48] One must generally handle colours in history with care, since definitions and terminologies about colours change over time.

I argue that the defining line between colours, varnishes, and inks at times can be negligible in *A Very Proper Treatise*. In our notion an ink or varnish are separate identities from colours to paint with. I argue that *A Very Proper Treatise* includes ink and varnish to the group of 'colours'. This means that the reading of *A Very Proper Treatise* can help us

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[47] Merrifield 1999 [1849], p. clxiv.
[48] Eastaugh 2008, p. 156.

understand how early modern people thought about colours. The text has two interesting cases that expand the idea of what 'colours' are. Today ink comes in two forms, the liquid ink is used as writing ink and the thicker ink used as printing ink.[49] Among the blacks in *A Very Proper Treatise* there is one black that has a dual nature; it can function as paint and as ink. The introduction to this recipe goes as follows: 'To make a blacke colour, or an ynke of a good perfection wherewith you may write with a penne or pensel'.[50] The recipe provided clearly gives instructions to make black ink. A similar procedure for the same purpose is found in *The Secrets* of Alessio Piemontese, where it is more clearly denominated as an ink: 'To make yncke, or a colour to wryte with, in a verye good perfection'.[51] In the recipe of *A Very Proper Treatise* there are instructions given for what to do when the substance is either too liquid or too dense. Furthermore, in the recipe there are some extra notes made. One of the paragraphs makes a sum of what is taught so far in the book, which is 'the waye how to temper goulde, sylver, and colours to lymme, or to write withal upon velym, parchement, or paper'.[52] This post scriptum to the recipe informs that all the colours can be used both to limn and to write. The line between colours and inks becomes small. In this part I have examined the possibility of ink belonging to the category of colours in *A Very Proper Treatise*; in what follows I will focus on the appurtenance of varnish to the notion of colour.

The same counts for varnishes. In *A Very Proper Treatise* 'vernix' is seen as a 'colouring […] that is more noble and excellent than all other colours'.[53] Today a varnish is not necessarily seen as a colourless colour. A varnish is a substance 'used for spreading over a surface in order to give [it] a hard, shining transparent coat'.[54] In the text a varnish is meant to make colour have 'better glosse or luster' and for the colour to 'become more brighter by the shining'. It is meant to finish of 'any colour or payntinges', it can be used 'upon velym, paper, tymber, stone, leade, copper, glasse etc'. A variant recipe for varnish proposes 'bengewyn & aquavite' which 'is very good to vernishe all thinges aswel paynted as not painted, for it maketh tables & coffers of wal nuttree & hebany to glinster, […] wooreks of iron, copper & tynne, gilted or not gilted'. The reason for using this varnish is because 'it maketh bright, preserveth, aydeth the colour & dryeth

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[49] OED.

[50] Anonymous 1573, sig. B3r.

[51] Piemontese 1558a, fol. 99r. Both recipes aim for the same procedure and final product, but they come from a different textual tradition.

[52] Anonymous 1573, sig. B3v.

[53] Anonymous 1573, sig. C1r.

[54] OED.

incontinent without taking any dust or fylth, you may make it cleane wtyth a lynnen cloth, or with wypping the worke with a foxe tayle the which is better'.[55] The recipe for varnish in *A Very Proper Treatise* is an all-purpose varnish that can be used to varnish paintings on various surfaces (panel, paper, etc.), but it can also to be used to varnish any kind of material (wood, stone, metal, etc.). The purpose of using a 'vernix' is the same as why one would use it today, which is to preserve the painting from external damaging factors and to make it shine. A varnish is a protective and beautifying layer, and it is seen as a 'kynde of colouring' in *A Very Proper Treatise*.

In *A Very Proper Treatise* colours are not only understood as pigments and paints, but also as ink and varnish. *A Very Proper Treatise* promotes an ample understanding of how colour can be broadly conceived, which is different from ours. The reading of *A Very Proper Treatise* provides the context for colour understanding in sixteenth-century England.

5. Textual transmission involving *A Very Proper Treatise*

A Very Proper Treatise, just like most early modern recipe books, is a compilation of existing knowledge, and is built out of a complex structure of layers. I argue in the next chapter that *A Very Proper Treatise* is a printer's compilation; one layer indicates that the body of text is that of a compiled manuscript, whereas another layer shows that the printer turned this compiled manuscript into a saleable product. The editorial and visual design, which are part of the printer's trademarks, I will leave for the following chapter.

Here I will focus on potential sources, which I mainly situate in the manuscript tradition. This is suggested by the title page of the first edition, which announces that it 'was never put into printe before this time', a formula used to indicate that previously this work circulated in manuscript. As Michael Gullick says, the recipes are older than the book itself, but none of the sources are named.[56] As far as I am aware no attempt has been made to articulate which sources *A Very Proper Treatise* might have borrowed from. My case about earlier or older sources involves several arguments. One of them is about the editorial layer that is the responsibility of the printer. This will be discussed in the

[55] All quotes concerning varnish come from Anonymous 1573, sigs. C1r-v.
[56] Gullick 1979, p. 1.

second chapter of Part II. Other elements may or may not be the work of the printer. A lot of these characteristics belong to recipe books in general and therefore I calculate them as part of this chapter that discusses *A Very Proper Treatise* as belonging to a textual tradition. In what follows I will demonstrate how one can see that we are dealing with a text originated out of multiple authorship. Straight authorship for recipe books would mean that a practitioner would write all recipes anew, based on his or her own experience. Multiple-authorship means active collaborations or numerous copying. It also means that this text has a history of selections and de-selections, involving several generations of texts and people, which made the text as we know it today. I argue that the knowledge or the recipes contained in *A Very Proper Treatise* have a textual origin, borrowed from various sources. Here I will demonstrate these various sources, and I will reconstruct and name potential sources, focussing on the textual sources.

That recipe books rely on other textual sources has been discussed thoroughly in Part I of this PhD dissertation. In the case of *A Very Proper Treatise* one can clearly see this at the level of individual recipes. An underlying or previously existing manuscript tradition can be gleaned from what I call its 'organized fragmentation': a single recipe has traces of several other recipes. Many recipes in *A Very Proper Treatise* are composed as one recipe, but they are actually a fusion of more recipes. Most of the colour recipes function in a double way. The first paragraph gives the recipe for the actual colour; the second incorporated recipe gives instructions how to make the 'false' and/or the 'sadder' of this colour. These are variants of the colour, which are used for shades and highlights. To obtain a 'sadder' of a colour the colour must be 'dimmed, that is to say, sadder, or darked'[57] with another colour. The description of 'sadder' appears in one of the prescriptions. The recipe 'to temper orpyment or masticot for a yellow' proposes to grind orpiment and massicot by itself with gum water. The massicot needs a bit of saffron in order to be livelier. The second paragraph proposes that the orpiment should be mixed with chalk, which would mean the colour becomes lighter. Then the recipe continues by proposing to make the colour 'sadder, or darked with oker de luke, or with browne of Spaine'.[58] This means that adding either oker de luke (a yellow oker) or brown of Spaine (an earth colour)[59] will make the yellow darker. *A Very Proper Treatise* borrows from other recipe books and works with practical knowledge, both on the level of the

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[57] Anonymous 1573, fol. 5r.
[58] Anonymous 1573, fol. 5r.
[59] Brown of Spain was described as an earth colour in Sir William Sanderson's work *Graphice*. Sanderson 1658, p. 82.

book as on the level of individual recipes. The practical knowledge of *A Very Proper Treatise* is composed out of other practical knowledge and has been represented in an organized way, hence why I named this 'organized fragmentation'.

The manuscript blueprint of *A Very Proper Treatise* probably did not stand the test of time. Gullick does not discuss or name sources that *A Very Proper Treatise* borrows from. Here I will use the opportunity to start the discussion of the problematic field of sources, which in the case of *A Very Proper Treatise* has been left undeveloped. First I will launch a hypothesis that needs further consideration. Richard Tottel printed *A Very Proper Treatise* for the first time in 1573, the same year as the death of his father-in-law Richard Grafton (1506/7–1573). Grafton was himself a printer and left a large part of his professional belongings to his son in law, a process begun before his death.[60] A possibility exists that Tottel received a recipe book about limning via Grafton. Another indication would link *A Very Proper Treatise* to Richard Grafton. Grafton became a freeman from the Grocers' Company in 1534.[61] At that time the Apothecaries fell under the Grocers' Company.[62] The link between the Apothecaries and *A Very Proper Treatise* is apparent in the apparatus of the book, where a list of ingredients one can buy at the 'Poticaries' is promoted. These are interesting links between Richard Tottel's network and Tottel's publication, but for the moment this remains speculative. Further research about this hypothesis may reveal whether Grafton might have been in possession of volume similar to *A Very Proper Treatise*.

Other than a hypothesis concerning the possible transmission of a manuscript, my research has established that a manuscript could serve as a potential prototype source that was used, directly or indirectly, to compile *A Very Proper Treatise*. During the seventeenth century the Grammar School of Coventry preserved a 1525 manuscript concerning *The art of making the gilded and painted letters which we see in old Mss.*[63] This manuscript was compiled by Robert Freelove (born in or before 1501 – dies after 1556).[64] The same manuscript was attributed the Latin title *Artem illuminandi libros* (The art of illuminating books) and was described as *Tractatu de decorandis & pingendis literis*

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[60] Ferguson 2015.
[61] Ferguson 2015.
[62] http://www.apothecaries.org/society/our-history
[63] Bernhard 1697, p. 1460.
[64] Robert Freelove must have been born in or before 1501 as he was at least 26 years old in 1527, the year in which he became a freeman to the Mercers of London. The admitted age to the Mercers was 26. Cf. Database Livery Company: http://www.liverycompanies.info/a-z-list-of-companies/livery-companies-database.html. The last notice that I was able to retrieve dates from the year 1556. This goes back to a marginal note to one of his autograph manuscripts where Freelove calculated how many years ago a certain fact happened. Cf. London, British Library, MS Sloane 3604, fol. 269v.

(Treatise about the decorating and painting of letters).[65] Currently no trace of this physical manuscript can be found, however, the text is not lost. In 1690 the text was copied by Humfrey Wanley. Wanley's copy was copied by Elizabeth Elstob in 1710. This current manuscript today is preserved at the Bodleian Library as MS Ballard 67 (art 4). Elstob's copy was copied at least three times by George Ballard, first in 1735, the year of meeting between Elstob and Ballard.[66] The other two are made around the middle of the eighteenth century. These copies are preserved at the University of Glasgow as MS Hunter 330, at the Society of Antiquaries as MS SAL/MS/6, and at the Bodleian Library as MS Douce 392.[67] Elstob entitled the work *To make such coloured and gilded letters, as are to be seen frequently in old MSS.* Ballard extended the title: *Directions how to make such coloured and gilded letters, as are to be seen frequently in old manuscripts.* The text of Robert Freelove survives in four copies made in the first half of the eighteenth century. As far as I am aware they have never been profoundly studied, nor been seen in relation to *A Very Proper Treatise.*

If *The art of making* corresponds to the four known copies of it, then the work is clearly a compilation in English. The book has forty-six recipes, of which the last twenty-two are from a work entitled *Temperantia colorum alumnata* (A manual for the tempering of colours).[68] This last group of recipes might have been a translation from Latin. *A Very Proper Treatise* contains forty-four recipes, of which thirteen have a significant textual overlap with *The art of making.* Of the part of *Temperantia colorum alumnata* there is only one recipe with a correspondence. The title of the first recipe of *The art of making* could be a valid description for the whole of the text: 'How thowe shalt temper colourys to gilde or to lymme with and to make thyne assyse'.[69] This title would indicate instructions valid for the whole of the book.[70] The focus of *The art of making* is the making of colours. Recipes not directly dealing with the making of a colour are collocated in the recipe book when they are useful. This means that drawing instructions and the making of size are one

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[65] Tanner recognises that Freelove's manuscript was written in English. Albrecht Haller reported that it was bound together to a herbal codex. Cf. Tanner 1748, p. 297; Haller 1771, p. 668.

[66] After the dead of her brother, with whom she did research together, Elizabeth Elstob perished from the academic scene. She opened a school in 1718, which failed, where after she disappeared into an anonymous life under the name Frances Smith. The antiquarian George Ballard contacted Elstob with a proposal to collaborate on a project about the Saxon language, which she refused, but a meeting took place on Ballard's request. Communications in letters held on to at least 1753. In 1748 Elstob entrusted her manuscripts into Ballard's hands. Elstob perished in 1756. See Chance 2005, pp. 15-16. The written communications between Elstob and Ballard are preserved in Oxford, Bodleian Library: MSS Ballard 43, 64, 67.

[67] Glasgow, University of Glasgow: MS Hunter 330; London, Society of Antiquaries: MS SAL/MS/6; and Oxford, Bodleian Library: MS Douce 392.

[68] This is a free translation, more litterally it would be like: 'the educated tempering of colours'.

[69] Oxford, Bodleian Library: MS Ballard 67, fol. 30r.

[70] I question whether it might be the incipit of the 1525 manuscript composed by Robert Freelove.

recipe. Also, the recipes for glair and for gum water appear only when needed, for instance gum water is discussed after the recipe for azure, where gum water is required. To compare the textual interdependency of the individual recipes I have created an exemplary synopsis of the first recipes of both texts, found below.

The OED says that a synopsis is a 'brief or condensed statement presenting a combined or general view of something; a table, or set of paragraphs or headings, so arranged as to exhibit all the parts or divisions of a subject or work at one view; a conspectus'.[71] A synopsis here is understood as a table to outline the material in order to look for concordances and differences. This method makes it possible to study the text in a systematic way. The initiating recipe of *The art of making* is a part of a larger recipe that includes the making of size, which in *A Very Proper Treatise* exists as an individual recipe. The part of interest in *The art of making* contains forty-nine words. The recipe of *A Very Proper Treatise* leaves out fourteen words and adds twenty-three new ones. The words in black in the recipe of *The art of making* indicate words left out. The words in black in the recipe of *A Very Proper Treatise* indicate the new or added words. Both recipes have thirty-four words in common. The most significant change in this case is the replacing of 'plummet' with 'pencell of blacke lead, or with a cole made sharpe at the poynte'. Later on in the recipe, one learns that the plummet is to be used with ink, meanwhile in *A Very Proper Treatise* the reader gets the information about the drawing advice immediately. The writing devices of both texts, 'plummet' and 'pencell of blacke lead', might just mean the same things. The OED points out that 'plummet' was used to refer to 'a stick of lead for writing, ruling lines, etc' or also 'a lead pencil'. Again *A Very Proper Treatise* offers descriptions and synonyms, keeping the same sense of the recipes. Not only textually, but also for matters of content there is a coherence between both texts. What I conclude here is that both works at least have a common textual source.

Synopsis	
The art of making (1525)	**A Very Proper Treatise (1573)**
How thowe shalt temper colourys to gilde or to lumme with and to make thyne assyse.	The order of drawing or tracing
Furste thow shalle	First thou shalte

[71] OED.

with a **Plummet**	with a **pencell of blacke lead,**
	or with a cole made sharpe at the
trace thie letter	**poynte**
and **also** thie Vinnetts,	trace **all** thy letters,
and thyne Imagerye	and **sett** thy vinetts **or flowers**,
Iffe thow make anie	and **then** thy imagery
Than shall thou with a small penne	yf *thy* **wilt** make any
Drawe all **that** thow portred	**And** then shalt thou with a small pen
wyth thie plummet with blacke Incke,	drawe al thy **hast** portred,
Than **shalle thowe** make assyse	then make **thy** sise
for thie golde	
on this **manner**	on this **wise**

The example above is representative in most cases of the textual overlap between both books. There is a significant correspondence in words and word order, with most changes appertaining to terminologies or technical instruments. When *The art of making* talks about books, a parchment surface is intended. *A Very Proper Treatise* changes this to 'your vellym, parchment or paper'.[72] This change explains an awareness of the use of multiple supports. *A Very Proper Treatise* proves to be a more user-friendly text, where there is attention to the basics of the art first, that is different recipes for size, glair and gum water. Then there is attention to a series of colours, and finally there are concluding recipes for varnish and additional advices, such as those on proportion. As such, both texts share a sense of order. In the case of *The art of making* the colours take the lead, all the other recipes are subordinate and this is well reflected in the order. In the case of *A Very Proper Treatise* the complete art of limning is considered and also this is reflected in the chronological arrangement and choice of the recipes.

Whether *A Very Proper Treatise* copies directly from *The art of making* is difficult to establish. The textual interdependency is significant enough to establish that both texts have at least common roots. Direct copying does not always mean that text is copied literally, as in fact, it often goes through phases of elaboration. However, in this case *A Very Proper Treatise* includes but a small selection of the recipes of *The art of making*. Further on the level of the individual recipes, there are quite some alterations. It is

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[72] Anonymous 1573, fol. 10v.

possible that the composer of *A Very Proper Treatise* uses *The art of making* as a direct source, but in that case, many more sources would have been used. Another option is that the composer took an existing manuscript and put it to print with the little elaboration.

The interest here is mainly to point out this relationship with a previously ignored source. I was not able to discover a direct connection between Richard Tottel, the printer of *A Very Proper Treatise*, and Robert Freelove, the writer the 1525 manuscript. However, multiple secondary connections could be found. A possible chain of contacts that link Robert Freelove to Richard Tottel goes via Stephan Vaughan, Thomas Cromwell and Richard Grafton. Freelove was linked to Stephen Vaughan (b. in or before 1502, d. 1549), a London mercer and administrator. Vaughan operated a mercantile network in the Low Countries of which he testifies in one of his writings: "after the exigencies of the same, so that I am never at rest. I am now at Barrugh [Bergen op Zoom], now at Bruce [Bruges], now at Gamut [Ghent], now here now there, so that not without exceeding trouble can I satisfy to all those to whom I minister (...) as to please all if it were possible".[73] On 5 September 1538, John Hutton died, and Vaughan was elected to be his successor. In his new position, Vaughan embodied the function of ambassador of King Henry VIII in the Netherlands and became the governor of the Merchant Adventurers. In the same year Vaughan became a diplomat in service of Sir Thomas Cromwell.[74] Vaughan mentioned Freelove in three of his letters to Thomas Cromwell, where he talks about Freelove with concern and suspicion.[75] Cromwell was the patron of Richard Grafton, father-in-law of Richard Tottel.[76] Unfortunately, because of lack of evidence, no credible hypothesis can be proffered here. Different people knew one another and they can be linked, but there is no guarantee that this chain provided the passing of manuscripts.

Sixteenth-century England must have had several sources stemming from the same rhizomic root. Earlier, Susan E. James concluded that *A Very Proper Treatise* 'may have been printed form a manuscript copy already in circulation, a fairly usual practice. This possibility is suggested by the handwritten notebook now in the V&A'. Her

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[73] London, British Library: MS Cotton Galba B.x, fol. 9r. This is most likely a state of account of his later years.
[74] Blanchard 2008.
[75] London, British Library: MS Cotton Galba B.x, fol. 57; Ref. SP 1/58 fol. 147; Ref. SP 1/76 fol. 10.
[76] Ferguson 2015.

argumentation is based on the 'variations in phrasing and some additions and subtractions of material' not belonging to *A Very Proper Treatise*, meaning that it might not be a direct copy, but an indirect copy or a copy of a copy.[77] James left her findings without reference. During my research I encountered a manuscript in the National Art Library (NAL), housed in the building of the V&A, which corresponds to the manuscript James studied: NAL 86.EE.69. My work is providing the missing reference and contextualizing one of its texts, *The way how to lyme,* as descendant from the same textual tradition as *The art of making* and *A Very Proper Treatise*. I argue that *The way how to lyme* of NAL 86.EE.69 does not look to *A Very Proper Treatise* but to a variant source of *The art of making*. Some similarities are striking; meanwhile others are simply too different to be directly copied from one another. For instance the recipe of how gold or silver is put on size, some entire phrases are missing or cancelled in *The way how to lyme*. Further, there is a different phrasing and also different instruments. *The art of making* prescribes a pencil or the tail of a squirrel to lay the size on the paper and for the burnishing it prescribed a dog or horse tooth. In the case of *The way how to lyme* a pencil made of calaber's pencil or taile of a squirrel was advised, and also the use of the tooth of an ox. The text of *The way how to lyme* proposes very specific instruments, that were most likely copied from elsewhere. A calaber is a Siberian squirrel, which is more specific than squirrel in general. Also the ox tooth is clearly coming from a different source. I conclude that Robert Freelove's compilation must have been one of many in circulation.

As mentioned earlier *The art of making* was not the only potential source used to compose *A Very Proper Treatise*, and also, I argued that *A Very Proper Treatise* borrows material from multiple sources and that *The art of making* is a potential candidate. Several of the techniques from *A Very Proper Treatise* are much older than the recipe book itself. The recipe to 'make letters of the colour of gould without gould' in fact has a long history. The manuscript compilation made by Jehan Le Begue in 1431, discussed earlier in the first chapter of Part I, contains several recipes to make gold without the use of actual gold. None of the recipes is a literal copy, but in one particular offers the same procedure. Both recipes use orpiment and fine crystal. These recipes were widespread and finding the exact recipe that *A Very Proper Treatise* copied is challenging as many manuscripts have perished and copies were not always literal.

As demonstrated above, *A Very Proper Treatise* is based on pre-existing art technological knowledge and texts. But the knowledge transmission did not stop at this

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[77] James 2009, pp. 293-294.

printed publication. *A Very Proper Treatise* was also used to copy from. The tendencies are similar to the transmission patterns in *A Very Proper Treatise* itself. Here I will illustrate with one concrete clear example. British Library manuscript Harley 1279 is a sixteenth-century heraldic manuscript. It contains coloured escutcheons, recipes, and information about books. The recipes are mixed medical and art technological. The art technological recipes seem to come from various sources and it contains one recipe that was presumably copied from *A Very Proper Treatise* or a textual variant. There are some small differences. Especially the second part of the recipe uses a more simplified vocabulary and fewer technicalities.

Synopsis	
A Very Proper Treatise (1573)	MS Harley 1279
To make letters of the colour of gould without gould.[78]	To make letters of the coloure of gold, without gold[79]
Take one once of Orpyment and one once of fine Christall,	Take an once of Orpimente, and an once of thyne Crystall,
and **beate** eche of them by him selfde to **poulder in a brazen morter.**	and **braye** them eche on by hym self,
Then **grynde** them wel together wyth **glayre upon a paynters stone**, then it ys **perfect** to write withall.	than **myngle** them together with the **whyte of Eggs** and wryte with hit.

Other recipes appearing in *A Very Proper Treatise* ended up in printed books with practical knowledge. Among the examples there is for instance the recipe for varnish, which was taken up in John Bate's *The Mysteries of Nature* (1634).[80] Bate presumably copied from *A Very Proper Treatise* because the text is quite loyal. There are certain formulas that are abbreviated, which facilitates the lecture of the recipe, such as 'To make a kynde of colouring called Vernix wherewhith you may vernishe golde' becomes 'To make colouring, called Vernix: to varnish gold' in Bate's work. The recipe is slightly shorter due to some of these simplified formulas. The same counts for the example of making white letters in a black field, a recipe that gets slightly simplified in *The Mysteries of Nature*, but

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[78] Anonymous 1573, sig. C2r.
[79] London, MS Harley 1279, fol. 62v.
[80] Bate 1634, pp. 130-131.

copying from *A Very Proper Treatise*. The above examples demonstrate that the recipes of *A Very Proper Treatise* can be found in both manuscripts and printed sources.

6. Conclusion

The original source laying at the heart of *A Very Proper Treatise* was intended for 'paynters and scriveners', however, the title page indicates another public, which are gentlemen and people with interests in the content. I also made an account of the textual narrative concerning the material culture in this book, with a focus on colours. And finally I discussed the textual transmission around the book title of *A Very Proper Treatise*. This can be linked to Part I of the thesis. The study of the text and recipes of *A Very Proper Treatise* shows a typical rhizome transmission pattern of practical knowledge. The theory of the rhizome is more profoundly studied in the second chapter of this PhD thesis, where it is demonstrated with the example of the German *Kunstbüchlein*. The case study of *A Very Proper Treatise* shows that this printed text originates from various sources. The transmission continues and the same text or variants are found in new texts, both in manuscript and print. There is however no guarantee that these new texts were copied directly from *A Very Proper Treatise*. And this is exactly how a rhizome grows: it can take origin from whatever point. The texts created after the first publication of *A Very Proper Treatise* may have in fact used one of the sources of *A Very Proper Treatise*.

Chapter 2.

Selling Secrets.

The Print Business as a Mediator in the Dissemination of Art Technological Knowledge

1.   Introduction to a book

As the previous chapter focused on *A Very Proper Treatise* as a literary product, it considered the text's potential sources, but the search for the writer or maker of the volume was left aside. In this chapter I will argue that *A Very Proper Treatise* is a printer's compilation, by which I mean that the printer Richard Tottel collected, edited, printed, and disseminated the book as we know it today. My conclusion is significantly different from that of Susan E. James who, in 2009, attributed the authorship of this book title to the Flemish miniature painter Levina Teerlinc.[1] This current study will draw attention away from the search for 'the' author, taking instead the printer as a mediator in bringing

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[1] James 2009, pp. 293-297.

knowledge together with an eye on the market, and the spread of this knowledge as a consequence.

The chapter will focus on the creation of a book as a commodity or marketable product. The difference in approach respect to the first chapter of Part II lies in the role of the printer in the genesis of the book. The first chapter of Part II puts the text of the book into the knowledge context and knowledge tradition, whereas this current chapter places the book within the book market. The source material of *A Very Proper Treatise* is relevant for this topic, because the printer possibly had access to the various sources, rather than a finished manuscript to publish. The editorial and visual design of the book will be examined. The economic side of early modern life will provide a contextualization of the making process and *raison d'être* of *A Very Proper Treatise* (1573).

2.   Tottel's trademark

Richard Tottel (born in or before 1528 – 1593) was the printer of the first edition of *A Very Proper Treatise* (1573). Tottel ran a successful printing business during his life. The volatile nature of private enterprise means that the continuing success of a business can often only be judged in hindsight. At the time itself, there was no guarantee that a business will keep on flourishing.[2] During his career, Tottel experienced some unsuccessful episodes, but the successes for which he is remembered today remain impressive. Tottel attempted to obtain three patents during his career. The three patents are for the exclusive right to print law books; for the printing of cosmographical books and tables; and for the domestic manufacture of paper.[3] Tottel was granted the first patent in 1554 during the reign of Edward VI, one year after he became a Londoner freeman, and later had the patent confirmed by both Mary I and Elizabeth I. The two following attempts to get patents for cosmographical books and tables and the making of paper failed. However, the successes to receive a patent for the printing of law books meant that, by 1577, Tottel had built a law-book monopoly, and the printing of law-books remained a constant throughout his career. I argue, following the thought of Christopher Knott, that Tottel had the capacity to understand the book market and

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[2] The many transformations the early printed book market went through are contextualised by Andrew Pettegree in *The Book in the Renaissance*, see Pettegree 2010.

[3] Greening 2015.

adapt his products accordingly.[4] Before Tottel's law-books appeared on the market, students and lawyers had to deal with Latin and French documents. Tottel provided the market with accurate translations and clear explanations.[5]

Paul Marquis argues that Tottel's successes were aided by his enterprising money-driven personality, rather than ideology-driven actions.[6] Very early in his career he was able to establish long-lasting networks, within groups that carried different religious orientations. Tottel, it would seem, was most likely a Catholic, and during the reign of Mary I he benefitted openly from his denominational position.[7] But in later periods, under Elizabeth I, he still managed to maintain his law print monopoly. He also had an awareness of necessary risk assessments regards publishing. The value of his patents increased during his lifetime, meaning that, according to Christopher Knott, he was 'less willing to risk capital on other types of publishing'.[8] This also means that non-law related publications or side publications must have been examined and studied before they were pursued. These thoughts will be further developed and can be confirmed through the study of his most famous publication, *Songs and Sonettes* (1557), taken alongside the publication of interest here, *A Very Proper Treatise* (1573).

Tottel married within the trade, a common practice for people in the early modern period. In 1559, he married Joan, daughter of printer-historian Richard Grafton, who was at the time not more than fourteen-years-old, meaning that Tottel was at least seventeen years older than his new bride. The connection between Tottel and Grafton must have started prior to this, because, at the time of the marriage, Tottel had already inherited Grafton's types and woodcuts, following the failure of Grafton's print business some years earlier.[9] Another connection was that Grafton was also a law-book printer.[10] The connection between Tottel and Grafton also extended to the printed titles. Tottel published three of Grafton's works, being 1) the first edition of Grafton's *Abridgement of the Chronicles of England* (1562); 2) the publication *A Chronicle at Large and Meere History of the Affayres of Englande* (1569); and, 3) the compilation *A Little Treatise Containing Many*

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[4] Knott 1996, p. 311.
[5] Marquis 2013, p. 14.
[6] Herman 2013, p. 112.
[7] Greening 2015.
[8] Greening 2015.
[9] Byrom explains that this fact applies to a group of printers that went out of business for the same reason: Richard Grafton, John Day, Edward Whitchurch, and William Copland. Byrom 1927-1928, pp. 203-204; Ferguson 2015.
[10] Warner 2013, p. 19.

Proper Tables (1571), a work with sixteen editions between 1571 and 1611.[11] In all three cases Grafton was recognized as author and person who gathered or collected the materials to make the work, and Tottel was recognized as the printer.[12] The remarkable success of this work might have given Tottel the inspiration to apply for a patent for the printing of 'tables' as mentioned above. Richard Grafton died in the year 1573, which is the exact same year Richard Tottel printed *A Very Proper Treatise.*

The year 1557 marked a remarkable period in Tottel's career, and was also the year the Stationer's Company was formalized, with Queen Mary I and King Philip granting a group of ninety-seven men a royal charter. Richard Tottel's name appeared as sixty-seventh. The Stationer's Company, or the 'Community of the mistery of art of Stationery of the City of London'[13] was founded to regulate and order England's growing book trade.[14]

Alongside these external developments, 1557 was an important year for Tottel's print business. As mentioned above, throughout most of his career Tottel dedicated much of his energy to the printing of law-books. In 1557 he printed nine law-books, but during his career the volume and intensity of non-legal output decreased. During 1557 Tottel printed several noteworthy works, including the *The Workes of Sir Thomas More Knyght.* Earlier Tottel had published two other works of More's works: *A Dialogue of Comfort against Tribulacion* (1553), and *Utopia* (1556), but *The Workes* is an impressive project that demonstrates Tottel's reach on the book market. The complete volume contains 1458 pages and was a very labour and capital-intensive product, only made possible through the joint investments of Tottel, John Cawood and John Walley. Further Tottel printed the *Litletons Tenures* of Sir Thomas Littleton, an elementary land-law book that was frequently reprinted. Finally, Tottel printed three works in metre: Lord Henry, Earl of Surrey's, translation of *Certain bokes of Virgiles Aeneis*; Thomas Tusser's *A Hundreth Good Pointes of Husbandrie*; and, finally, *Songes and Sonettes.*

Thomas Tusser's *A Hundreth Good Pointes of Husbandrie* became one of Tottel's bestsellers. Tottel reprinted this book about agricultural, domestic, and moral economy at

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[11] This work was subject to a title change with later printers, where *A Little Treatise* was changed into *A Brief Treatise.*

[12] In the case of the chronicle Tottel had the actual printing job done by Henry Denham. See title page of Richard Grafton, *A Chronicle at Large and Meere History of the Affayres of Englande* (London, Henry Denham, for Richarde Tottle, 1569).

[13] Kastan 2003, p. 98

[14] Kastan 2003, p. 98; Shaw 2007, p. 227. An organizational structure for the producing and selling of books was already well established by the end of the fourteenth century. This resulted in 1403 in the establishment of the Guild of Stationers, the direct predecessor of the Stationers' Company. See Bland 2010, p. 183; McKenzie 2002, p. 554.

least ten times and it was reprinted numerous times in the following century.[15] The first edition contains hundred stanzas of four verses each. From the 1573 fifth edition onwards, the book got significantly extended into *Five Hundreth Points of Good Husbandry*, but already the second edition contained extensions. The study of Tusser's work shows several points of interest for Tottel's printing business. Tusser's book contains several educational measures regarding book use. This attention towards the consumption of books is found also in *A Very Proper Treatise*. Tusser's work treats how to deal with books *A Very Proper Treatise* deals with how to embellish books. Both books pay attention to the position of books in the lives of people, whether for beginners or advanced book users. Another point that Tusser's *A Hundreth Good Pointes of Husbandrie* has in common with *A Very Proper Treatise* is the user-friendly aspect. From the third edition of *A Hundreth Good Pointes of Husbandrie* (1571) the work contained a table, which is an instrument at the end of the book that facilitates navigation through the book. The 1585 edition again is 'better ordered' and contains two tables. Also *A Very Proper Treatise* has a table to assist the reader. The table in Tusser's work did not appear in the first edition and this is significant. At the time of the first publication of Tusser's work, Tottel had already indexed some other publications. I see the later addition of a table as a printer's decision made for the benefit of the reader. Both publications demonstrate Tottel's concern as a printer-publisher. Tusser's work is a nice example of how Tottel was a trendsetter. Tusser's volume contained practical knowledge. In this early process of trends, Tottel helped to define new genres on the book market.

The other work relevant for the discussion of Tottel's work mechanisms is *Songes and Sonettes*, an early anthology of English poetry. It was not the first poetical miscellany in English. Earlier, between 1535 and 1539, *The Court of Venus* was published, but this did not obtain the popularity of *Songes and Sonettes*.[16] *Songes and Sonettes* might not have been the first, but it was certainly, as Peter Herman says, an 'unusual, if not entirely unprecedented, project'.[17] This work is also known as *Tottel's Miscellany*, and was a bestseller in its day and a long-lasting printing success.[18] Amanda Holton and Tom McFaul attribute an important position to this 'little book that kick-started the Golden

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[15] Other printers for *A Hundred Good Pointes of Husbandrie* in the sixteenth century were Willian Seres, Henrie Denham, Richard Yardley and Peter Short; printers in the seventeenth century of this work were Robert Waldegrave, Nicholas Okes, Thomas Purfoote, John Okes, Thomas Radcliss and Mary Daniel. One printer of the seventeenth century has been left only with the initials JM.
[16] Bowers and Keeran 2010, p. 163
[17] Herman 2013, p. 112.
[18] The use of *Tottel's Miscellany* goes back to Arber's edition of *Songes and Sonettes* of 1870. Cf. Arber 1870; Warner 2013, p. 1.

Age of English literature'.[19] The success of *Tottel's Miscellany* can be deduced from the amount of editions that appeared and the frequency of the following up of the various editions. Until the end of the sixteenth century *Songes and Sonettes* had (at least) eleven prints. To use the words of Paul Marquis: 'The popularity of Tottel's compilation is evident. It was reprinted twice in 1557, once between 1557 and 1559, twice in 1565, and once each in 1567, 1574, 1585, and 1587".[20] Until 1574 all editions were produced by Tottel himself. *Songes and Sonettes* has an interesting printing history, as the second edition followed extremely closely to the first edition. The first edition appeared on 5 June and the second edition on 31 July. The time between both editions is remarkably short. Another interesting point is that the second edition is much more substantial than the first. Generally, one can say that the different editions included different selections of lyrics and different structural arrangements, but the second edition is probably the most noted in this regard. *Tottel's Miscellany* is a publication of major importance.

The popularity of this book has not only been measured by its number of reprints. It has also been seen in the frequently cited Shakespearean play *The Merry Wives of Windsor*, printed in 1602. The character of Slender says: 'I had rather then forty shillings I had my booke of *Songs and Sonnets* heere'.[21] Marquis pointed out that George Puttenham, author of *The Arte of English Poesie* (1589) refers to *Tottel's Miscellany*.[22] As mentioned earlier also Tusser's work contained a reference, and many more were pointed out by Stephen Hamrick.[23] *Tottel's Miscellany* did not only trigger positive sentiments in its time. In a historical recontextualization, Peter Herman concludes that the collection's political and religious undertones may indicate that there were parties less friendly towards this publication.[24] *Tottel's Miscellany* was a well-known and well-spread anthology that generated responses across society.

The main importance of *Tottel's Miscellany* for this current study is first and foremost connected to Tottel's work methods and marketing strategies. The editing of sources is a characteristic and trademark of Tottel's print shop, which was not uncommon for printing shops at that time. A lot of work has been done on the editing process of *Tottel's Miscellany*, which originally appeared as *Songes and Sonettes* (1557). In his recent work, Paul Marquis argues that *Songes and Sonettes* was not really a miscellany, but

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[19] Holton and McFaul 2011.
[20] Marquis 2013, p. 13.
[21] Byrom 1927-1928, p. 232.
[22] Marquis 2012, p.13.
[23] Hamrick 2013, pp. 164-199.
[24] Herman 2013.

rather an anthology.[25] A miscellany would be a more arbitrary mixture than an anthology. An anthology is a more arranged and sequenced collection, such as the complex pattern of organization in *Songes and Sonettes*. Tottel made several changes in his *Songes and Sonettes*; he added titles to the poems and sonnets; he changed the text, for instance he rearranged parts of Wyatt's lines to obtain more regularity and smoothness in the metrical system. Marquis argues that this 'reshaping' makes part of Tottel's editorial design.[26]

This feature is certainly applicable to *A Very Proper Treatise* as well. Both works have a lot in common, as they are primarily collections of texts, whether lyrics or recipes. A collection is a gathering. The OED definition of a collection is 'a number of objects collected or gathered together, viewed as a whole; a group of things collected and arranged'.[27] The arranged aspect of a collection is especially applicable to *A Very Proper Treatise* as the prescribed procedures are presented as a series of coherent and subsequent actions in order to embellish books. But also the collection of *Songes and Sonettes* was a work of selection and ordering, which is exemplified or edited again in the second edition. *Songes and Sonettes* and *A Very Proper Treatise* are results of the same marketing strategy; they were the fruit of the same mind, Richard Tottel's. Laborious editing can therefore be said to have been one of Tottel's trademarks.

Another of Tottel's qualities was how he dealt with language; an argument I will divide into two parts: vernacular and eloquence. Scholarship always goes back to Tottel's intro to the reader in his *Songes and Sonettes* where he praises 'our tong' and makes his intention to print known: 'to publish, to the honor of the Englishe tong, and for the profit of the studious of Englishe eloquence'.[28]

Among all Tottel's publications, especially *Songes and Sonettes* was a work composed with eloquence, which was important for the native public.[29] As mentioned earlier, Tottel was the first to publish law books in the vernacular. Also Seneca's tragedy *Troas* (1559) was published in English, with the intention to promote the vernacular. This work was presented as 'a simple new yeres gift' to the new Queen Elizabeth I, so she would 'se[e] some part of excellent an author' in her own tong.[30] Christopher Warner concludes that this is not a sign of patriotism, but rather a claim that the English language is fit and apt

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[25] Hamrick 2013, p. 7.
[26] Terminology 'reshaping' borrowed from Hamrick 2013, p. 3; Marquis 2013.
[27] OED.
[28] Bates 2013, p. 40.
[29] Warner 2013, p. 160.
[30] Seneca 1559, sig. A3r.

in order to obtain 'peer-status with the other elite dominions of Catholic Christendom'.[31]

In fact Tottel's public was the native English book buyer. Tottel must have had a clear idea whom his buyers at his book shop were. Warner points out that a significant part would likely have been students and lawyers from the Inns of Court, which was located close to his print shop 'in Flete strete within temple Barre at the signe of the Hande & Starre'.[32] In general, this public would have been English speakers. Therefore, another quality of Tottel's work was the adapting of his publications to this circumstantial public.

Another point of interest in the discussion of Tottel's printed body of work concerns question of authorship and editorship. This current study will draw the attention away from the search for 'the' author and it sees the printer as the driving engine behind the creation and the mediator in the dissemination process. I leave room for an eventual editor or editors that Tottel took in service to do the concrete editing work, but the printer is the initial and final authority in the process of publishing. In fact, Warner convincingly argues in his book about the making of *Songes and Sonettes*, that law students were involved in this process.[33] Texts were often the product of multiple authorship or multiple collaborations. The joining in collaboration of more and external editors in the case of *Songes and Sonettes* would not be a surprise, considering the large size of the enterprise. The project of *A Very Proper Treatise* would be small enough to be handled by a single person. According to Tottel's own writing he often did the work himself. In one instance Richard Tottel declares to be the author of one of his publications. In his translation of Seneca's *Thyestes* (1560) Tottel looks back to the previously published work *Troas* (1559) and confesses that he was the 'author' before excusing himself for the bad work delivered, blaming the printer who 'corrupted all' and 'now flythe abroade as I it wrote'.[34] Tottel was the main figure behind his publications. He collected, selected, translated, ordered, adapted, and published, with and without the help of others.

A study of Tottel's working methods and strong points shapes one of the contexts within which to interpret *A Very Proper Treatise*. The context of the English native book market and marketing techniques of the printer Richard Tottel shows that the climate to produce a printer's compilation with art technological knowledge was

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[31] Warner 2013, p.4.
[32] Citation taken from: Anonymous 1573, fol. 1r; Warner 2013, p. 161.
[33] Warner 2013.
[34] Byrom 1927-1928, pp. 213-214.

favourable. Tottel published vernacular user-friendly books, which he adapted to his public through his specialized editorial interventions. *A Very Proper Treatise* lies in line with Tottel's printing interests. In the next part I will zoom in on Tottel's editorial design of *A Very Proper Treatise.*

3. Editorial design of a printer's compilation

A Very Proper Treatise is a compilation, a characteristic belonging to recipe books as demonstrated in Part I of this PhD dissertation. New recipe books are the result of a complex and often varied process of collecting, experimenting, and selecting recipes. There are several reasons to assume that *A Very Proper Treatise* was a printer's compilation, meaning that the work was composed and edited by its first printer, Richard Tottel. In the previous section I created the context of the publication of interest: *A Very Proper Treatise.* This current part will offer analytical argumentation based on textual research.

3.1 *...never put into printe before this time*

The title page of *A Very Proper Treatise* concludes with the words 'Cum Privilegio', Latin for 'with permission'. This indicates that the printer had the exclusive right or authority for printing.[35] This monopoly was usually valid for a specific book title or a specific niche and for a limited period of time.[36] The title of the first edition of 1573 announces that this book was 'never put into printe before this time', a clause not repeated in any of the following editions. I interpret this formula as an indicator that the text existed in manuscript form before Tottel printed it for the first time. Since it was not printed before, it therefore existed in manuscript circulation. Tottel might have been well aware of the use of this formula. Several early modern editions convey the same message on their title page. A good example is *The works of Geffray Chaucer newly printed, with dyvers works*

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[35] Prytherch 2005 [1988], p. 187.
[36] Carter and Barker 2004, p. 177; Kastan 2003, p. 94.

whiche were never in print before (1532), printed by Thomas Godfray. Critics have questioned the authenticity of this publication. Kathleen Forni follows philologist Walter William Skeat (1835–1912) in the disattribution of some works, meaning when a negative advice is given about the authorship of a certain work. In this case it is believed that certain works are not of the hand of Chauser, contrary to previous tendencies. Forni proposes that the printer published other medieval verse under Chauser's name because of his fame and marketability.[37] This precise book title kept the formula in a second edition in 1542, printed by the future father-in-law of Richard Tottel, Richard Grafton.

A title and content search on early modern printed books in EEBO shows further works with a similar message. Among them are recipes and sermons, for instance, which were presumably first available in manuscript before being published in print. A clear example is found in the title page of Andrew Boorde's *The Breviarie of Health*. The first edition of this recipe book was printed in 1547, although the edition of interest is that of 1587. The added subtitle to the 1587 edition goes as follows: 'Now newly corrected and amended, with some approved medicines that never were in print before this impression, & are aptly places in their proper chapters, by men skillfull in phisicke and chirurgerie'.[38] The principal message is that some medicines, or recipes, were added that were never in print before. These medicines seem to have been in existence, as they are 'approved'. As seen in Part I of this PhD dissertation, practical knowledge easily swops between oral and textual transmission. It is unexplained whether these 'approved medicines' were written down in manuscript, but it is not unreasonable to presume they were.[39] Also, the third edition of Matthew Norwood's *The Seaman's Companion* (1678), roughly a century later, adds a new part 'never in print before'.[40] In this case instructions concerning navigation were acquired aboard and written down in manuscript. Later, once ashore, the navigator's writings were put into print.[41] What is important here is that the title page announces that existing work was published for the first time and sold on the book market.

The presumed date of creation of the text of *A Very Proper Treatise* is 1573, which is confirmed in the final paragraph of the text. The concluding words, intending either

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[37] Forni 2001, pp. 26-27.
[38] Boorde 1587, sig. A1.
[39] In other books the same formulation appears also in different parts, such as in the foreword for the reader, see Record 1582; or such as individual parts that were never in print before, such as in Foxe 1583.
[40] Titlepage of Norwood 1678.
[41] Logically, there were no actively working printing presses aboard. Writings made aboard were reworked in order to be put to print once ashore. Writing pirates or buccaneers are the topic of Daniel Lange's PhD dissertation, a TEEME fellow of the second cohort.

compilation or printing, are: 'Finished anno domini 1573'. The majority of the editions, being the editions of 1573, 1581, 1583, and 1596, recognize the 1573 edition as a crucial year for *A Very Proper Treatise*. Two editions are different in this respect. The editions of the years 1588 and 1605 do not refer to the 1573 edition in the concluding line of the work, but give respectively 1588 and 1605 as the year of publication.

Edition of *A Very Proper Treatise*	Closing words of the text
1st edition (1573)	Finished An domini 1573
2nd edition (1581)	Finished Anno Domini 1573
3rd edition (1583)	Finished Anno Dom. 1573
4th edition (1588)	Finished, Anno Dom. 1588
5th edition (1596)	Finished Anno Dom. 1573
6th edition (1605)	Finished Anno Dom. 1605

It looks like the editions which conclude with 1573, recognize that that the text was produced in this year; meanwhile the other editions, that of 1588 and 1605, refer to the year of printing of the edition rather than the year in which the text was created. These differences could be simply due to the actual printer who carried out the manual task, and took certain information, as the concluding date in the work, for granted. This closing formula does not guarantee that the work comes from manuscript tradition, but it also does not exclude it.

3.2   Concept of two layers

Throughout the work there is a strong sense of organization, coherence, and clarity, which is also reflected on the level of the order of the recipes and also in the structure of the book. The title gives an overview and serves as a marketing tool to awaken the interest of the potential buyer. However, there are several inconsistencies in the text. I argue that these internal disparities are the result of a specific editorial process initiated by the printer Richard Tottel. In order to understand the various phases of this editorial process better, I have divided the text into two layers. The co-existence of the two layers is visually represented in the scheme below. The scheme shows the three main parts of

the text: the title, the body and the index. I have subdivided these three parts into relevant categories. The first layer is left colourless and represents text provided from an existing source or sources that has been modified to make it publishable. The grey parts may or may not be coming from another text, but they certainly come from a different source altogether. These grey zones are textual additions consciously incorporated by Richard Tottel. I found textual evidence to sustain that the body and the indexes are transformed into a coherent part. More concrete information about this will follow below. The title and marginal information are the work of the printer. He made these additions in a purposeful way, in order to enlarge and specify interests and public. Inconsistencies are present between either the title and the body, or the body and the index and will be explained in what follows.

Title	Title, summary of subjects, intended public, use and concrete printing details
Body	Sequence of recipes
	Printed marginal notes
	Conclusion: summary of actions, intended public
Index	Names of ingredients
	Chronological table of content

3.3   The allocated heraldic application

What is a characteristic of the grey sections in the above standing column is that they provide heraldic information. The title introduces this work as painterly knowledge with a potential heraldic application. This heraldic layer one meets in the body of the text, but only in the marginal notes. The heraldic layer is isolated from the rest of the text and does not interact directly with the recipes. In fact, a reader who does not concentrate on the title page and omits the reading of the printed marginal notes, will not perceive that this knowledge could serve heraldic purposes.

The title of *A Very Proper Treatise* promises to teach 'the order in drawing & tracing of [...] armes', which is a work for 'persones as doe delite in limming, painting or in tricking of armes in their right colors'. And even though the booklet is concerned with the art of limning in general rather than with heraldic painting, the title sells the book as a work 'very mete to be adioined to the bookes of armes', as discussed in the first chapter

of Part II where I concluded that a group of works from Richard Tottel's press form the context to understand this clause. Richard Tottel published other books about 'armes' and heraldry, as mentioned earlier.[42]

However, the printer also intentionally added suggestions in the marginal section about which colours could be used for the painting of arms. In total nine of the marginal notes have indications for heraldry painting. These marginal notes point out which colours can be used for the colouring of arms, being: azure or light blue, gold yellow, vermilion red, emerald green, pure white, sable or black, purple or violet, sanguine or murrey colour, and orange or tawny. It has to be said that there is no internal reference to armoury in an explicit way in the text itself, with information and references to arms and heraldry being reduced to the title and the marginal notes only. I argue that these areas are those of the editor and printer, because the text could remain unchanged. The title and the marginal notes are simply additions that complement the original text.

There are numerous reasons why these additions can be attributed to Richard Tottel. The marginal notes connect the text to the title, which promises to teach the art of limning to people with heraldic interests. Without the marginal notes, there is no explicit reference in the book to heraldry; a consumer would have to rely on previously built knowledge in order to make the connection between making a black colour and using sable in heraldry, the correct word for black in arms. By reaching out to those with an interest in both heraldry and limning, Tottel enlarges his public. Lastly, he also promotes previously made work about heraldry through this book title. I conclude that the heraldic layer in *A Very Proper Treatise* is an additional layer to the original manuscript, which is the fruit of the selling techniques of the printer Richard Tottel.

3.4   Internal editing process

The idea of order, structure and friendly navigation items are already signs of editing, but the body of the text has other elements that display the editing process. My argument is that there is a difference between the body of the text and the indexes in this regard. I will illustrate this using two examples. The first index provides the names of colours and ingredients that one can acquire at the 'Poticaries' or apothecary. This list purports to be complete and represent exactly those ingredients used in the recipes, however, I noticed

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[42] Legh 1562; Bossewell 1572.

that not all ingredients of the list return in the body of text. I argue that this inequality is a sign of editing. The following ingredients appear only in the index, but cannot be found in the body of the text: resin, alabaster, cow milk, ewe milk, rue juice, red nettle juice, scraped cheese, lye (alkalized water). All of the ingredients have a potential art technological purpose and application in the medieval and early modern setting. Examining the vocabulary of the missing recipes one can easily see that older knowledge appears to have been incorporated at the stage before editing. By 'older knowledge', I mean knowledge that has been in circulation for a longer time, possibly a very long time. I will use the instance of rue juice to illustrate this.

The juice of rue was used to make a green colour and green ink, as appears in the MS of Jehan Le Begue, the Padua MS, and Ruscelli's *Secrets* (1565).[43] The OED says that rue is a southern European plant species 'which has yellow flowers and bitter, strongly scented feathery leaves, and was formerly much used for medicinal purposes'. Spelling was not a fixed feature in the early modern period, but among the OED statistics, the precise writing of 'rewe' appears to be a common variant spelling from 1425 until 1539. From 1570 the spelling 'rew' becomes the common spelling. Richard Tottel used the spelling 'rewe' in the first two editions coming from his printing press.[44] All the subsequent editions were derived from Thomas Purfootes' printing press. Purfoote copies the Tottel edition and includes in all cases the ingredients without recipes. In all the Purfoote editions, from 1583 until 1605, the spelling variant 'rue' was used, which appears to be a more constant spelling throughout the history of the English language.

Most ingredients of the list are somehow, when possible, grouped per recipe. For instance, the recipe that prescribes how to make a 'thinne sise', proposes the following:

> 'The like sise maye you make [...] with the milke of grene figges alone, or with the milke of spourge, or of wartwede, or with the yellowe milke of grene salendine, or with the iuce of garlike or of onyon heades or with the water and grease of snailes.'

A selection of these ingredients, from the milk of green figs until the onion heads, appear exactly in this sequence listed in the index, high up in the third column. I suggest that the grouped ingredients might belong to the same missing recipe. Since there are four groups of ingredients it is possible that four recipes or part of recipes were initially taken up and subsequently removed, without adapting the index.

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[43] Merrifield 1999 [1849], pp. 66, 80, 286, 650, 666, 684; Piemontese 1558b, fol. 95r.
[44] This could be an argument that Tottel used an older source.

The second example I will use to illustrate an internal editing process comes from the second index, which provides the recipe titles with a reference to the folio number. In most cases the titles are the same or very similar to the titles of the actual recipes. But in a few instances there are some alterations worth mentioning. The index indicates principally two different ways of making 'a grounde or a syse'. The actual recipes naturally prescribe how to make size, but the titles are more complex, they are longer and introduce a more varied vocabulary. The most exemplary instances are represented in a table below in order to schematize the material.

Synopsis	
Body of *A Very Proper Treatise* (1573)	**Index of *A Very Proper Treatise* (1573)**
To make a dooble syse or bottome to laye or settle silver or goulde upon called an embossed ground	To make a grounde or a syse to lay golde or silver upon
To make a thinne sise or bottome to laye or settle silver or golde upon called a single grounde	To make syses other maner of wayes

I see two possibilities for these differences. A) The recipes are the original text and the index is altered, or, B) the other way round: the index keeps the more original recipe titles, which in the body of the text were adapted. I opt for the second possibility. The index contains a more simplified version, which is a reality often appertaining to all-purpose recipe books. I have seen many medical recipe books giving solutions to cure the plague, followed by many recipes 'for the same' and 'in another way'. Also, *A Very Proper Treatise* intends to teach an art, containing an educational programme. Thus, the prime attention of the internal editing process was addressed at the text rather than the index, in order to pursue its scope, which is conveying information about limning in an accessible way for its public.

A Very Proper Treatise was printed for the first time in 1573. This can be confirmed both through bibliographic research and through the studying of the title page. Most likely the printer used an existing manuscript as a departure point and he might have selected and added material from other sources, both manuscript and printed. After bringing the material together in a logical order, other phases of editing took place to harmonize the various parts. In the next part the visual layout will be examined.

4. Visual design of practical knowledge: the title page as a visual marketing tool

A Very Proper Treatise was a tiny booklet that presumably did not cost a large sum. But could this booklet be denominated as 'cheap print'? In this part I will illustrate how the history of the visual aspect tells more about the marketing of *A Very Proper Treatise*. The topic of examination is the title page, the type and the paper quality, all of which are part of the text's material context.

The expression 'Don't judge the book by its cover' is a metaphorical expression that is used to warn against prejudging the intrinsic value of something based on its appearance alone. Isolating this from its metaphorical use, it reveals something about the book market today, where the cover is an important marketing tool. In fact, it is the first thing a potential buyer or user sees when he or she picks up the book or, alternatively, when he or she checks the book title on Amazon. In sixteenth century England books were sold unbound. The first thing a potential buyer would see was the title page and thus the title page was the prime instrument that intended to seduce a potential buyer.

The first edition of *A Very Proper Treatise* has a very elegant title page (See figure II.1.1). The text of the title page appears in three text blocks, of shrinking size. The title is the biggest text block, followed by the printing information and finally concluded with a brief notice about the rights to publish. Two letter types are used, the beginning of each text block is in roman, followed by black letter. The amount of roman type used decreases, like the text blocks. The first text block contains the title and uses three lines in roman, of which the first is bigger than the following two. The printing information uses two roman lines and three black letter lines. Finally the printing rights are explained in a single line and uses roman. The number of lines in roman are decreasingly three, two and one on the title page. The title is long and is presented in an inverted triangle. To make the triangle more pointy the graphic feature '(:)' is added after the last word. This addition makes the two sloping lines meet, which forms the downward triangle. This elegant use of various types and the concept of decreasing repetition makes the title page of *A Very Proper Treatise* clear and attractive.

The visual outlook of a title page is the first element a buyer meets when encountering a physical copy. The second stage is the reading of the information. Tottel managed to create a visual shape that guides the eye from the top to the bottom of the

page. The content of the title has been discussed in the first chapter of Part II, but it is still relevant here. The title gives a brief overview of the topics of the recipes. Furthermore, it contextualizes the book, as belonging to a group of books treating heraldry. Finally, it gives a word about the audience. All these features have their right place on the title page. In other books this same information could appear in an introductory letter for instance, but *A Very Proper Treatise* is a concise book without introduction, preface or dedication. All the necessary information is kept brief and is communicated on the title page: that is the topic of the book, the use of the book, its context and its public.

The title page is the work of the printer, both in outlook and content. As discussed in the previous chapter, *A Very Proper Treatise* is an anonymous compilation drawn from various other sources. The title page is specific to a printed book, as most recipe books in manuscript culture remained title-less, and this precise title reflects the reality inside and around the book. This means that the title is very specific to this particular publication. Richard Tottel designed a title and title page suitable for the book he printed.

Here I will return to the public of *A Very Proper Treatise*. Most likely the words 'gentlemenne' and 'persones as doe delite in limming' are Tottel's words of choice to indicate the public he thought fit for this book. The connection between gentlemen and painting was already made by Castiglione in his *Courtier* and finds a happy combiner in *A Very Proper Treatise*. The precise words might have been borrowed from an older English volume that connects heraldry to gentlemen. The first publication of *The Book of Saint Albans* (1486) [45] contains a similar structure to talk about the public: 'In so moche that gentylmen and honeste persones have grete delyte in hawkynge'.[46] Tottel was well aware of this publication as one of the editions of 1556 he had had made by printer William Coplande for his own print shop. He might have taken the example of *The Book of Saint Albans* in approaching this public. The central words to describe the public in both

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[45] The ESTC reports sixteen editions, spread over the years 1486, 1496, 1618, 1530, 1533, 1547 (two editions), 1556 (two editions), 1566, 1568, 1590, 1595, 1596, 1600, and 1624. Cf. ESTC. The author of this book has been prudently and cautiously identified as Juliana Barnes/Berners, which comes from the printed text itself: 'Explicit Dam Julyans Barnes in her boke of huntyng'. According to the account of John Bale, she must have lived around 1460. According to a marginal note of William Burton (1575–1645) in the 1486 copy at the Cambridge University Library, the author is identified as 'Lady Julian Berners', daughter of Sir James Berners, prioress of Sopwell near St. Albans. Two manuscripts respond to this reality, Lambeth Palace MS 491 and Bodleian MS Rawl. Poet, 143, but this might of course be taken from the printed text. The same counts for Bale's and Burton's information. Prudence and caution are necessary, but this is certainly practical knowledge that travelled in the same way as I have described in the second chapter of Part I of this PhD thesis. Cf. Boffey 2004.

[46] Berners 1486, fol. Ai r.

volumes are the same. The public would be 'gentlemen' and 'persons' that take 'delight' in something, either hawking or limning.

Another dimension of the consideration concerning gentlemen is pointed out by Wendy Wall, who saw that poets sell their work as 'gentlemanly pastime' in order to acquire social and literary legitimation.[47] Painting belonged to the realm of gentlemen's activity and the elevated status of gentlemen came to aid the status of the book. I argue that the title page is entirely the fruit of the work of Richard Tottel. Tottel compiled a book and adapted the title page according to the content of the book and to an idealized idea of the public. Here lies one of the marketing techniques of Richard Tottel. He uses the title page in a suitable way to attract customers and form a proper introduction to the work.

5.   Cheap Print?

5.1   Popular print and preconceptions concerning typographical choices

Richard Tottel used three typefaces for the publication of *A Very Proper Treatise*. The main one being black letter and there are minor sections printed in roman and italic. All three typefaces have their proper history and reception history, but here attention will be focused on the black letter type and its reception.[48] Black letter was the very first movable type used in Europe. Early typefaces such as black letter sought to imitate handwriting and calligraphy.[49] The use of typeface, which appeared first in black letter, was developed by Johannes Gutenberg (between 1394/1399-1468) in the 1440's and spread through Germany, France, Hungary, Poland, Portugal, Spain, Italy, and England.[50] In the Netherlands, the early printing also occurred in black letter.[51] The term 'black letter' was coined in the seventeenth century, being in vogue since at least 1639. In *A large declaration concerning the late tumults in Scotland* (1639), written by Walter Balcanquhall (ca. 1586–1645), there is a reference that the act of parliament of 1584 was 'printed of

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[47] Wall 1993, p. 56.
[48] I use the spelling 'black letter' (cfr. OED) rather than 'blackletter' or 'black-letter', unless in quotes.
[49] Steinberg 1996, p. 10; Updike 1937 [1922], p. 6.
[50] Bringhurst 2008, pp. 103; 266-268.
[51] McKerrow 1994 [1927], p. 292.

old in black letter'.[52]

The black letter typeface is described in the OED as 'a heavy, ornate, early printing type, as contrasted with the later, lighter 'Roman' type'.[53] Synonyms indicating black letter are Gothic and Old English. Typographer Robert Bringhurst gives the following definition for black letter: 'Blackletter is to typography what Gothic is to architecture: a general name for a wide variety of forms that stem predominantly from the north of Europe. Like Gothic buildings, blackletter types can be massive or light. They are often tall and pointed, but sometimes round instead.[54]

There is a healthy scholarly debate surrounding the significance of black letter during the seventeenth century. Earlier in this debate black letter gained a notorious status. In 1919, Hyder E. Rollins published an article on the black letter broadside ballad where he proffered two unrelated conclusions.[55] He stated that the popularity of the black letter ballad was very stable,[56] and he also stated that common people loved ballads and that great poets ridiculed ballads.[57] Ronald McKerrow observed that with the reign of Elizabeth I the use of black letter stopped being used in Latin works, plays and 'higher kinds' of English verse, but for popular prose, ballads and law books it continued to be used.[58] More recently, newer voices have gained ground in the discussion. In his article *Typographic Nostalgia* (2006) Zachary Lesser attributes a nostalgic function to the seventeenth century black letter, leaving behind discussions about lower and higher readership.[59] Generally, during the twentieth century and even beyond, black letter was seen in connection with a popular readership.

A decisive publication from Charles C. Mish declares typographical distinctions for seventeenth century fiction and assorted reader groups. The upper class would read sentimental and heroic romances in folio editions with exclusively the roman typeface. The middle class would read chivalric romances in quarto editions with exclusively the black letter typeface. The black letter would be an anachronism by this time and therefore it would indicate conservatism, insensitivity to aesthetics and cultural

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[52] Balcanquhall 1639.
[53] OED
[54] The categories of black letter include *bastarda*, *fraktur*, *quadrata*, *rotunda* and *textura*. See Bringhurst 2008, p. 323. To distinguish the different styles within black letter one has to observe the letter 'o'. In the case of *textura*, the 'o' has a hexagonal shape. The *fraktur* black letter 'o' is normally flat on the left side and curved on the right. The *bastarda* 'o' is pointed at the top and bottom and is belled at both sides. Finally, the *rotunda* 'o' is essentially oval or round. See Bringhurst 2008, p. 268.
[55] Rollins 1919, pp. 258-339.
[56] Rollins 1919, p. 260.
[57] Rollins 1919, p. 291.
[58] McKerrow 1994 [1927], p. 297.
[59] Lesser 2006, p. 116.

retardation of the middle class audience.[60] However, it was Mish's article that explicitly used the black letter as a social discriminant.

This theory has been widely and uncritically accepted, and still garners plenty of followers. In his work on English prose fiction Paul Salzman follows Mish in the diversification of readers into classes based on the use of black letter typeface.[61] Thomas Keith was followed by David Cressy in his article on literacy in context where he levels readers into different groups.[62] The idea of identifying black letter prints with popular readers can also be found in Barry Reay's writing on popular culture.[63] These discussions generally treat a period in which the roman typeface was commonly used in England, which is the seventeenth century. Some scholarly editions use the social discriminant beyond the limits of the seventeenth century. In the introduction to *The Cambridge History of the Book in Britain*, John Barnard associates use of black letter typeface with a popular audience, as would be the case for Tusser's *A Hundreth Goode Pointes of Husbandrie* (1557), which was reprinted until well into the eighteenth century.[64] The stigmatization of the black letter as sign of popular readership is product of historiography.

This interpretation of black letter might have implications for the interpretation of the visual outlook of *A Very Proper Treatise* and other recipe books. I argue that the use of black letter was a purposeful decision of the printer because of the general accessibility of the work. Black letter was a recognizable and commonly used type in England. As mentioned before it imitates hand written texts and invokes nostalgic feelings towards handwritten books. Since so many practical texts are in black letter I explored the idea that the use of black letter contributes to the idea that certain knowledge is ancient through association with ancient things. However, as it turns out, many law texts were also printed in black letter, a trend stimulated by Tottel himself. Law texts are not categorized as popular texts, because it is a genre used by a specific niche of specialist practitioners. What ancient practical knowledge and the law have in common is an authoritative character, which is visualized in print through black letter. The public of these texts are, then, not by definition 'popular', or poorly educated but, rather, learned and literate. The English sixteenth century black letter was a widely accessible type that reminded the cultivated users of handwriting in manuscripts. *A Very Proper Treatise* would fit precisely into this category.

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[60] Mish 1953, pp. 627-630.
[61] Salzman 1986, pp. 265-267.
[62] Cressy 1993, pp. 305-319 (especially 312).
[63] Reay 1998, pp. 56-57.
[64] Barnard and McKenzie 2008, pp. 4-5.

5.2   A paper story

This PhD dissertation does not in any way pretend to write the history of papermaking, paper use, and paper conservation. However, it does consider the subject because the material quality of the paper used by the printers can provide another context to understand this book and its history better. The study of the signatures of the book title, which remains unchanged for all of the editions, tells that four sheets of paper were used to make a single book.[65] Studying the materiality of paper can actually tell a lot about the printer's decisions about the market position of a book and its various editions. I would make an initial distinction between two groups of editions. The first five editions are somehow connected when it comes to quality and the sixth and last editions stands somehow separate. The paper used to print *A Very Proper Treatise* is generally not the best quality on the market. The distinction between both groups is that in the first group, failures and poor quality are not directly visible. Once a doubtful page is held against a light source, irregularities may occur. In the Library of Congress, I had the chance to work with a light sheet and could draw several conclusions on the making of *A Very Proper Treatise*, as illustrated below.

The first edition of 1573 at the Library of Congress[66] appears to be a quite normal copy from the point of view of the paper. However, keeping some pages with the lightest irregularities against the light sheet brought to light two different patterns in the paper, as seen in the pictures below. Page ten has an irregular spread of the pulp towards the outer margin and page eleven has some irregular thinner spots spread over the surface of the page. This indicates that potentially the whole of the first edition, which appears to have the best paper among all the editions, might have this slightly inferior quality of paper over the whole line.

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[65] Signatures: A-C⁴. This means that *A Very Proper Treatise* contains three paper sheets that are all folded twice in order to make three gatherings of four leaves each. For calculations see Bowers 1994 [1949], p. 201.
[66] Appendix 2, no. 12.
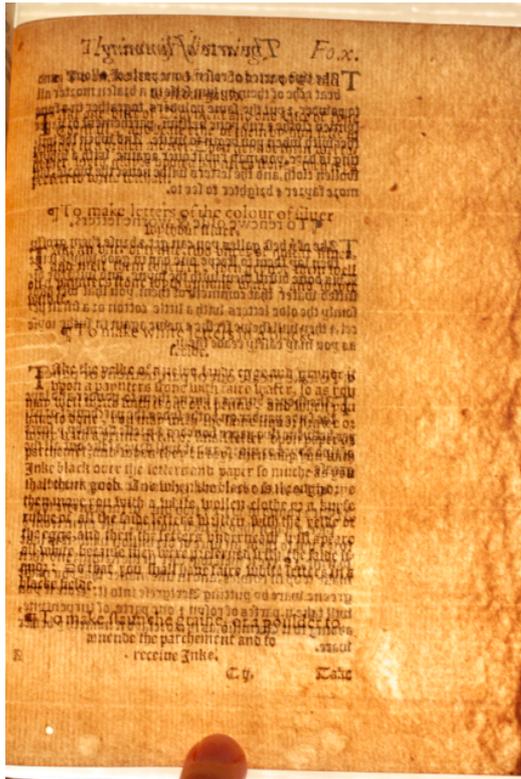
Figure II.2.2: Washington, Library of Congress, (Appendix 2, no. 12.) fol. 10 of *A Very Proper Treatise* (1573) held against a light sheet.
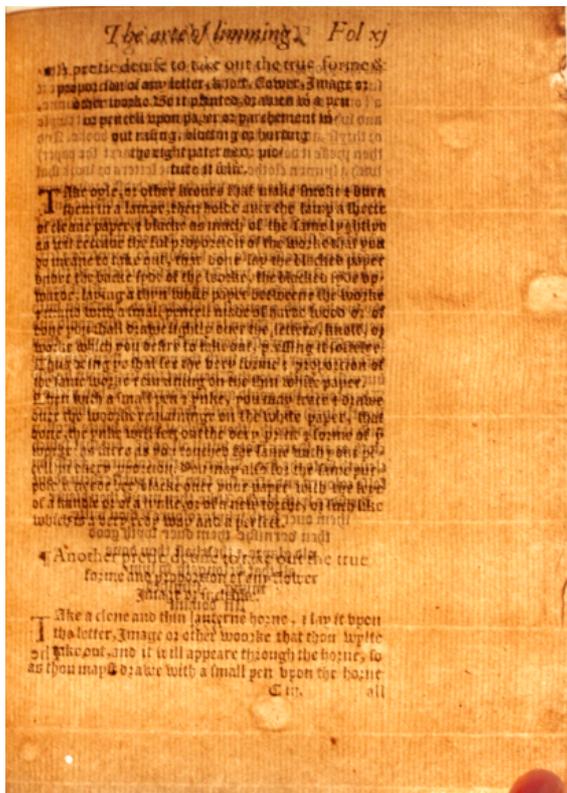

Figure II.2.3: Washington, Library of Congress, (Appendix 2, no. 12.) fol. 11 of *A Very Proper Treatise* (1573) held against a light sheet.

The sixth edition from 1605 tells a different story from the point of view of the paper. I will use the 1605 edition at the Library of Congress as an example.[67] The Library of Congress copy has several wrinkles and other irregularities in the paper, as seen in the pictures below. The wrinkles were there before the printing process started because the ink sits on top of the wrinkles. When shown against light, one can see that in some parts the surface is more rigid and thick. In this particular case, something must have gone wrong during the papermaking. It looks like the pulp was not properly amalgamated, containing a piece of paper that did not turn into pulp. This defect is not visible in the picture II.2.6 because that is the normal picture as seen with the eye. The picture II.2.7 is the one taken with a light sheet, enabling us to see the structure of the paper. In fact, the darker lines are the wrinkles that lie underneath the printing ink. In the picture below three circles appear. These circles evidence the instances of ink being printed on top of the wrinkles in the paper. In all cases the letters have a little line spared of ink. This inkless space exists because of the paper wrinkles. Explained in more simplified terms one can say that the wrinkle exists out of two layers of paper, an upper layer and a lower layer. These layers meet when passed in the printing press, the moment when they receive the ink. Once the paper comes out of the press, the two layers of paper open up again. This provokes the separation of the ink and shows a little line in the letters that does not have ink. It is the space between the two layers of the paper in a wrinkle.

At the right side in picture II.2.5, next to the wrinkles of the paper, occurs a shadow or darker area. This is a piece of paper that did not completely turn into pulp (the zone of interest is marked with a rectangle). The piece of paper is more recognizable within the zone at the lower right of the piece and is clearly distinguished by an occasionally folded border. Towards the other end of the piece, these wrinkles are less visible. Both the wrinkles and the unprocessed paper give an idea of the paper quality that was used for the last edition of *A Very Proper Treatise*. As mentioned above, the visual style of the sixth edition is different from the previous editions; the same counts for the paper quality of the last or sixth edition. This is why the edition of 1605, presumably the only seventeenth century edition, can be seen as the edition with most differences from the other editions.

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[67] Appendix 2, no. 37.
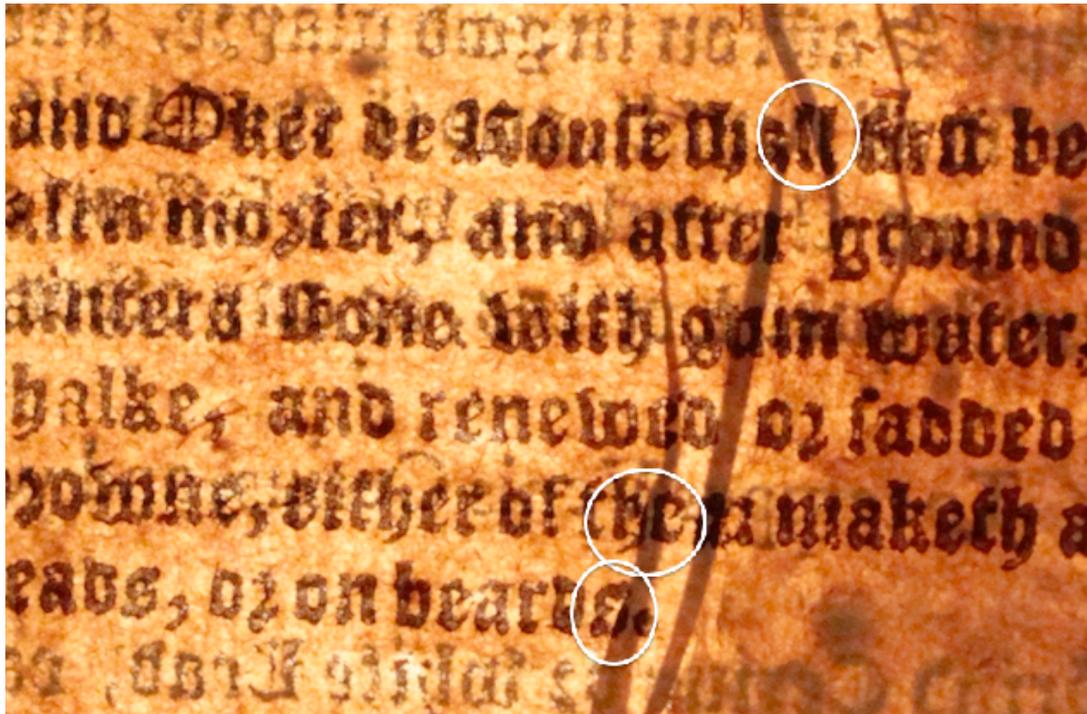
Figure II.2.4: Washington, Library of Congress, detail of fol. 9 of *A Proper Treatise* (1605) held against a light sheet, close up of wrinkles with above standing ink, evidenced by the circles. (Appendix 2, no. 37.)
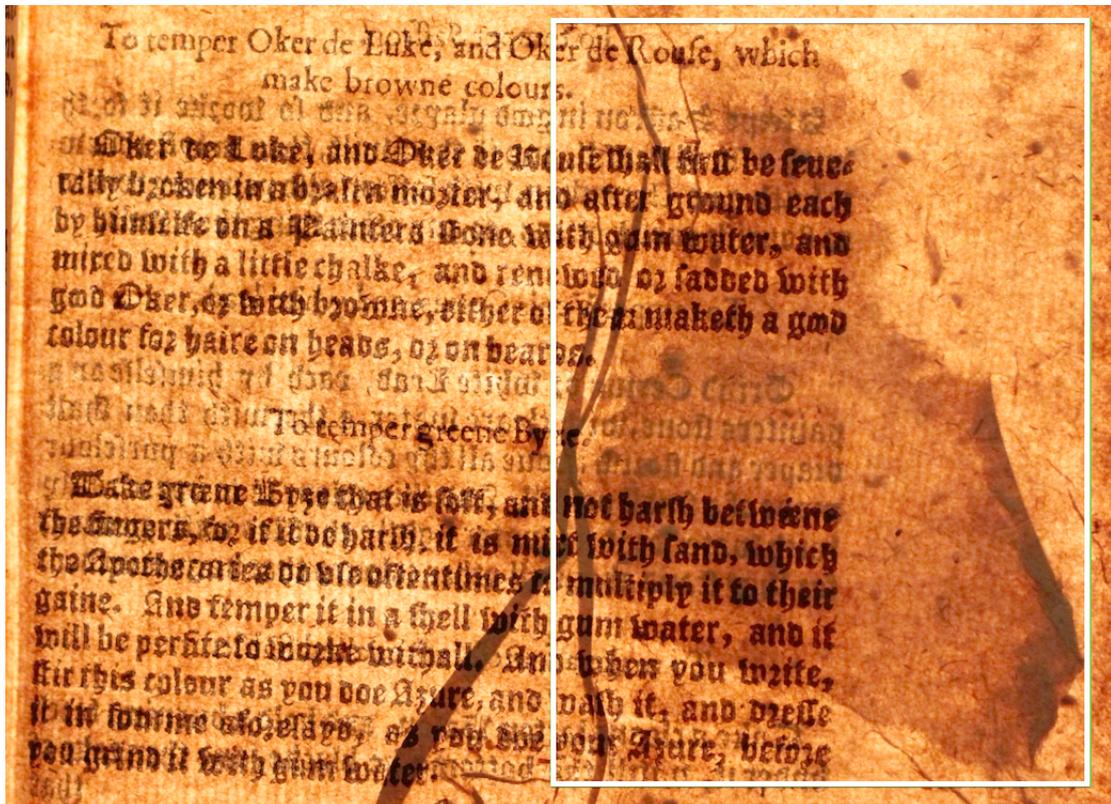

Figure II.2.5: Washington, Library of Congress, detail of fol. 9 of *A Proper Treatise* (1605) held against a light sheet, close up of a piece of unprocessed paper, evidenced by the rectangular. (Appendix 2, no. 37.)
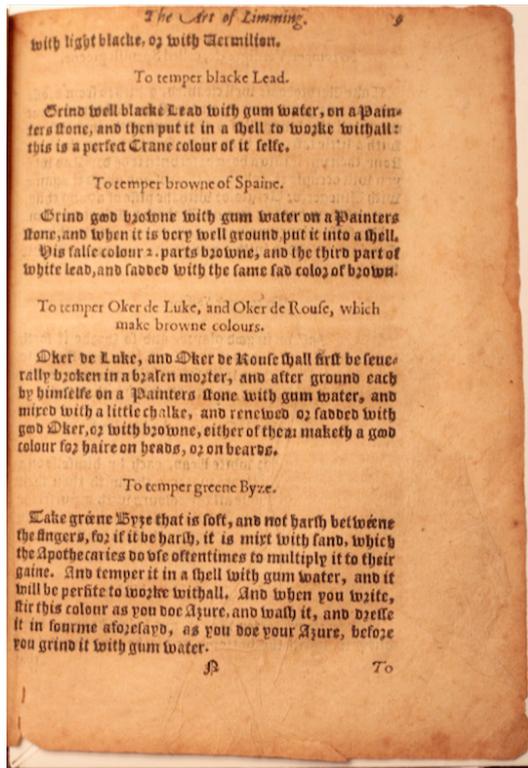
Figure II.2.6: Washington, Library of Congress, fol. 9r of *A Proper Treatise* (1605) (Appendix 2, no. 37.)
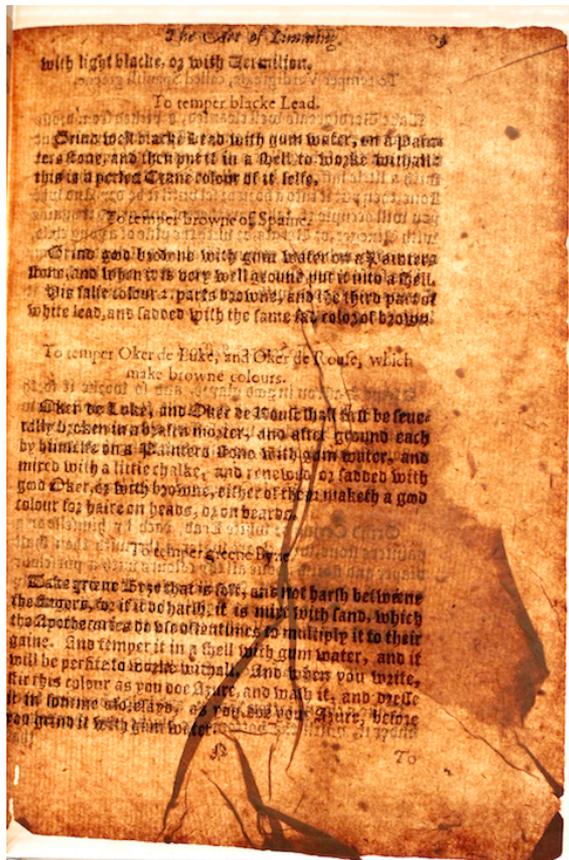
Figure II.2.7: Washington, Library of Congress, fol. 9r of *A Proper Treatise* (1605) held against a light sheet. (Appendix 2, no. 37.)

An analysis of the quality of the paper used for the making of *A Very Proper Treatise* shows that a moderate paper quality was used for the first five editions, and a rather poor quality paper was used to print the last edition. Presumably the quality of paper coincides with the paper's price and therefore impacted the final price of the book. Conclusions about a low price for *A Very Proper Treatise* may have to do with the small amount of pages, but also with the deficient quality of its paper. However, reflections of this kind remain on a speculative and hypothetical level because of lack of information concerning actual market prices.

5.3   New editions, new ways

The main focus in chapters one and two of Part II has been the first edition of *A Very Proper Treatise* (1573). Here I will make mainly two observations about subsequent editions. The five subsequent editions (1581, 1583, 1588, 1596, and 1605) I have divided into two groups that overlap. The first group entails all the editions that involve the printer Thomas Purfoote (1583, 1588, 1596, and 1605) and the second group would be the last publication (1605). The first group corresponds largely to the first group that I discussed for paper quality, being those with a moderate paper quality. The difference here is that the editions of Tottel are not considered. The second group here corresponds with the second group I examined for paper quality, being the 1605 edition.

The 1605 edition appears with the most visual and material alterations in contrast to previous editions. As mentioned earlier, the title changes, as does the layout and paper quality. The short title omits one word and the title appears different. Further the title page does not contain the approval formula 'Cum Privilegio'. This edition may be very well conceived as a different book for the authorities. Further, this edition leaves out Tottel's marginal words and thus does not share the heraldic focus of the previous editions. In the same year that he printed his editions of *A Very Proper Treatise* and *A Proper Treatise*, Purfoote also produced the book titled *A Profitable Boke* (1583). I argue that Purfoot printed these two book titles in the same year because they were proposed for selling together. In what follows I will digress on material indications why both volumes belonged together or at least coexisted in the same binding from very early in their lives.

Several copies of *A Very Proper Treatise* show signs that I take to be traces of the work of collectors and their classification systems. Plenty of these signs are the result of

nineteenth-century owners, but the early modern interest in collecting and cataloguing of *A Very Proper Treatise* can also be glimpsed. Often signs of collectors' interests lay in very tiny symbols such as numbering. A simple sequence of letters and numbers indicates a library classification system, as seen in the collection at Trinity College Dublin.[68] The 1573 copy in the British Library[69] has above the title the collocation 'N.52', which is a similar way of attributing a place and order to books. In this case the owner has not been identified. Both 1588 copies of the National Art Library[70] and the Bodleian Library[71] have been part of an eighteenth-century collection. William Herbert (1718–1795) left a sequence of letters and numbers, including the year of the volume. The Bodleian copy[72] of 1583, which is an Ashmole item, organizes the book titles in the binding by the attribution of a letter. An argument in favour of the coupling of *A Profitable Boke* and *A Very Proper Treatise* together is that in the first instance only *A Profitable Boke* was attributed the roman number five: 'V'. Another hand later added information to both *A Profitable Boke* and *A Very Proper Treatise*; this last one receiving the code 'Vb', and the same hand then added an 'a' to the existing code. This means that today we read *A Profitable Boke* as 'Va' and *A Very Proper Treatise* as 'Vb'. Studying the signatures, the composition and the binding of the 1583 copy at the Bodleian Library I tried to reconstruct the provenance of this precise copy and came across two collectors.

This Ashmole binding of the Bodleian Library keeps the *A Very Proper Treatise* and *A Profitable Booke* of 1583 is physically bound to 21 other printed items and some written excerpts. All books were bound together around the end of the 1680's, probably after John Aubrey sent his collection off to the Ashmolean museum for cataloguing in 1689.[73] More than half of the volumes are signed by John Aubrey. The back panel of the Ashmolean binding has a library inscription 'A 1642', indicating the volume's position in the Ashmolean museum, which is still the current shelf mark. That *A Very Proper Treatise* and *A Profitable Booke* were bound together previously to the current binding, is suggested by a few elements. The front pages of both *A Profitable Booke* and *A Very Proper Treatise* do not show the same level of consumption. The title page of *A Profitable Booke* has been subjected to more wear and tear then the title page of *A Very Proper Treatise*, while it is the last page of *A Very Proper Treatise* that has suffered more than its title page. Both the

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[68] Appendix 2, no. 13.
[69] Appendix 2, no. 6.
[70] Appendix 2, no. 21.
[71] Appendix 2, no. 25.
[72] Appendix 2, no. 19.
[73] Fox 2008.

title page of *A Profitable Booke* and the final page of *A Very Proper Treatise* are darker, the paper is thinner and more flexible and the corners are ruined. One other physical characteristic marks their interdependence. The cropping of the margins in the upper region is not straight. All the pages of the two volumes are marked by this characteristic. The cropping probably goes back to a moment long before the Ashmolean binding, as the cropping is not adjusted to the volumes that come before and after these two. When the volume was catalogued and bound, *A Profitable Booke* and *A Very Proper Treatise* were considered to belong together. It appears as the fifth book in the binding, *A Profitable Booke* is numbered 'V a' and *A Very Proper Treatise* is numbered 'V b'. This is the only case in the whole volume where the roman numbering is followed up by a roman letter. I conclude that previous to the Ashmole binding, these copies of *A Very Proper Treatise* and *A Profitable Booke* were bound together.
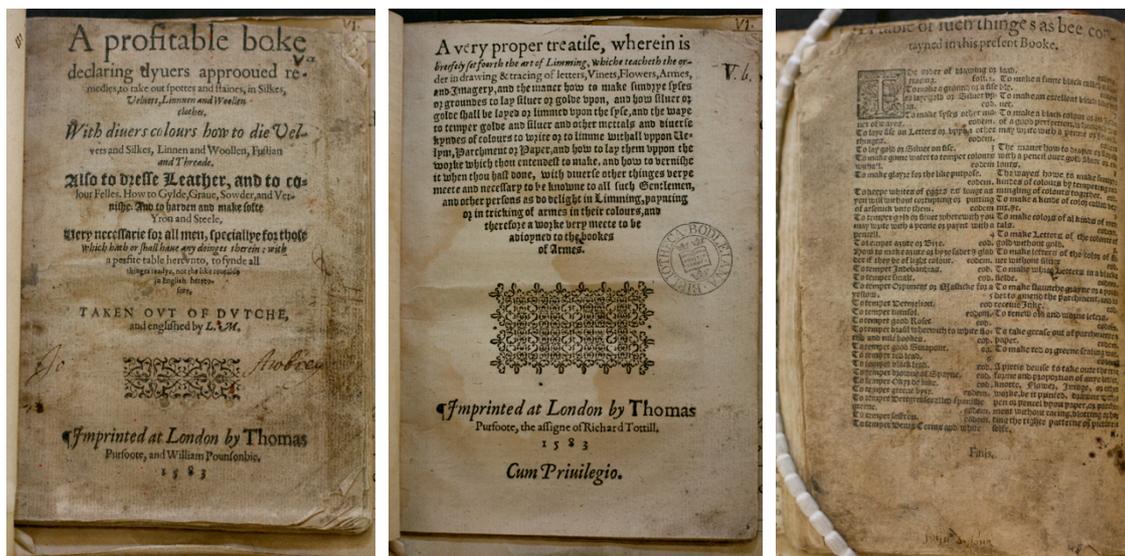
Figure II.2.8: *A Profitable Booke,* **1583, Ashmolean collection, Bodleian Library, Mal. 642 (6), showing front page with numbering Va (Appendix 2, no. 19.)**

Figure II.2.9: *A Very Proper Treatise*, **1583, Ashmolean collection, Bodleian Library, Mal. 642 (6), showing front page with numbering Vb (Appendix 2, no. 19.)**

Figure II.2.10: *A Very Proper Treatise*, **1583, Ashmolean collection, Bodleian Library, Mal. 642 (6), showing the final page with equal consumption as the front page of *A Profitable Booke* (Appendix 2, no. 19.)**

Very early bindings are rare but they do appear in the landscape of copies of *A Very Proper Treatise*. A clear example of an early binding, presumably the original, is the

Oxford copy of *A Proper Treatise* (1605).[74] The vellum binding has several material characteristics that can lead to this conclusion. The spine shows bulging bands because of the supporting structure that lies underneath in a similar fashion to that of a 1609 spine highlighted by David Pearson in his work about English bookbinding styles. Furthermore, the design of the front panel has four flower-in-vase images from around the turn of the seventeenth century and a centrepiece that was identified by Pearson as belonging to the period 1560-1620.[75] The bookbinding probably follows closely after the making and acquisition of *A Proper Treatise*. This precise volume shows the signs of concrete living conditions of books in the early modern era. The bookbinding holds several books that were printed between 1574 and 1605:

1. Nicolás Monardes, *Ioyfull Newes out of the Newfound World*, London, translated by John Frampton, printed by William Norton, 1580

2. Nicolás Monardes, *A Booke which Treateth two Medicines most Excellent agaynest all Venome*, translated by John Frampton, 1580

3. Nicolás Monardes, *The Dialogue of Yron*, Sevill, Alonso Escribano, (?)

4. Nicolás Monardes, *The Boke which Treatheth of the Snow, and of the Properties & Virtues thereof and* […] *the Seconde Dialgoue of Yron*, 1574

5. Thomas Vicary, *The Englishmans Treasure, or Treasor for Englishmen: With the True Anatomye of Mans body*, London, printed by John Windet for John Perin, 1586

6. Thomas Raynalde, *The Birth of Mankinde, otherwise named The Womans Booke*, London, printed by Richarde Watkins, 1598

7. Leonard Mascall*, A Profitable Booke, Declaring Divers Approoved Remedies, to take out Spots and Staines in Silkes, Velvuets, Linnen and Woolen Clothes*, London, printed by Thomas Purfoot, 1605

8. Anonymous, *A Proper Treatise, Wherein is Briefly Set forth the Art of Limming*, London, printed by Thomas Purfoot, 1605

These eight book titles have something in common, they all show interest in practical knowledge. The precise subjects can be situated within the medical field with a specific interest in anatomy, the field of natural philosophy, the art and artisanal field of colours for the dyeing of fabrics and leather, and book embellishment. The books can be subdivided in two realms of practical knowledge: 1) recipe books, giving shorter and

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[74] Appendix 2, no. 36.
[75] Pearson 2005, pp. 9, 98, 119, 131.

longer instructions; and 2) more descriptive works, which give information at length on a particular topic of interest. The Oxford binding contains eight titles pages, but originally these are not actually sold as eight books. Relevant to the understanding of this is the marginal note at the opening of the binding written in an early modern hand which reads: '4 books', made in the lower margin of the first flyleaf. The same hand wrote also a list of all the seven book titles on the reverse of this page:

1. Newes of commodities brought from the West Indies
2. Of the Bezar stone and the hearbe Escuerconera.
3. A Dialgoue of Iron.
4. Of Snowe and his properties.
5. A Treasure for Englishmen.
6. The birth of Mankinde.
7. To take out spots and staynes, and of dyenge.
8. The art of Limminge.

In this list, a librarian marked in pencil that the first four titles, from 'Newes' to 'Of Snowe', belong together. This could make sense considering that the first four book titles were sold together, as shall be shown below, but, I argue that the division of books in this binding and the history of ownership should be interpreted differently. The first title page of *Ioyfull Newes* indicates that this is a 'newly corrected' edition with the addition of 'three other books treating of the bezar stone, the herbe escuerconera, the properties of yron and steele, in medicine and the benefite of snowe'. This is exactly how the librarian interpreted the marginal note of '4 bookes', after all, the title page of *Ioyfull Newes* indicates the belonging of four book titles to one item. My way of thinking indicates that a book title is naturally an isolated physical item; other cases are exceptions or particularities, however, this might not be how the early modern annotator saw it. I argue that the '4 bookes' indicates the number of original groupings of books. In this sense the tiny marginal note might be the work of the bookbinder, leaving a payment reference for instance. I will schematize how I believe the books are to be ordered according to the marginal note saying the binding contains '4 bookes':

First book:

1. Newes of commodities brought from the West Indies
2. Of the Bezar stone and the hearbe Escuerconera.
3. A Dialgoue of Iron.
4. Of Snowe and his properties.

Second book:

    5.   A Treasure for Englishmen.

Third book:

    6.   The birth of Mankinde.

Fourth book:

    7.   To take out spots and staynes, and of dyenge.

    8.   The art of Limminge.

Books were sold together, such as the case of *Ioyfull Newes*. Two other books that were presumably sold together are *A Very Proper Treatise* and *A Profitable Boke*. *A Profitable Boke* appears in the same years as *A Very Proper Treatise*, being in 1583, 1588, 1596, and 1605. There are no further editions of *A Profitable Boke* signalled in older catalogues and literature, meaning that the known ones are probably the only ones.[76] *A Very Proper Treatise* and *A Profitable Boke* are often found bound to each other. This is the case for the Oxford editions of 1583, 1588, and 1605[77]; the Paris copy of 1583[78], the Folger copy of 1588[79], and the Huntington copy of 1596.[80] In total I have confirmed that six copies of *A Very Proper Treatise* are or were bound to *A Profitable Boke*, in each of the cases *A Very Proper Treatise* comes second. But many more potential pairs might have existed.[81] The Oxford copy of 1605[82], as discussed above, offers yet another example of *A Very Proper Treatise* and *A Profitable Boke* bound together. In the Oxford binding they were considered one book, analogue to my reasoning above.

Selling multiple book titles as one book was a common practice in the early modern period, as becomes clear from the title page of *Ioyfull Newes* (1580), which says that it is a 'newly corrected' edition with the addition of 'three other books'. The numerous instances of *A Very Proper Treatise* and *A Profitable Boke* being bound together is a strong argument to conclude that both volumes were sold as one, at least from the editions of 1583 of both volumes onwards. This is merit of the second printer Thomas Purfoot, who found new ways for selling a book of another printer. He annexed book

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[76] This might be taken as indication that all editions of *A Very Proper Treatise* and *A Profitable Boke* are known to us, however, eighteenth- and nineteenth-century literature was more focused on *A Very Proper Treatise* than on *A Profitable Boke*.

[77] Respectively appendix 2, nos. 19, 25 and 36.

[78] Appendix 2, no. 20.

[79] Appendix 2, no. 27.

[80] Appendix 2, no. 33.

[81] A true image would only emerge in the case of the material study of the remaining volumes. At least three other matches are possible. I refer to the pairs of 1583 and 1605 at the British Library, and the 1605 copy of the Library of Congress. Cf. Appendix 2, no. 18, 35, 37.

[82] Appendix 2, no. 36.

titles together and also, in the sixth and last edition, made a more economical and simplified version of the book.

6.   Conclusion: Creating opportunities

As stated earlier in this chapter, *A Very Proper Treatise* is a printer's compilation. This signifies that the publication was the result of a printer's choices, decisions, and responsibilities. *A Very Proper Treatise* has two printers, both interacted significantly with the book. The first printer who compiled and edited the book is Richard Tottel. He is responsible for the first of 1573 and second edition of 1581. The second printer is Thomas Purfoote, who is responsible for the third edition of 1583, the fourth edition of 1588, the fifth edition of 1596, and the sixth and final edition of 1605. The second printer's decisions modified the course of *A Very Proper Treatise*. Purfoote's way of dealing with work-related opportunities was printing another book that would accompany *A Very Proper Treatise*. In fact, from the third edition onwards (1583), *A Profitable Boke* routinely appears alongside *A Very Proper Treatise*. The sixth and last edition of 1605 has the most alterations because of visual changes, change in title, and paper quality. In all cases, the printing of *A Very Proper Treatise* was a market-related venture of two printers. This chapter has shown the ways of printers to provide in their living, either in gathering and editing information for publication or in reconceptualising the selling conditions. Tottel, the first printer, pointed out a new public, as seen in the first chapter of Part II, being a public of social standing. This promises a high quality book, however, the book was sold among a larger group, as suggested by the paper quality and the actual public as shall be examined in the third chapter of Part II. The presentation of this book for gentlemen is merely a selling strategy on behalf of the printer. The sixth and last edition of 1605 knows a quality drop in terms of paper and complexity of the book, as the heraldic layer is removed. Presumably this would make the last edition cheaper. Possibly the volume adapts in fact to the realistic intended public, based on the actual costumers of Tottel's, and later Purfoote's, print shop. So these were not all socially high placed people, but rather people that could afford a book about limning, which leaves us with a larger group of potential buyers. This would also mean that the printers adapted the product to the market, as argued in this chapter.

Chapter 3.

Buying Secrets.

The Audience and Consumption of Art Technological Literature

1.   Introduction

This chapter will focus on the fortune of the recipe book *A Very Proper Treatise*. For this chapter I examined all known extant copies of the text. This means that I have studied twenty-four of the thirty-seven remaining copies materially. During the examination I took two main questions as guides: 'Who used these books?', and, 'How were these books used?'. Then adding the sub-questions: 'Is there a unified image of the public or users?', and, 'Was the book used for its self-declared purpose?'.

I looked for traces of consumptions, consumers, the consumers' interests, and the ways of handling books. The outcome of this study will create various consumer profiles. As mentioned in the introduction to Part II, the public is discussed in all three chapters. The difference with the readers discussed in chapter two of Part II, is that these consumers are traced through material alterations made to particular copies. The readers of chapter three are tangible because the conclusions are based on a material study, and are enriched with biographical studies. This is in contrast to the readers of chapter two of

Part II, who were traced through the commercial and business network of the printer, meaning they remain more abstract and putative, but nevertheless form part of a potential real public.[1] Different again is the public that emerges from the first chapter of Part I, who represent the book's intended public, an idealized abstract public transmitted via the book itself. In what follows I will develop a detailed study of some particular volumes of interest. The audience of these particular volumes has three points or domains of interest in common: artistic, religious, and heraldic. I argue that the artistic interest of the public in a volume about 'the art of limming' might seem evident, but the my narrative will be more nuanced, because there is a difference between intended and actual use.

Although this chapter looks for users, the main method that is used is the material study of early modern printed books, which is an enormously enriching pursuit. The approach encourages the researcher to undertake provenance research; deal with library and museum catalogues; search for people of various social classes; and value the materialized past through books. Through this study a researcher engages in the study of books as material objects, and learns how to read and interpret material traces of human and non-human agency.

2. Contextualizing concepts and material of the current chapter

2.1 The concept of consumption and consumers

First, I need to briefly outline the terminology I will be using in the following discussion. I propose to use the term 'consumption' to talk about the interaction between human readers and *A Very Proper Treatise*. The consuming of books indicates a broad spectrum of interactions between humans and books, and as such I would express concern over the use of the term 'reader'. A reader is somebody who reads a written text, where reading is the action of interpreting symbols or characters to produce meaning. I argue

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[1] This is based on secondary sources and published research. Significant for this matter is the publication Warner 2013.

that the concept of 'reading' is too narrow and therefore I will employ instead a concept of the 'consumption' of books.

The action of reading does not satisfactorily cover how early modern people dealt with books. To demonstrate early modern attitudes towards books and their usage, I call upon some examples out of early modern literature. Schoolmaster and educational writer John Brinsley advises in his *Ludus Literarius*, or, *The Grammar Schoole* (1612):

> 'For the manner of noting, it is best to note all schoole books with inke; & also all others, which you would have gotten *ad unguem* [italics mine], as we use to say, or whereof we would have daily or long practice; because ink will indure: neither wil such books be the worse for their noting, but the better, if they be noted with judgement. But for all other bookes, which you would have faire again at your pleasure; note them with a pensil of black lead: for that you may rub out againe when you will, with the crums of new wheate bread.'[2]

Brinsley prescribes three ways of marking books: with ink, with fingernails, which he indicates with the Latin *ad unguem*, and with a pencil of black lead. Later on he advises that beginners should mark with their nail to make 'some secret markes this at every hard word'.[3] The use of the fingernail, leaving a quasi-invisible trace was not meant to spare the copy from marking, it was meant to spare the copy from beginner's markings. Brinsley was, according to the astrologer William Lilly who was Brinsley's pupil, a 'strict puritan', 'very severe in his life and conversation'.[4] Also, writer and illustrator Henry Peacham gives advice on how to relate to books:

> 'have a care of keeping your books handsome, a[n]d well bound, not casting away overmuch in their gilding or stringing for ostentation sake, […] for your owne use spare them not for noting or interlining (if they be printed).'[5]

Finally, the definition of 'The Study' in Johannes Amos Comenius' *Encyclopaedia* (1659) says that marking was part of study habits and process:

> 'a place where a Student, a part from man, sitteth alone, addicted to his Studies, whilst he readeth Books, which being within his reach, he layeth open upon a Desk and picketh all the best things out of them into his own Manual, or marketh them in them with a dash, or a little star, in the Margent.'[6]

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[2] Brinsley 1612, pp. 46-47.
[3] Brinsley 1612, p. 47.
[4] Morgan 2009.
[5] Peacham 1622, p. 54.
[6] Comenius 1659, pp. 200-201.

Reading automatically comes with additional actions. Early modern readers did not only read their books, they marked them in many ways, either visible or invisible. Books were not spared. The study of these interactions are of vital importance for the study of actual consumers and book use.

In the history of reading, the emphasis is typically placed on the main action of the book's user, which is of course 'reading'. Bradin Cormack and Carla Mazzio in their *Book Use, Book Theory* (2005) and William Sherman in his *Used Books* (2008) use the concept of 'reading' books, although some thought is given to book 'use'. These researchers use Geoffrey Whitney's motto 'Usus libri, non lection prudentis facit [The use of books, not the reading, makes us wise]' to support their concept.[7] Although both operate the term 'use', which is more applicable to my topic, they do situate themselves in the history of reading rather than material book history, but with a strong emphasis on the material aspect or material traces of interactions between book and reader. Obviously reading history and material book history find a meeting point in the study of how books were used. Both ways provide useful insights for my research. Indeed, material traces are witnesses of an interaction between people and books. Distinct types of reader behaviour have been determined in scholarschip. Heidi Brayman Hackel in her *Reading Material in Early Modern England* (2005) takes an interesting angle on this issue. Brayman Hackel practices a material history of reading, distinguishing between earlier research in the history of reading as focused on the 'goal-oriented reading of professional scholars' and her own research, which focuses on readers during their leisure time. Her readings include prose romances, poetic miscellanies, playbooks, and chapbooks.[8] What Brayman Hackel does is make a distinction between types of books and types of actions of readers. Her scheme does not apply directly to art technological literature, because art technological literature was read and used both by professionals and amateurs, which is the main distinction between Brayman Hackel's work and the work of, for instance, Sherman surrounding John Dee.

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[7] This motto was a dedication to the Cambridge scholar Andrew Perne. Cfr. Cormack and Mazzio 2005, 1-5; Sherman 2008, pp. xiii-xiv.
[8] Brayman Hackel 2005, pp. 1-3.

2.2　Measuring a universe of consumers

Initially I started off with a list of twenty-eight copies of *A Very Proper Treatise* spread over fourteen libraries between the British Islands and Northern America spanning the five first editions of the text (1573, 1581, 1583, 1588, and 1596). The final results of this research are based on the study of thirty-seven copies, and take into account the additional 1605 edition. An overview of the total number of copies known to me is provided in appendix two. The final results are based on primarily the consultation of the ESTC (The English Short Title Catalogue), the OCLC WorldCat, catalogues of individual libraries, the consulting of index card catalogues, internet search engine (Google), and the search for other book titles that coincidentally revealed copies of interest. Neither the short title catalogues nor bibliographical search engines provide a complete overview. Early in my research I discovered that some libraries, such as the Bibliothèque nationale de France (BnF), do not subscribe to the service of the ESTC, despite holding early English prints. Other libraries do subscribe but not all their physical copies are included in their virtual catalogue. For instance, the Library of Congress has one edition taken up in the ESTC, the other two editions I discovered only through the consultation of the physical index card system. Finally, not all copies of early modern books are held by libraries or museums: I found an additional copy in the hands of a professional bookseller. This kind of information is not indexed by public or private research institutions and is only accessible via search engines like Google. A complete overview of the material presence of an early modern printed book title is reconstructable through the consultation of various virtual and physical cataloguing and index systems. However, I must stress that this overview is based on accessible information. Copies in private hands and closed libraries or other institutions are not included in this survey.
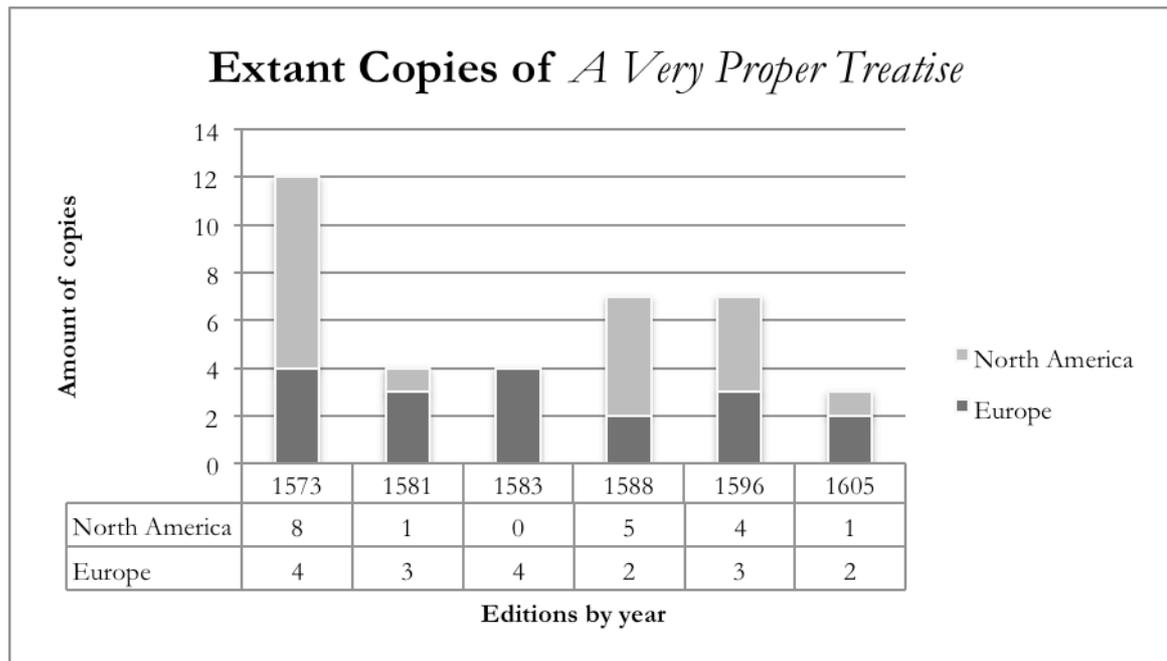
Fig. II.3.: Graph of the chronological and geographical spread of the extant copies of *A Very Proper Treatise*.

The chart above shows the amount of copies per edition and their spread over two continents. The survival is unequally spread over different editions. The 1573 first edition has the most surviving copies, standing at twelve copies.[9] The second position is shared by the 1588[10] and the 1596[11] editions, with seven copies each. Both the second edition of 1581[12] and the third edition of 1583[13] have four copies, while the 1605 sixth edition[14] is represented by three copies. The spread of the copies per continent is quite uniform. Europe contains eighteen copies;[15] Northern America nineteen,[16] of which eighteen are institutionalized.[17] Within this, Great Britain has the most copies, standing at seventeen extant copies.[18] And within Great Britain, the British Library holds the majority of these, with a total of seven copies, and at least one copy of every edition, except the 1588 one.[19] Among all the surviving copies I have examined twenty-four

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[9] Appendix 2, nos. 1 until 12.
[10] Appendix 2, nos. 21 until 27.
[11] Appendix 2, nos. 28 until 34.
[12] Appendix 2, nos. 13 until 16.
[13] Appendix 2, nos. 17 until 20.
[14] Appendix 2, nos. 35 until 37.
[15] Appendix 2, nos. 4, 5, 6, 9, 13, 14, 15, 17, 18, 19, 20, 21, 25, 28, 29, 30, 35, and 36.
[16] Appendix 2, nos. 1, 2, 3, 7, 8, 10, 11, 12, 16, 22, 23, 24, 26, 27, 31, 32, 33, 34, and 37.
[17] The only copy that is not conserved by a library or research institution is at New York, see appendix 2, no. 23.
[18] The only other European copies are in Ireland and in Paris, see appendix 2, nos. 13 and 20.
[19] May I point out that the copy for sale at the private bookseller is from the year 1588.

copies personally, meaning that I have been in close contact with the material object. I have seen all nineteen European copies and the five Washington copies.[20] Further, I have been able to study other reproduction copies. Full reproductions of the 1573, 1581, and 1596 editions held at the Huntington Library are available via EEBO.[21] Yhe Public Library of Boston and the Getty had their respective 1573 and 1596 copies scanned and made available online at archive.org.[22] Some copies I have examined partially because of the sectional nature of the reproductions. This is the case with the Yale copies of 1573 and 1588, and the Chicago copy of 1573.[23] I have also been in contact with those institutions housing the remaining copies, but in each of these cases the volumes seemed to be without any post-productory human interaction. The material study of these copies could have been very useful, such as for the binding or cropped margins, but I decided to focus on the copies containing traces of users, readers or consumers, because that is the core focus of this chapter.

3.   The early modern world of books

3.1   The early modern book: a survey of bookbindings and book realities

Unfortunately, each of the early modern books I held in my hands, also passed through the hands of nineteenth- and twentieth-century book dealers and librarians, by which I mean that by their actions much information was erased through washing, cropping and rebinding, and other regrettable actions.[24] In fact, most surviving copies of *A Very Proper Treatise* carry nineteenth and twentieth century bindings that in many cases replaced a

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[20] The five Washington copies are found in the appendix under nos. 11, 12, 27, 34, and 37.

[21] Appendix 2, nos. 10, 16, 33.

[22] Appendix 2, respectively nos. 1 and 31.

[23] Appendix 2, respectively nos. 7, 22, and 3.

[24] Violent and destructive actions were also common in earlier periods. For instance, in order to make a binding a lot of force must have been employed. In his description of crafts, Robert Campbell says that the bookbinder 'has not great ingenuity […] and requires few talents, either natural or acquired, to fit a man to carry [the work] on; a moderate share of strength is requisite, which is chiefly employed in beating the books with a heavy hammer, to make the sheets lie close together'. Here a description of a profession brings us closer to how books were treated. Paradoxically, in order to offer a book major protection, the book block had to endure violent beatings. Cfr. Campbell 1747, p. 135.

more or less original binding. The Dublin copy of the 1581 edition, which will be further discussed later in this chapter, has a standard paperboard library binding, of which the corners and joints of the binding have been strengthened with leather.[25] Not only on the outside but also on the inside of the binding one can recognize its more contemporary fashion. The inside of the binding is covered with a paper that united the book block to the binding. There are some material indications suggesting that the current binding replaces an earlier binding. The binding houses three books, all three books have cropped pages of the same dimensions. The leaf edges are sprinkled with red paint, a habit specific to the seventeenth and eighteenth centuries. Many of the copies of *A Very Proper Treatise* are in a similar state, having received a new library binding during the last two centuries. Some bindings of that period contribute to the quality of the book. The binding of the 1605 edition held by the Library of Congress has a red leather binding with a red reading ribbon, which is an indication of a high quality binding.[26] Yet, this copy was marked by bad paper quality at the time of printing.[27]

Continuing on the subject of the bindings, four specific conditions of the books give a valuable insight to the material living conditions of *A Very Proper Treatise*. The first example of these, provided by the 1573 Folger copy, gives a glimpse of the material status of *A Very Proper Treatise* as it moved between the print shop and its first owner's bookshelf.[28] This item is preserved unbound. It is unknown if this unbound condition has been permanent, but it is likely, given the severe damage the copy has endured.

The second example equally sustains that copies must have lived without binding, with several copies of *A Very Proper Treatise* displaying horizontal folding marks. It not in all cases it could be confirmed that the marks were the result of folding, such as those in the Folger copy of 1588, where the individual lines do not correspond to those on subsequent pages.[29] This volume is marked by twentieth century conservation measures. All the pages have been wrapped into a fine gauze or thin translucent fabric in order to preserve the paper, but meaning the volume is no longer in its original state. An example offering clearer marks is the Liverpool copy of 1583, which has a corresponding horizontal line coherent throughout the whole volume.[30] The advantage of folding tiny books into two or more pieces is that it will be reduced in surface. This action makes the

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[25] Appendix 2, no. 13.
[26] Appendix 2, no. 37.
[27] Appendix 2, no. 37.
[28] Appendix 2, no. 11.
[29] Appendix 2, no. 27.
[30] Appendix 2, no. 17.

volume certainly fit into smaller spaces, which facilitates travelling or storage in boxes with drawers. This is important because it gives insight into the actual use of books.

The third condition that says something about the early use of early modern printed books is the holes in the margins, as evidenced in the 1605 volume of the British Library.[31] This copy is marked by its large and possibly intact original margins, which sets it apart from the majority of the other copies that have cropped margins resulting from rebindings. Every page belonging to the original volume is marked with four perforations. These holes are material evidence of the technique that kept the leaves together, a type of stitching called 'stab stitching'. A needle with thread was passed though the inner margins of the text block or gathering of papers, close to the spine, two or more times. Sometimes a paper or vellum wrapper, which served as cover, was included in this process.[32] It seemed to be an economical method and was common for pamphlets, schoolbooks and books of popular consumption.

Robert Akers notes that the practice of stab stitching was common from the last two decades of the sixteenth century onwards.[33] After 1586 a strict regulation was used by the Stationers Company about the 'stytchinge of bookes'. Stitched books were not allowed on the market, unless under specific conditions. Stitching was allowed for folios with less than forty gatherings, for octavo with less than twelve gatherings and duodecimo with less than six gatherings.[34] It seems that a quarto does not appear in the regulations of 1586. This might mean that stitching a quarto was not allowed; at least it does not appear as an allowed exception. It might have been done after the book was sold, either by a professional or at home, or alternatively, it might have been done in the print shop, but illegally. Stitching books was a cheap way of keeping the papers together, a practice also used for *A Very Proper Treatise*.

The fourth condition of *A Very Proper Treatise* is a variant on the stitching of books. The National Art Library copy of 1588 has two bindings.[35] The first one is a grey carton board binding from before the copy came into the collection in 1904. This other binding covers up an older blue paper binding.[36] The inside of the blue cover shows perforations that were further torn. The blue binding might have been commissioned by

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[31] Appendix 2, no. 35.
[32] Pearson 2005, p. 148.
[33] Foot and Akers 2015.
[34] Pearson 2005, p. 148.
[35] Appendix 2, no. 21.
[36] Gentlemen in the eighteenth century were advised to have their books sown in blue paper, see Pearson 2005, p. 159.

William Herbert (1718–1795), a bibliographer and bookseller of certain fame.[37] These eighteenth century blue wrappers were not the same as earlier temporary wraps or stab-stitched books, but they offer an image of what a cheap temporary binding should, or could, look like. The carton board binding is another cheap way of keeping the pages of a book together and protect them; also this technique was used on *A Very Proper Treatise*.

Through these few case studies I have provided an overview of the landscape of early modern book bindings and those of *A Very Proper Treatise* in particular. Each bookbinding, or book with a missing binding, represents a physical reality of the book. All evidence points towards the fact that *A Very Proper Treatise* was sold unbound, alone or together with *A Profitable Booke*. The first printer Richard Tottel might have offered a binding service at the time of first publication as he had a French book binder in service around that time, named Peter Horsan or Harsaunte.[38] However, no material evidence of this fact survives. Volumes were kept unbound or put into temporary economical bindings. Certainly, unbound copies easily perished, as they were more sensitive to external damaging factors and human usage. There is further evidence that booklets with a limited amount of pages like *A Very Proper Treatise* could be folded. In almost all the cases, the copies have been rebound at least once at a certain point in time, with mostly cropped or damaged pages, and occasionally significant information loss. Further on in this chapter I will use some more elaborate examples of the consumption of *A Very Proper Treatise*, bringing to light several more binding realities such as being bound to a specific selection of books or being bound to manuscripts or appearing with cheap bindings.

3.2 Early modern book consumers: a survey of book owners

Material investigation has brought the names of certain owners to light. Sometimes the material evidence has perished through time and usage, while in other cases evidence has been intentionally removed. In the case of the 1573 Glasgow edition, the nineteenth century bookbinder William Pratt has done his best to remove all traces of the book's

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[37] Herbert owned at least two copies of *A Very Proper Treatise*, both of the year 1588. One is today in the National Art Library, the other is in the Bodleian Library and is known as the Douce copy. Herbert had his copies often rebound and writes about this practice. The flyleaves of the 1588 NAL copy and the Glasgow copy of pseudo Albertus Magnus' *Secreta mulierum et virorum* have a very similar watermark existing out of a circular shape with a royal crown on top. Cf. the catalogue entry of Albertus Magnus' *Secreta mulierum et virorum* (Sp Coll Ferguson Ah-a.30) (http://www.gla.ac.uk/services/incunabula/a-zofauthorsa-j/ah-a.30/)
[38] Byrom 1927-1928, p. 206.

past.[39] The result is that only a monogram or abbreviation 'c.q.' is vaguely legible and at least one possible name and several other inscriptions have been rendered illegible for the naked eye and even modern technology.[40]

Happily most names, if not lost by washing or by cropping, remain decipherable. Most of the signs left by people in *A Very Proper Treatise* are owner signs, yet of all the names that are in these copies only a few are from early modern users. Even though this group of eighteenth- and nineteenth-century collectors and owners is very interesting, it does not contribute to the historical understanding of the making and early use of the book. Within the boundaries of this chapter, only a few particular book owners of later periods will be discussed.

The importance of this PhD research is that for the first time the consumers of *A Very Proper Treatise* are listed, identified, and studied. The actual audience of this early modern volume can be studied in different ways. One of these ways is focusing on the image of the public, which left concrete details and indications. In the following part I will focus on the audience as individuals interacting with the book. Among this category there are users who did not necessarily leave a name behind. A comment on a recipe for instance might not be connected to a specific name, but it remains the interaction of a consumer with the book and therefore can be considered when talking of the audience.

I was able to attribute an identity to twelve subjects, although some of these identifications are non-definitive. This means that there are more signatures, meaningful inscriptions, and monograms present in the studied copies, but these have become illegible through washing or cropping of the pages or simply through the vulnerability of the ink. When compiling these twelve individuals I consider only sixteenth century and seventeenth century users, and, as mentioned earlier, I did not pursue undeciphered monograms or illegible signs of ownership.[41]

1. William Neile (1560-1624) (1573, Bodleian Library)
2. James Ussher (1581-1656) (1581, TCD)
3. Phebe Challoner (?) (1581, TCD) → daughter Elizabeth, wife of Timothy Tyrrel
4. William Le Neve (1592-1661) (1581, British Library)

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[39] Appendix 2, no. 4.
[40] Appendix 2, no. 4, fol. 9v.
[41] In the case of ownership signs in another book title bound to the book title of interest, I have only taken up the name if there is a clear connection to the whole of the binding. For instance, I left a clear signature of the Glasgow copy (Appendix no. 4) out of the selection, because it belongs to the annexed part that was bound to *A Very Proper Treatise* after the early modern period.

5. Robert(us) Thorne (?) (1581, Huntington Library)

6. Elias Ashmole (1617-1692) (1583, Bodleian Library)

7. John Aubrey (1626-1697) (1583, Bodleian Library)

8. William Goodman (?) (1583, Bodleian Library)

9. John Dyson (?) (1583, Bodleian Library)

10. Andrew Astley (?-1633) (1588, Bodleian Library) → son

11. Jenny Mill (?) (1596, Cadbury Library Birmingham)

12. Brian Twyne (1581-1644) (1605, Corpus Christi Oxford)

All the twelve names are connected to just eight copies of *A Very Proper Treatise*. Half of these copies are well preserved thanks to their early passing into the hands of collectors or institutions. This is the case for the 1605 copy owned by Brian Twyne, who bequeathed his collection of printed and manuscript books to Corpus Christi College, Oxford, where it remains today.[42] Elsewhere, the list contains ten consumers that signed the volume with their name; one was traceable through the library reference number, and one was traceable through a manuscript catalogue. The list contains two female consumers, and ten male consumers. Among these twelve consumers, five have an entry in the Oxford Dictionary of National Biography, hereafter referred to as ODNB (numbers 2, 4, 6, 7, 12). Two further subjects are mentioned in the ODNB (numbers 1, 3), meaning there are five with no presence on the ODNB (numbers 5, 8, 9, 10, 11). Of this last group one subject has a traceable will (number 10) and two names are shared by multiple people, which results in multiple wills and documents (numbers 8, 9). This leaves the final list with two unidentified subjects (numbers 5, 11), of which one is situated in a family context (number 5). This leaves my research with one name, that of Jenny Myll (number 11), that needs further attention in order to better grasp the historical context.

The case of Jenny Myll is of interest because of the particular inscription she left on the 1596 copy of *A Very Proper Treatise*: 'Jeny Myll owe this booke / 1596'.[43] She conveys the sense of ownership by explicitly building in a possession claim. Another interesting ownership claim is by William Le Neve who writes from the perspective of the book: 'Willym Le Neue me iure possidet [William Le Neve is my legal owner]'.[44] Jenny Myll's inscription finishes with a date (1596), most likely the date of acquisition, which is also the year of publication of the fifth edition. This could mean that Jenny Myll

[42] Appendix 2, no. 36.
[43] Appendix 2, no. 28.
[44] Appendix 2, no. 14.

was a customer at Thomas Purfoote's print shop. Finding a direct customer at one of the print shops is a very rare fact for this particular book title. The only other potential buyer at Purfoote's print shop is the Oxford student Bryan Twyne, who, according to his letters, went to London in 1605, the year of the sixth edition of *A Very Proper Treatise*, which is the one in his collection.[45] Jenny Myll however, would be more certain because she dated her copy of the book to the year of printing. This leaves us with a female consumer of *A Very Proper Treatise*, who both fulfils the role of actual audience and circumstantial audience of the print shop.

The other case involving a female consumer belies a love story and unexpected transmission dynamics. The signature of Phebe Challoner figures on the second leaf of *The Accedens of Armory* (1576), the first book of the TCD binding that holds the 1581 copy.[46] This precise copy has never been examined, although a lot of studies address the library of Phebe's father, Luke Challoner. Luke Challoner was vice-provost of TCD. He left part of his personal collection of books to Phebe, the 'sole executrix & administratrix' of Luke's testament.[47] The Latin books went to James Ussher, Phebe's future husband. Most scholarship suggests that the couple were married in 1614, but I suggest reconsidering the wedding dates based on my findings. An autograph draft letter of James Ussher to Dr Arnold Boats contains a post scriptum referring that 'J.' married in 1615, presumably referring to himself. This means that Phebe signed the volume before 1614/1615, using her maiden name. The volume of interest did not come from the collection of Phebe's father Luke Challoner, as might be expected, but from James Ussher's collection. Already in 1608, James registered the three book titles of the actual binding, being Gerard Legh's *The Accedens of Armory* (1576) and John Bossewell's *Workes of Armorie* (1572), and the recipe book *A Very Proper Treatise* (1581).[48] I argue that the volume containing *A Very Proper Treatise* was a token of friendship and affection, offered in the time before the marriage, which lies at the basis of the love story the Dublin copy hints at.

Some of the signatures in *A Very Proper Treatise* are worth mentioning. The signature of Phebe Challoner in the Dublin copy is written in a particularly clear way (figure II.3.2).[49] The signature of William Neile in the 1573 Bodleian copy is an enigma that could only be deciphered thanks to his multiple signatures in another book: the

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[45] Gibson 1940, pp. 95-96.
[46] Appendix 2, no. 13.
[47] Appendix 2, no. 9; White 1927, pp. 22-23.
[48] Dublin, TCD MS 793, fol. 184r.
[49] Appendix 2, no. 13.

Cambridge copy of *The Holy Bible* of 1602.[50] Rob'tus, or Robert, Thorne of the 1581 Huntington copy is not only identifiable through his name but also through his coat of arms.[51] The signature of Andrew Astley in the Douce copy of the Bodleian Library is so faint that with a cursory look at the page one might not even notice any writing, but it did not escape my scrupulous examination.[52]

The name Andrew Astely seems to be very uncommon, and there is very little to be found relating to this name, and yet more people went by this name. The will of Knight Andrew Astley of Writtle (Essex) is preserved at the Prerogative Court of Canterbury.[53] He was born in the second half of the sixteenth century and died on 1 September 1633, with probate granted on 15 October 1633. Sir Andrew Astley's will divides money, land, properties, and goods between his sons, sons-in-laws, daughters, wife, and brother. Sir Andrew seems to possess a reasonable amount of books, mentioning them on three occasions in his will. He bequests his 'Italian, spanish and french books' to his brother Thomas Astley. He leaves his 'best latin books' to his son-in-law George Alrywood and goes on to conclude his will with 'all his goods [...] and books not by this my present will and testament bequeathed and disposed after my depts paid begaryes discharged and funerall rights performed, I doe give and bequeath unto my sonne Thomas Astley'.[54] The context created by the will point at presumably the right Andrew Astley.[55]

One of the returning characteristics that connect many of the identified and also unidentified readers is the interest in heraldry. William Le Neve is a herald and genealogist.[56] The antiquary and astrologer Elias Ashmole has specific interest in heraldry. During his life he got closer to the famous herald William Dugdale (1605-1686) and at a certain point became his son-in-law.[57] John Aubrey, belonging to the circle of acquaintances and friends of Elias Ashmole, also had heraldic interests. Thomas Gore,

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[50] Preserved at Gonville and Caius College, Cambridge, H.25.25; see Scott-Warren 2010, p. 367.
[51] Appendix 2, no. 16.
[52] Appendix 2, no. 25.
[53] The National Archives: Ref. prob/11/164/447.
[54] The National Archives: Ref. prob/11/164/447.
[55] Concerning the identification of the right person in historical research, one meets several difficulties. As if often the case, there were more people with the same name, such as for instance one of Andrew Astley's sons, who was his namesake. The case of Andrew Astley is quite simplified, as there are other situations where there is a multitude of people with the same name, such as for John Dyson, where three wills survive and finally, including other early modern documents, one should investigate eleven different entities without any clear link with books or painterly knowledge, nor can the book be exclusively linked to a certain social status. Here the decision making process that the researcher needs to go through becomes difficult. Looking for early modern subjects can be like looking for a needle in a haystack.
[56] Wright 2004.
[57] Hunter 2006.

one of Aubrey's contacts, asked him to 'look out for any newly printed heraldry books', meaning that Aubrey was occupied with this subject. Aubrey was practical in the arts himself.[58] Other then interests for professional or other reasons, there is another curious element that links a certain person to heraldry. Nothing is known or written about Robert Thorne, so discussing his interests might be difficult. However, the title page of his copy of *A Very Proper Treatise* contains his name and his coat of arms (Figure II.3.2). I conclude that Thorne acquired a volume with the artistic-heraldic purposes and left his coat of arms on the title page, which confirms that he at least had and used his coat of arms. The bibliographical interests of the couple Phebe Challoner and James Ussher will be discussed later on in this chapter. Several links with the traced individuals and *A Very Proper Treatise* are evident.
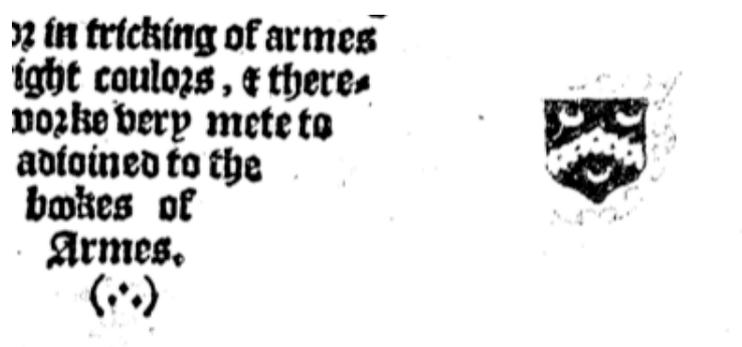
Figure II.3.2: Detail from title page *A Very Proper Treatise* (1581), Huntington Library.

Just like in many early modern books, there appear several interesting signatures and names attached to various copies. In this survey of book owners I have shed light on the early modern users that could be identified, which are twelve in total. It is obvious that copies of *A Very Proper Treatise* were used by more people than these twelve. Unfortunately lacunas are typical for this kind of material study of books, as rarely all copies of all editions survive of a single book title. Nevertheless the work for this chapter has raised particular interest for one of the subject, Phebe Challoner, who will be one of the main actors in this chapter.

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[58] Citation taken from Scurr 2015, p. 194. John Aubrey's correspondences are conserved at Oxford, Bodleian Library: MS Ballard 14, MS Ashmole 1814, MS Tanner 25, MS Tanner 456a, MS Wood F 39; and at London, British Library: MS Lansdowne 231, MS Egerton 2231.

4.   Early modern book consumption: a survey of attitudes and interests

Books are made of paper, and paper provides a common writing support. Whether books were printed, handwritten, or left blank, early modern people were keen on using whatever space was available to scribble poesies, recipes, and references. *A Very Proper Treatise* was certainly not an exception to this. The Yale Center for British Art's 1588 copy contains a nice example of the religious life of an art technological print.[59] The verse of the title page contains a lengthy religious text about tears, sin, pity, and fear, which will be discussed later in this chapter. The Bodleian copy of 1583 keeps a list of the ten plagues of Egypt on the blank page in between two books.[60] Consumption here is limited to the material aspect of the book. Striking is that there is no interaction with the content. Historical traces with religious content point to an interest in the book as a material object, but these traces are not related in a direct way to the content of the book, they also do not give any certainty if the content of the book was used.

Another way of consuming art technological sources, as with all books of practical knowledge, is reproducing the content. Earlier I argued that *The art of making* has common roots or is a possible example for *A Very Proper Treatise*. In this case the dynamic of knowledge transmission goes from manuscript into print. But also the other way around is a reality. British Library MS Harley 1279 (figure II.3.2) offers a nice example where recipes where copied from *A Very Proper Treatise* (figure II.3.3).[61]
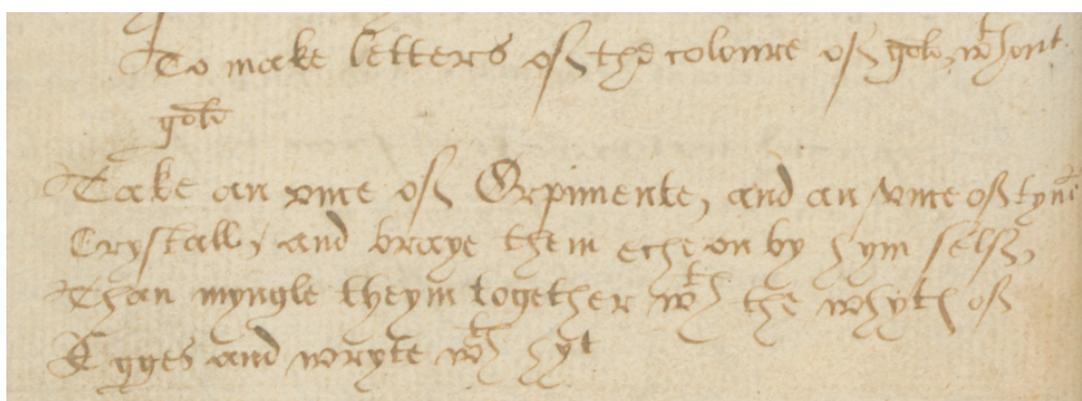

Figure II.3.3: Recipe 'To make letters of the coloure of gold, without gold'; London, British Library MS Harley 1279, fol. 62v.

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[59] Appendix 2, no. 22.
[60] Appendix 2, no. 19.
[61] London, British Library, MS Harley 1279.

**¶ To make letters of the colour of gould
wythout gould.**

Take one vnce of Orppiment and one vnce of fyne
Chriſtall, and beate eche of them by him ſelfe to
poulder in a braſen morter. Then grynde them wel to
gether wyth glayre vpon a paynters ſtone, then it ys
perfect to wryte withall.

Figure II.3.4: Recipe 'To make letter of the colour of gould without gould'; *A Very Proper Treatise* **(1573), fol. 10r.**

Further, this manuscript combines written art technological recipes with heraldic imagery. Here we have arrived at the purpose of the little volume: to provide an art that can be applied for heraldic purposes. Several heraldic volumes I came across contain colours added to the imagery. Of particular note is the binding owned by Phebe Challoner, which contains alongside the added colours, other artistic techniques employed to transport imagery (which do not appear among the recipes of *A Very Proper Treatise*).[62] The proposal and suggestion of the printer in the title, about the 'tricking of armes in their right colors' was heard.

Finally I would like to conclude with a word on some of the actual practical uses of the recipes of *A Very Proper Treatise*. One of the key questions concerning textual art technological knowledge is whether the knowledge was executable and whether it was put into practice. Owners' interactions with *A Very Proper Treatise* might bring answers to this question. One of the recipes prescribes how to make white letters in a black field.[63] A concrete example of a white letter in a black field I found in MS Sloane 3604, an autograph manuscript of Robert Freelove. An initial 'I' contains the portrait of Henry VIII, and the white letters spelling out his name are incorporated in the black of Henry's garment (figure II.3.4).[64]

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[62] Appendix 2, no. 13.
[63] Anonymous 1573, sig. 2Cr.
[64] London, British Library, MS Sloane 3604, fol. 9r.
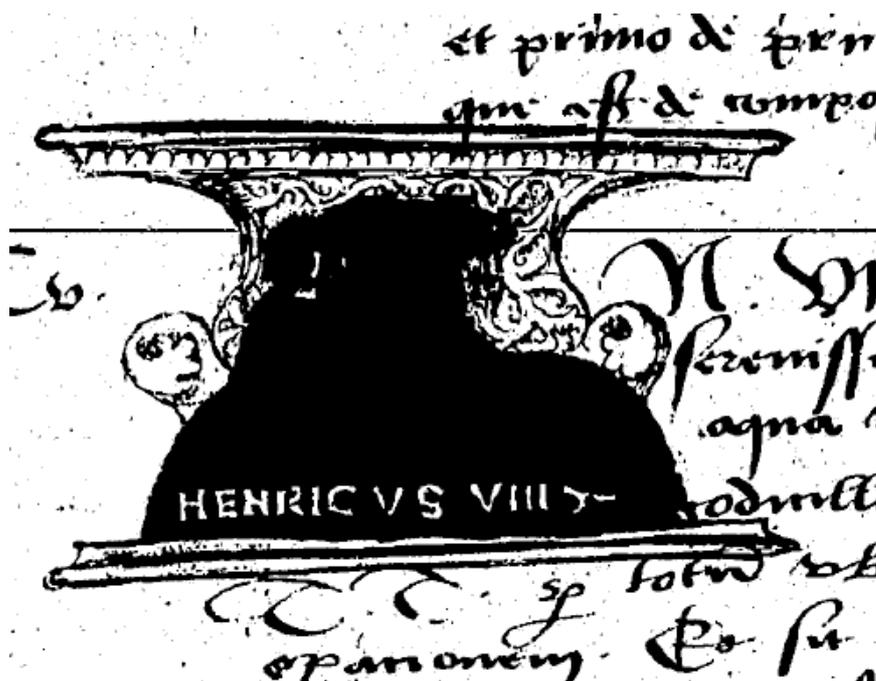
Figure II.3.5: Initial 'I' with the portrait of Henry VIII; London MS Sloane 3604, fol. 9r.

However, the techniques used in the image did not follow the procedure of *A Very Proper Treatise*, even though the end result is the same. Nevertheless, the procedure 'to make white letters in a black field', as says the recipe title in *A Very Proper Treatise*, seemed to be subject of interest. This particular recipe was successful and was most likely actually put to practice and experienced. This particular recipe didn't pass unnoticed by the consumer of the 1588 Yale copy, who wrote 'aproved by me'.[65] Or, as the 1605 consumer of the BL copy wrote, the recipe 'to make white letter in a blacke field' was a 'pretty exercese'.[66]

4.1 Books as paper objects and the religious interest of early modern consumers

A feature of virtually all early modern books, and books more generally, is that they contain text, but they also contain empty pages, margins, and spaces between titles and text. These empty spaces were used as paper to write, as space for comments on the text of the book, or for owner marks. They could be utilized for learning to write, to draw, to calculate, to copy from other works, and to write down lists of things, such as people who borrowed books. Anything could be written down. Plenty of books that I have seen

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[65] Appendix 2, no. 22.
[66] Appendix 2, no. 35, sig. C1r. The 1605 edition follows a different signature pattern then the first edition.

during this PhD project, whether or not connected to *A Very Proper Treatise* or practical knowledge, display similar characteristic marks of use.

Religion formed an integral part of the daily lives of most, if not all, early modern people. As discussed in the first chapter of this thesis, the timings included in recipes were often guided by references to common devotional prayers. Looking at the binding of the Dublin copy of *A Very Proper Treatise*, we can discern an interest in the image of a Madonna with child, a very popular piece of Christian iconography. Other signs of religious interest around the volume are connected to the book itself or the larger context of the binding. The Bodleian copy of 1583 contains a list of the ten plagues of Egypt on a blank page between two books.[67] The list of the plagues, which appears in a numbered sequence, is drawn from the Book of Exodus. Elsewhere, the back of the title page of the 1588 Yale copy of *A Very Proper Treatise* contains a long prayer. The 1573 Glasgow copy also keeps a prayer, but it is doubtful that *A Very Proper Treatise* and the prayer were bound together during the early modern period. But it is a general truth that the spare paper in books was used to write, often religious things appear in blank space of printed books.

4.2 How art, heraldry, a book collection, and a love story are connected in the case of Phebe Challoner and James Ussher

The list of consumers of *A Very Proper Treatise* is marked by gendered inequity from the point of view of the signatures, although this does not necessarily mean that women did not use the book. The results of my research show that from the surviving copies and signatures, there are only two female subjects (nrs 2; 11), whilst there are ten male subjects. Through this PhD research I was able to reconstruct the story behind the book that was signed by one of the two female subjects, Phebe Challoner (nr 2). As brought up in the previous chapters already, this copy of *A Very Proper Treatise* is bound to *The Accedens of Armory* (1576) and *The Workes of Armorie* (1572). This part will build on what has been briefly explained in the survey of book owners, which makes part of this chapter. The study of this particular case is interesting from the point of view of social history, as it shows habits of young people that later in life developed themselves as

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[67] Appendix 2, no. 19. The two books are *New Directions of Experience* (1613) and *A Brief Account of the Province of Pennsilvania* (1682).

booklovers and owners of an impressive book collections.

The history of the books at TCD is both complex and fascinating, but this precise volume is a pearl in the collection thanks to its personal story. The old nucleus of TCD was started by Phebe Challoner's father, Luke Challoner. Through the marriage of Phebe Challoner to James Ussher, the library passed into his hands. Both Luke Challoner and James Ussher dedicated much effort to buying books for TCD, but when the Ussher family left Ireland for England in 1641, they took the collection of books with them. After Ussher's death in 1656, the library passed to his daughter and only child, Elizabeth, who was married to Timothy Tyrrel. The Tyrrel family looked to sell the collection, and there was soon interest from abroad, from the king of Denmark and from Cardinal Mazarin, but the English government prevented the collection from leaving the kingdom. There was interest in England from Thomas Barlow, the Bodleian librarian and a contact of Ussher, and from Sion College London. But eventually Henry Cromwell decided that Dublin would be the better destination for the library, and finally, in 1656, the Irish army bought the collection for TCD.[68] Not the entire Ussher collection belongs to TCD, with part of it still to be found in the Tanner collection at the Bodleian Library.[69] A significant part of the special collections in TCD started in the same location; the nucleus of the collection temporarily left and then turned back to never leave again. The history of the entire book collection is the context for further understanding the particular volume EE.k.19, containing the three books mentioned in the previous paragraph.

Starting this research about the copy of *A Very Proper Treatise* in Dublin, one has to consider the general flow of books between Luke, Phebe, and James. However, the story of some of the books might be showing a different movement, such as the case of volume EE.k.19. Where most books passed from Luke over Phebe to James, the volume of interest, which is part of the core collection of TCD, passes from James to Phebe. This volume contains the clearest and most prominent signature of any of the copies of *A Very Proper Treatise*: 'phebe challoner'.

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[68] Carr 1895, p. 375.
[69] Barnard 1971, pp. 9-14; Boran 1998a, pp. 75-115; Boran 1998b, pp. 116-34. See also about Ussher's library: Lawlor 1900.
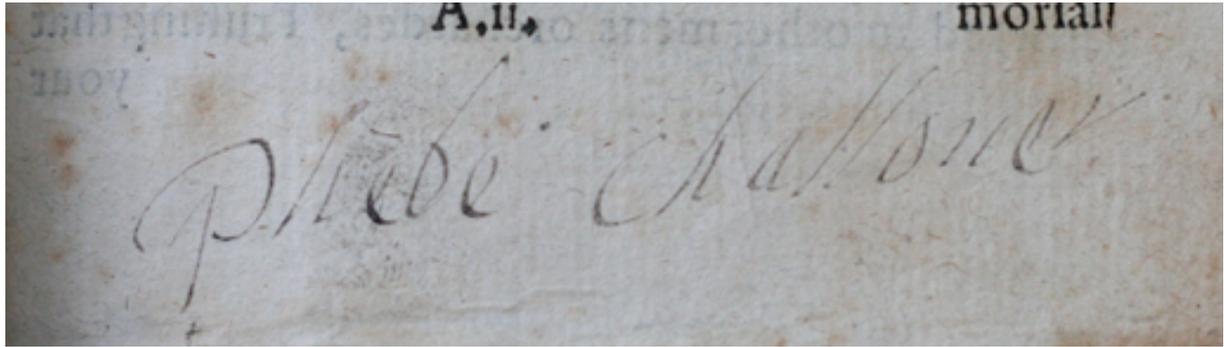
Figure II.3.6: Signature on fol. 2r of *The Accedens of Armory* (1576), by Phebe Challoner, in TCD, EE.k.19. (Appendix 2, bound to no. 13)

The signature indicates that Phebe signed this book prior to her marriage, because she used her maiden name. I found evidence to sustain an unexpected dynamic in this story. These findings are results of my research, and I argue that this volume was a gift from James Ussher to Phebe Challoner before they got married. Based on textual evidence alone, one might easily conclude that EE.k.19 was acquired by James Ussher in or before 1608, and remained in his collection until his death after which it was eventually annexed to the library of TCD together with the whole of the Ussher collection. However, when one considers the material evidence of this volume, it becomes apparent that the edition probably left Ussher's collection for a period, and its story takes a bit of an unexpected and surprising turn. The second page of *The Accedens of Armory* holds the signature of Phebe Challoner, James Ussher's future wife.

Little information survives about Phebe Challoner. She was the daughter and only surviving child of Luke Challoner and his first wife Rose Ball. Phebe's mother died of the plague on 25 October 1604 and Luke remarried Elizabeth Percevall, who would go on to survive him. The marriage did not last a decade, with Luke composing his will and testament on 18 March 1612 and probate being granted to Phebe on 5 May the following year. Phebe inherited 'towe houses [...] on the merchant key', 'the house in the Castell streat' with 'all the furniture impelments stuff & utensils [...] as also the new gallery added this last year', 'the newe house', 'the farme in Ballegalls' and, finally, her father left her 'all my books except thes folloing which I shal dispose by legacy'.[70]

Luke's daughter Phebe was made the 'sole executrix & administratrix' of his will and testament.[71] Because of this it is suggested by a Challoner family website that Phebe was responsible for the commissioning of the monumental memorial brass for her

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[70] White 1927, pp. 22-23.
[71] White 1927, p. 24.

father, mother, and siblings.[72] Today, this monument, can be found placed in the smallest graveyard of Dublin, but has borne the brunt of time. The funeral brass was noticed in 1680 by Thomas Dingley, a visiting antiquary, whose works include a useful drawing of the tomb, containing the effigy of Luke Challoner, seen below.[73] The Latin inscription says 'Conditur hoc tumulo Chaloneri triste cadaver / Caijus ope et precibus conditur ista domus obiit xxvii aprilis / Anno Domini M D.C XIII'; the translation would be 'Hidden in this tomb, the sad corpse of Chaloner remains, whose helping hand and prayers helped build this house. He died April 27th of the year 1613'.[74]
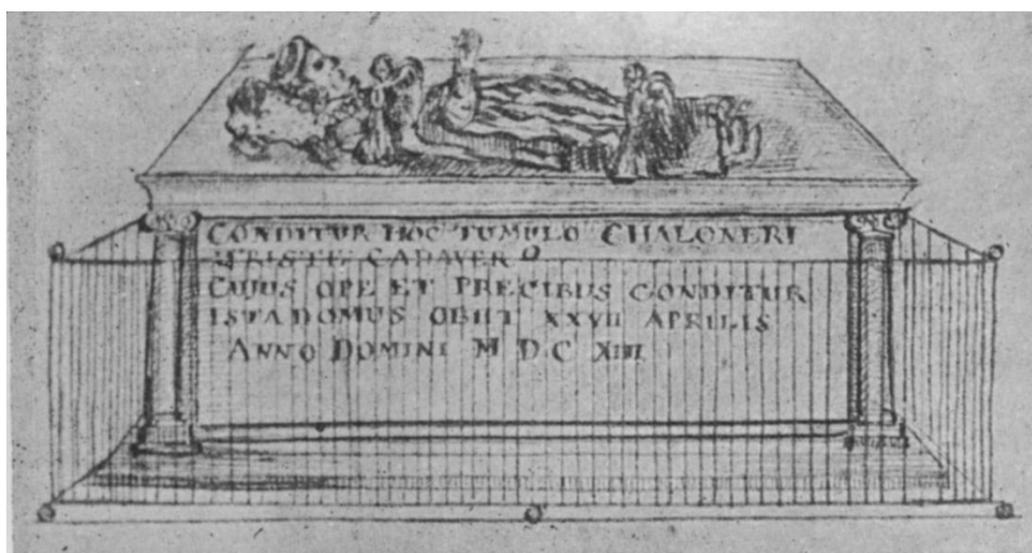
Figure II.3.7: Drawing of funerary monument of Luke Challoner, made by Thomas Dingely, 1680. (image taken from http://challonerfamilyireland.wordpress.com/luke-challoner)

Despite being an unmarried woman, then, Phebe was endowed with a large amount of responsibility over her father's properties and his book collection. Several volumes were bequeathed to leave the collection, such as the twenty books for Phebe's stepmother. Luke Challoner specified that the choice of these books would be determined by both Phebe and her stepmother. This seems to be a tendency in the whole of the testament. For instance, in another case concerning the library, Phebe had to agree with James Ussher who gets which Latin books. By setting such a proviso, Challoner's will, willingly or unwillingly, facilitated future contact between his daughter and James Ussher. According to Richard Parr, an early biographer of James Ussher, Phebe 'punctually obeyed' her father's recommendations on his deathbed. He would have wanted to see a

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[72] http://challonerfamilyireland.wordpress.com/luke-challoner/
[73] http://challonerfamilyireland.wordpress.com/luke-challoner/
[74] The inscription is taken and from figure II.3.3., the translation is mine.

marriage between both concluded before he died, but this did not come true and thus 'he charged her upon his Death-bed, that if Dr. Usher would marry her, she should think of no other person for a Husband', advice that would be fulfilled not long after, in 1614/1615.[75] This image of a father-loving daughter, lovingly obeying deathbed commands, might be a matter of narrative.

There is enough proof to suggest that Phebe and James were on good terms in the years prior to their marriage. In 1610, Phebe lent a book to Ambrose Ussher, and James Ussher was listed as the person to return the book to Challoner. This list of lended books makes part of Luke Challenor's catalogue TCD MS 357.[76] In a letter from James Ussher to Luke Challoner on 11 November 1612, written from London, James makes his greetings to Phebe, and a third instance where the two were likely in touch was probably in the passing of the heraldic volume, item EE.k.19. As mentioned before, in 1608, this volume, which contains Phebe's signature, was part of Ussher's collection. What is remarkable is that Phebe signed with her maiden name. Conventionally, women adopted their husband's name after marriage, which is accepted in this thesis as an early modern truth. In this case Phebe would have signed the volume between 1608, the moment when it was registered as part of Ussher's collection, and 1614/1615, the moment when she was married.

4.2.1 The Ussher couple

In scholarship it has been accepted that James and Phebe would have married shortly after Luke Challoner's death in 1614. Richard Parr reports that Phebe had been James' wife for about forty years, and later on he states that she died about eighteen months before Ussher's death. James Ussher died in the year 1656, so calculating back the year 1614 would seem to be suitable, but likewise, 1615 could be a possible date for marriage. I found an interesting post scriptum to a draft letter of James Ussher to Dr. Arnold Boats. The letter is not dated and it is a rather sloppy document, but concludes with a post scriptum from James that he underlined, saying: 'J. married an.° 1615 post Apr. 14'.[77] The inscription is remarkable for several reasons. It seems to be in James Ussher's handwriting, but the content seems impersonal considering he would be referring to his

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[75] Parr 1686, p. 14.
[76] Dublin, TCD MS 357, fol. 8v. This will be discussed further on.
[77] Dublin, TCD MS 454, fol. 200v.

own marriage, rather that he is referred to merely as 'J.' and the text does not contain the precise date of his wedding, rather that it took place 'after' 14 April 1615. The key to understanding might lie in the writing, perhaps being indicative of a more formal means of introducing a marriage used in certain circles, or, for instance, when personal matters were not being readily discussed in a letter.[78]

The information about J's marriage in a draft letter is worth considering. The precise date could be relevant when considering a woman's personal library: in the case of Phebe, her personal library, meaning that library that was separate from her future husband's and from her father's. Phebe would have her personal library starting from 1613-1615. This period in documents has the potential to keep information about Phebe as an individual standing separate from her future husband and her father. After considering the results of my research, I concluded that Phebe has always been an active consumer of books. This means that both partners, Phebe and James, were active book consumers, already before their marriage, already as young people.

4.2.2 Books of Phebe Challoner

Phebe Challoner's collection is now subsumed in James Ussher's own collection housed in the Long Room of TCD. Other parts might have gone to the Bodleian library and this is another area of research. As a result of my days spent in TCD studying over two hundred twenty-five printed books, and several manuscripts, I have identified a nucleus of seven books containing Phebe's signature. And there is further evidence of other books used and owned by Phebe.[79]

Amongst the TCD books there is a large portion that belonged exclusively to Phebe for some period of time. For a start, all those books that belonged to Luke Challoner at the time of his death went to Phebe and remained hers until her marriage. Among this collection Phebe left her signature in at least 6 volumes. She put her signature over her father's, who usually signed his books with 'L Challeneri' or 'L

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[78] Unfortunately I cannot provide the current study with a picture, but I have carefully examined James Ussher's handwriting in different occasions, being his letters, his scribbles and annotations in books and in his catalogues. This draft letter is marked by the same style as all his other writings, which is recognizable at the minuscule small letters. I have discussed my findings with Dr. Jack Cunningham, who gave positive feedback and to whom I owe thanks. Dr Cunningham is a church historian at Bishop Grosseteste University; he published on James Ussher: Cunningham, Jack, *James Ussher and John Bramhall: The Theology and Politics of Two Irish Ecclesiastics of the Seventeenth Century* (Aldershot: Ashgate Publishing, 2006).
[79] For a schematic overview see appendix 4.

Challoneri'; Phebe would turn the 'L' from Luke into a 'P'. She would proceed according to the space left between the 'L/P' and 'Challoneri', adding either a 'Phe' or 'Phebe' in front of the family name. There are many other books that belonged to Luke Challoner that were left unsigned. In these particular volumes Phebe seems to be silent as well. Phebe seems to be quite straightforward in the signing of this specific category of books. Of the books she inherited from her father, she signed the ones he signed, making use of his signature.[80] This double signature is always positioned in the upper margin of the title page of the first book of a volume.

There are other shared characteristics between the books bearing Phebe's signature. All the signed books are English and they are printed 1570s and 1580s. Luke Challoner did not sign all of his English volumes of those years, and of the Latin volumes I was able to check none were signed.[81] It is unclear why Luke signed only a very select number of books in his collection. There might be some organisational purpose to it, such as lent books for instance. Apart from this, five of the six volumes have a very similar binding and treatment of paper, a feature that is very frequent in the collection. The volume that has a different binding has its original binding, which I will discuss later on. The five volumes have a calf binding with dark sprinkles, and the edges of the panels are embellished with a leaf motif. The book blocks have a very similar visual aspect. The leaf-edges are sprinkled with the colours red and blue. These are all rebindings of the second half of the seventeenth century and show signs of being the library bindings of TCD at that time. The shelf mark would be gilded on the back of the book, but this information is mostly lost today. Two more volumes that I associate with Phebe correspond to these material features. One of these books was definitely an Ussher volume because it was printed long after Challoner died, confirming that these bindings date from around or after the 1660s, when the Usshers' collection joined TCD.[82]

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[80] These six volumes represent 2,73 % of the total volumes that I studied. It is rather difficult to distinguish Luke Challenor's volumes in Ussher's collection. The manuscript lists of Challenor's books in MS 357 offers material to compare the actual Ussher collection with the parts that belonged to Challenor. However, often both men had the same books, and, in many cases, the author is given in his list without a title. The collection keeps more books of that same author. In these cases it is particularly unclear which volumes belonged to Challenor before they belonged to Phebe and then Ussher. One can get an idea of his interest, but calculating percentage-wise how many books I have seen that belonged to Challenor is impossible.
[81] My research focussed mainly on books in English or about certain topics such as heraldry and art. Books in Latin appeared among my selection, but form a minority.
[82] Confirmed by the librarian of TCD.

Among those volumes that contain the double signature of Luke and Phebe Challoner is item BB.h.31, *A Hundred Sermons upon the Apocalipse of Iesu Christ*. It was printed in London by John Daye, 'dwellyng over Aldersgate', in 1573. The double signature is partly lost by the cropping of the pages, but it is still identifiable. The book was read by James Ussher, who left a few marginal notes. Item BB.ii.48 contains two books: *A Confutation of monstrous and horrible heresies* (1579) and *The Pope Confuted. The Holy and Apostolique Church Confuting the Pope* (1580). An earlier shelf mark on the book block is quite remarkable: 'H. 5 5' has been written upside down, meaning that the book would have been preserved with its back to the wall and with the text up side down, a common practice at the time. There are other signs of things being written on the book block, but they have become rather unclear. This is the volume with the double signature that has its presumably original binding. The centrepieces of both panels of the binding contain the profile portrait of a lady. The inside of the binding uses paper from an old manuscript that uses blue and red ink for its initials.

Figure II.3.8: Material feature of item BB.ii.48: portrait of a lady.

Figure II.3.9: Material feature of item BB.ii.48: inside of the binding, using older manuscript fragments.

Here I will list the volumes that contain Phebe's signature: 1) Item CC.l.57 has one book entitled *A Faithfull and Familiar Exposition upon the Prayer of Our Lorde Iesus Christ* (1582). The double signature suffered from cropping only slightly. 2) Item CC.l.29 contains the book *Master Bezaes Sermons upon the Three First Chapters of the Canticle of Canticles* (1587). This is another volume with the clearly legible double signature that enjoyed the specific attention of James Ussher. The volume is filled with marginal notes and the marking system which is typically for Ussher. 3) Item BB.n.7 contains the book *A Profitable Exposition of the Lords Prayer, by Way of Questions and Answers for most playnnes* (1588). It was signed by an earlier user with the initials 'R.S.', who is yet to be identified. 4) Item BB.kk.19 contains the book *The Summe of the Conference Betweene Iohn Rainoldes and Iohn Hart* (1588), and was probably used by another, maybe earlier reader than Challoner, Phebe, or Ussher. There is an inscription of an unknown hand on the final leaf of the book. Ussher left some marginal notes. The title page contains an earlier shelf mark 'A:5:66' which still has to be verified.

Figure II.3.10: A clear example of the double signature of Luke and Phebe Challenor, on the title page of *A Confutation of monstrous and horrible heresies* **(1579), item BB.ii.48.**
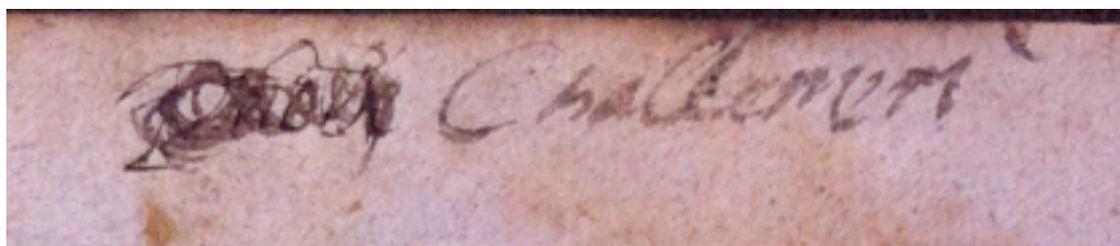

Figure II.3.11: A less clear example of the double signature of Luke and Phebe Challenor, on the title page of *The Summe of the Conference Betweene Iohn Rainoldes and Iohn Hart* **(1588), item BB.kk.19.**

The majority of these volumes show signs of being used by readers before Challoner, Phebe, or Ussher. Different types of shelf marks in books provide such strong indications. In these cases, previous owners remain unknown, unless when they left their full name. This means that most of the books Luke Challenor purchased were second-hand, although it is unknown when he acquired these books printed during the 1570s and 1580s.

The TCD collection keeps a little book with the title *A Closet for Ladies and Gentlewomen. Or, the Art of Preserving, Conserving, and Candying* (1611). The volume appears in Ussher's full catalogue of 1666, meaning that it was part of his collection at the time of his death.[83] Considering the nature of this book, being for ladies, it is very likely that this copy belonged to Phebe.[84] It seemed to be a book with great printing success; it had editions in 1608, 1611, 1614, 1618, 1624, 1627, 1630, 1632, 1635, 1636, 1641, 1644, 1647, 1651, and 1656. There are two more books that contained larger parts of *A Closet for Ladies and Gentlewomen*. Both *The Ladies Cabinet Opened* (1639) and *The Ladies Cabinet Enlarged and Opened* (1654) contained elements of the earlier text. Often this work is ascribed to Sir Hugh Plat, because he published similar topics such as *Delight for Ladies* (1602). Also, both volumes are often bound together.[85] It is very likely that in 1611 or shortly thereafter, a young eligible Phebe would have shown interest in what a lady would need in order to become a proper housewife.

There is a final book title of Phebe's personal collection known through a marginal note in one of Luke Challoner's notebooks. On the back of a page with lists of borrowed books abroad from 1601, Luke wrote the following declaration in name of Ambrose Ussher: 'I promise to restore Scapula to P. Challenor at Mr. James Usshers comming'. The declaration is signed by Ambrose Ussher himself. Scapula is the Latin word for shoulder, but Ambrose Ussher probably didn't borrow an anatomic part; Phebe was probably not a bone collector. Scapula was the name of an author, which was used to refer to the book *Lexicon Graeco-latinum* of Johannes Scapula. A copy of this book appears in Luke Challenor's list of language books.[86]

Two questions remain concerning the Scapula copy of Phebe. The first question that remains is whether Luke Challenor included Phebe's books in his catalogue or not, and also if there was one or more copies of the same book in the collection. The second

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[83] Dublin, TCD MS 6.

[84] In the 1606 catalogue of books bought in England by James Ussher, there is a book called *The Jewel of Health* (4°). I didn't find a publication that corresponds to this title.

[85] Holloway 2011, p. 11.

[86] Dublin, TCD Ms 357, fol. 5r.

question is whether Phebe's copy of the Scapula is still present at TCD. Currently TCD contains more copies of this book title, one of them is from 1609, which could be Phebe's copy. In fact, there is a pencil note in the margins of this precise copy. Precisely on the page that contains the information about Phebe lending a book to Ambrose Ussher, saying '1610 May'. This note might have been made much later; it looks a lot like a library pencil note, but earlier librarians might have had information missing today. Item 21.W.52, the Scapula version of 1609, used to be catalogued as XX.cc.31. The XX books are Ussher books that were conserved in a special room for student consultation, once the Long Room no longer functioned as a reading room during the 1970s. In fact, this item has been restored relatively recently, yet more recent signs of use, such as several damaged leaves, remain apparent. Unfortunately a signature on the title page has been removed and is illegible. It is very likely that item 21.W.52 is Phebe's Scapula, but it cannot be confirmed with certainty.

I was able to establish a list of seven books that contain Phebe's signature. I also was able to establish more books that were part of Phebe's library. It is quite certain that within the boundaries of a larger project, involving TCD, the Dublin archives, and the Bodleian Library Oxford, more books might be counted to the personal library of Phebe Challoner, individuating books she actually owned and used.

4.2.3 Reader profile of Phebe Challoner

Based on this nucleus of books I will discuss Phebe's reader profile, starting with the question whether she could read and write. Literacy comes in various degrees and women, even noblewomen, did not necessarily benefit from an education, but nevertheless, considering Phebe's environment and circumstances, one could assume Phebe could read and write. There is also proof to sustain this assumption. A letter from James Ussher to his daughter, Elizabeth Tyrrell, written in London on July 27th 1654, gives insight in this matter. James concludes his letter to his daughter with a post scriptum: 'Your mother's writings are in my cousin Arthur Trevor's custody'. In this letter lies the testimony that Phebe wrote letters destined to her daughter, meaning that she could write. In early modern England writing was taught after reading.[87] This

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[87] Bland 2010, pp. 84-96; Brayman Hackel 2005, p. 57; Housten 2002, p. 142.

probably applies to Phebe as well, who was likely taught how to read and write at a young age. Her signature as an unmarried lady sustains this hypothesis.

Concerning Phebe's reader profile, I was able to attribute books to Phebe mainly through two ways. The first being through a double signature. The signature of Phebe overlaps the one of her father Luke. This overlap might be seen as the recycling of an old signature and clearly indicates a transit from one person to the other described in Luke Challoner's will and testament.[88] It is completely unknown if Phebe had interest in reading these books aside from confirming her property. The precise works are all of theological interest. The property of some books is not only confirmed by the signature, but often by Luke's catalogue.

The second group of books linked to Phebe Challenor has different reasons for this attribution of ownership, either by signature, textual reference or nature of the subject. Phebe was probably interested in a broad range of subjects. Her ownership of Scapula indicates that she was likely studying Greek, and given that the *Lexicon Graeco-latinum* was written in Latin, Phebe had presumably mastered Latin as well. In this case Phebe would have known at least three languages: English, Latin, and Greek. Phebe had interest in practical information about domestic arts and domestic medicine. Finally, her interest extends to heraldry and/or art production. Of these three volumes, containing five books, I conclude that she had broad interests, from highly scholarly subjects to works with daily wisdom and practical value.

4.2.4 Heraldic and artistic knowledge for James Ussher

Before Phebe and James Ussher got married, they probably shared similar interests, among which heraldry surely was one. In Ussher's list of books bought in England in 1606, there appears the 'book of the armes of the Gentrye of Ireland', which I was not able to trace.[89] In his catalogue of 1608 there are many more heraldic books. A very well known and popular contemporary book is the 'The Gentleman Academye, or the book of S-Albans, compiled by Juliana Barnes, an° 1486 of Hawking; Hunting; and Armorye. Lond. 1595 4°'.[90] The book of Saint Albans contains three essays, one of which addresses heraldry. Again, I did not find it in the collection. Also, there is 'The Armes of diverse

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[88] The will and testament of Luke Challoner are published in White 1927, pp. 22-24.
[89] Dublin, TCD Ms 790, fol. 49v.
[90] Quote taken from Dublin, TCD Ms 793, fol. 182r.

Kings, Dukes and Earls, and an Alphabet of the armes of the principall familyes in the low countries. sett owt by John Hautte; at Gant. 1567'.[91] Also this book does not appear in the collection. Further there are 'Two bookes of blason, in Frenche, printed at Paris 8°'.[92] These most probably are *Le blason des armoires* (1581) and *De la primitive institution des roys, herauldz, & poursuivants d'armes* (1555). Finally, the list contains the volume with Phebe's proper signature, which is the volume containing two heraldic works, Gerard Legh's *The Accedens of Armory* (1576) and John Bossewell's *Workes of Armorie* (1572), and the recipe book *A Very Proper Treatise* (1581), which prescribes artistic procedures with heraldic interest.[93]

Apart from books found in the early catalogues of Ussher, there is another work concerning art and heraldry belonging to his collection. Item EE.l.34 contains three works of Henry Peacham: *The Complete Gentleman* (1622), *The Art of Drawing* (1607), and *Graphice* (1612). Ussher's pressmark in this volume has been lost, but tits former presence is known thanks to a library annotation on the flyleaf. The volume was bound in or after 1622, the year in which the youngest of the three books was first published by Richard Grosvenor (1585–1645), the owner of this volume before James Ussher.[94] Ussher bought this volume after 1622, because the three titles are listed on the first fly leave in the handwriting of Grosvener.[95] During his lifetime James Ussher acquired several books with heraldic and artistic interest, which demonstrates a modest but stable interest in the topic.

4.2.5 Consumption: artistic interest in heraldic books

For this part I will rely on findings gleaned from TCD items EE.k.19 and EE.l.34, both of which are volumes containing multiple texts concerning heraldry and art. Both have been in James Ussher's collection, and at least one has been in Phebe's personal collection. While it likely that Phebe used the publications of Peacham, there is little to no material evidence to prove it. Instead we must rely on the content, which displays a common thread, alongside which we can identify some common physical features of use. Both volumes have traces of paint left on visual imagery of one of the title pages. Two

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[91] Dublin, TCD Ms 793, fol. 183v.
[92] Quote taken from Dublin, TCD Ms 793, fol. 184r.
[93] Dublin, TCD Ms 793, fol. 184r.
[94] Cust 2004.
[95] His library and or other goods might have been sold in these years to pay the depts. Cf. Cust 2004.

shields depicted on the frontispiece of *The Accedens of Armory* are marked with a yellow paint, although one is only partly painted; whereas the bird on the title page of *The Art of Drawing* has a spot of blue paint added. There is a difference in the intention of these paints. The yellow has been used in a precise fashion; the colouring is quite neat. Contrarily, the blue seems to have been applied with a single stroke of the brush. In *The Complete Gentleman* there are three coats of arms all of which have been painted with black, but the discovery of paint in heraldic texts is more commonplace.

Another feature that the two volumes have in common is the reader's interest in image transfer, of which we can find three different examples utilised across the different volumes. *Workes of Armorie* contains two kinds of image transfers. The coat of arms on folio 79v with 'the virgin Marie, with her chylde, standing in the sonne', has been marked with a grid drawn over the coat of arms. This grid is numbered horizontally and vertically, mimicking a system used by artists to transpose an image to another surface, and allowing the artists to scale the image up or down.

Figure II.3.12: *Workes of Armorie, 1572,* **TCD, a grid for copying a model, detail of fol. 79v. (Appendix 2, bound to no. 13)**

The second image transfer process appears to have involved the application of oil or another solvent. Through the burnishing of the paper with printers' ink soaked in oil and pressing it to another surface, the image is reproduced. This procedure can be repeated several times, although the image will become weaker each time. In contemporary terms, this was referred to as a ghost image. Examining the images in *Workes of Armorie*, all of those with oil-like stains are 'ghostlike' – the ink of those images is darker and better defined than the ink of the adjacent text. Further, apart from in one instance, the stain covers an image completely. When the stain covers text, the ink of the text loses little of its intensity. Figure II.3.12 shows an example of this kind of image transfer, that the user or users of TCD volume EE.k.19 was/were interested in.
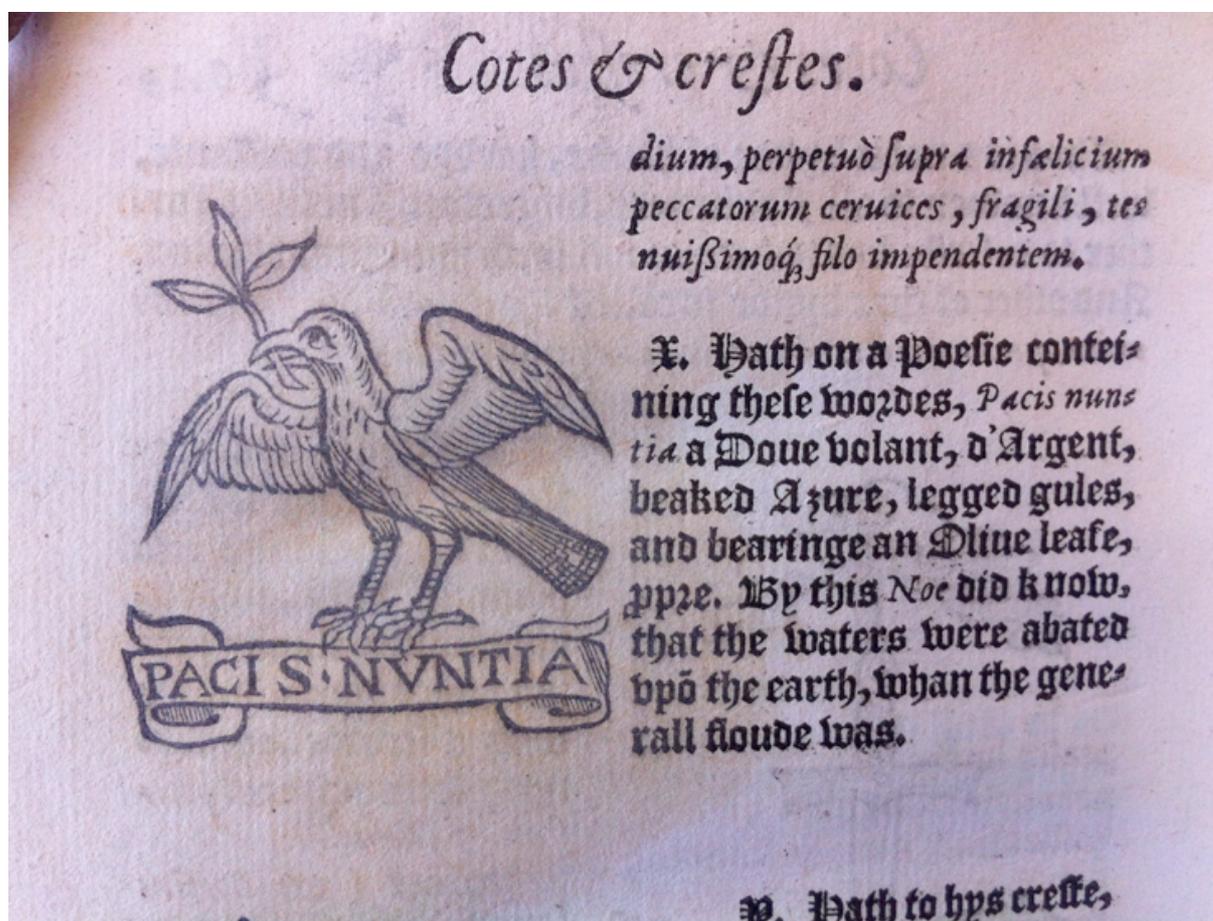
Figure II.3.13: *Workes of Armorie*, 1572, TCD, oil-like stain superposing an image, softening the lines of the image, detail fol. 29v (Appendix 2, bound to no. 13)

The third method of transferring images apparent is bytaking the image to a window or other illuminating surface and tracing the image on the backside of the paper. In the case of the bird on the title page of *The Art of Drawing,* the tracing happened on

the back of the paper. This technique can be used to obtain a mirrored image, or when two papers are kept together, to transfer the image.

Figures II.3.14 and II.3.15: *The Art of Drawing*, **1607, TCD, item EE.l.34.2, front and back of the title page.**

A Very Proper Treatise opens the procedures for limning or book painting with:
> 'The order of drawing or tracing. First thou shalte with a pencell of blacke lead, or with a cole made sharpe at the poynte trace all thy letters, and sett thy vinetts or flowers, and then thy imagery yf *thy* wilt make any. And the*n* shalt thou w*ith* a small pen drawe al *thy* hast portred, the*n* make thy sise on this wise'.[96]

Here there are two terms used to describe the action of creating an image: tracing and drawing. In the OED tracing has two suitable meanings, it means either 'to draw; to draw an outline or figure or; also, to put down in writing, to pen', which comes from the

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[96] Anonymous 1573, fol. 2r.

French verb 'tracier'. The second meaning given for tracing is 'to copy (a drawing, plan, etc.) by following the lines of the original drawing on a transparent sheet placed upon it; to make a tracing of'.[97] This last meaning is the kind of tracing used in *The Art of Drawing* to reproduce the bird of the title page.

A Very Proper Treatise gives lengthy advice on how to proceed when first creating an image. For letter forms, the user is advised to trace. So far it is unclear to me whether the use of tracing is used because letters are associated with writing or whether they might use standard patterns or models for letter forms. One of my findings from the University of Glasgow might sustain the use of model books for the creation of letters in book painting. A model book made in 1578, of the limner and possibly scribe Guilielmus Middelborch, contains numerous copies of letter forms.[98] Using model books containing infinite variations on visual imagery was common practice.

Among the heraldic-artistic bindings EE.k.19 and EE.l.34 of TCD, there are textual and material elements that connect artistic production to heraldic interests. It is unknown whether Phebe Challoner, or her husband James Ussher, made any of the interactions with the volumes, but certainly these volumes made part of their library.

4.2.6 Artistic and practical interest in A Very Proper Treatise

One of the questions about the public I wanted to answer in this thesis is whether interest was directed towards recipes concerning art or, conversely, towards knowledge of heraldry. I can now respond to this question in two ways. Through biographical research, one can discover a lot about the life and interests of early modern people. The person who owned the British Library copy of 1581[99], Sir William Le Neve, was a herald. John Aubrey, owner of the Ashmole copy[100], was also skilled in the arts, leaving many drawings, watercolour paintings, and sketches. It is quite possible that Aubrey maintained an interest in heraldry. He was part of a network that included many heralds and other owners of *A Very Proper Treatise* such as John Aubrey, who was in contact with Elias Ashmole (1617–1692) and William Dugdale (1605–1686). Elias Ashmole, the founder of the Oxford's Ashmolean museum, was both a herald and an antiquary, and was the son-

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[97] OED.
[98] The model book makes part of the Glasgow binding containing *A Very Proper Treatise*, see appendix 2, no. 4.
[99] Appendix 2, no. 14.
[100] Appendix 2, no. 19.

in-law of William Dugdale, also herald and antiquary.[101] To this circle I can add Brian Twyne from Oxford and James Ussher who also resided in both Oxford and London for a time.[102] It is quite possible that James Ussher and Richard Neile, the brother of William, also knew each other, having both occupied the position of archbishop.[103]

The Dublin volume EE.k.19[104] containing *A Very Proper Treatise* is in my research the most interesting early modern volume that unites artistic and heraldic interest connected to the book title of interest. However in lesser degree of interest, there are other copies of *A Very Proper Treatise* containing similar signs. Two of the examined copies contain stains of paint or brushstrokes on at least one of the pages of *A Very Proper Treatise* itself. The Bodleian copy of 1573 contains reddish and brownish and some hints of green.[105] Plenty of copies have stains. Here an interesting ink stain might be noted, as a dirty finger must have turned pages and left its mark on two pages.[106] Even though the booklet has several ink recipes, ink stains are common to early modern books in general. The Birmingham copy of 1596 contains the clearest signs of paint use.[107] Thick brown brushstrokes are found on the title page; they served as a kind of *probatio pennae* or pen trial of the paintbrush. One of the strokes fills in one of the printed floral motifs.[108] Another one, the 1583 copy of the Bodleian contains very vague and small stains of a red watercolour on the book block and also on the front page of *A Profitable Boke*, which was bound together to *A Very Proper Treatise*.[109] These red paint traces are due to the sprinkling of book blocs, a later habit. A small number of copies contain the actual use of paint in *A Very Proper Treatise*. The content of the book details precisely how to make paint. However, as shown in the previous part, the exact colouring and transporting of models is more applied to heraldic volumes, which still falls under the interest of *A Very Proper Treatise*.

Another question in this study broaches two topics at once. I have been looking for indications whether the recipes included in *A Very Proper Treatise* were actually routinely put into practice. If so, then it means that there is an artistic interest in the volume and also, that the volume contains effective practical knowledge. Here I will

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[101] Hunter 2006.
[102] Gibson 1940, pp. 94-112; Wright 1889, pp. 88-91; McCafferty 2013.
[103] A possible connection between Ussher and Neile still has to be verified.
[104] Appendix 2, no. 13.
[105] Appendix 2, no. 9, fols 5v, 7r, and 9r.
[106] Appendix 2, no. 9, stain on margin of fol. 8v, and partially, in the margin of fol. 9v.
[107] Appendix 2, no. 28.
[108] Appendix 2, no. 28, fol. 1r.
[109] Bound to appendix 2, no. 19.

discuss three instances where an early modern person interacts with a recipe. The first comes from the 1573 Boston copy.[110] The recipe to 'lay golde or silver on sise' contains an extra instruction from the consumer.[111] The procedure proposed is, in short, to cut a piece of gold or silver, wet a brush with the mouth and wet the piece of gold or silver with the pencil. After which it can be applied to the prepared paper. The early modern consumer writes at this point that before you bring it to the paper, presumably, you need to 'lay it on iiii'.[112] After this point in the recipe the information is lost. What is of importance here though is that the consumer had access to other practical knowledge, which he or she added to the current recipe.

The other two cases concern the same recipe 'to make white letters in a blacke field'.[113] In the Yale copy of 1588 the consumer says that this recipe is 'aproved by me', unfortunately part of the inscription has been lost through cropping.[114] In the 1605 British Library copy the consumer judges that this is 'a pretty exercese'.[115] Considering statistics and content of the early modern consumers I conclude that either the recipe, or, alternatively the topic, of white letters upon a black background was a popular one. I found a clear example of a white letter in a black field in MS Sloane 3604, made by Robert Freelove, which has been discussed earlier in the context of the precise practice and techniques to make such figures (Figure II.3.4).[116] Here the relevance for the same case is a consumer has left traces of interactions with the text. The manuscript MS Sloane 3604 contains an example of the letter 'I' figuring Henry VIII.[117] The letter contains the inscription 'Henricus VIII', which is a white inscription against the dark portrait of Hendry VIII. The white letters on a black surface in this case of the Henry VIII initial probably follows a different procedure than described in *A Very Proper Treatise*. The same technique as in folio 9v is used in the illuminated initial on folio 97r. The initial D is of a dark purple and has white writing. This case is not one of white on black surface but on a dark surface, which is the same principle. Robert Freelove practiced a technique to make white letters on a black or dark surface. My response to the questions whether recipes were actually put into practice is a positive one. Based on

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[110] Appendix 2, no. 1.
[111] Unfortunately the exact information has been lost because of the cropping of the margins. Appendix 2, no. 1, fol. 3r.
[112] Appendix 2, no. 1, fol. 3r.
[113] Anonymous 1573, fol. 10r.
[114] Appendix 2, no. 22, fol. 10r.
[115] Appendix 2, no. 35, p. 17.
[116] London, British Library, MS Sloane 3604.
[117] London, British Library, MS Sloane 3604, fol. 14v.

the examples of material culture similar to recipes and reactions to recipes, I conclude that this recipe had the potential to be actually put into practice. This recipe can be used to show that there is an artistic interest in *A Very Proper Treatise*.
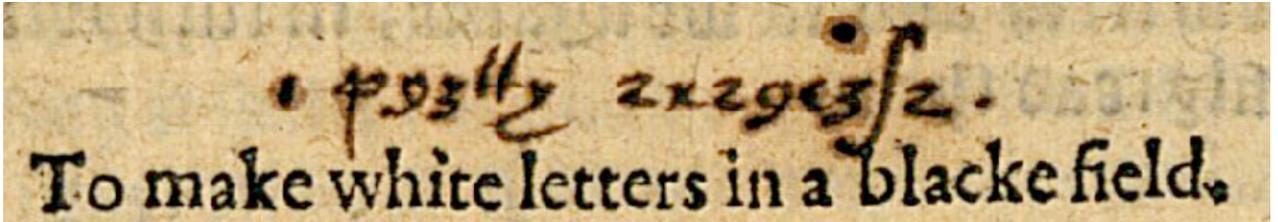

Figure II.3.16: *A Very Proper Treatise*, **1605**, **British Library, detail of page 17. (Appendix 2, no. 35)**

5.   Conclusion

This conclusion aims to create an image of the actual audience of *A Very Proper Treatise*. My search for consumption and consumers of this book was guided by the questions: 'Who used these books?' and 'How were these books used?'. Of the twelve consumers that I have traced, some could be studied in depth whereas others could barely be identified at all. I conclude that for this reason there is no unified image of the public of *A Very Proper Treatise*, because there are more than one consumption profile. There are subjects of all ages, both genders, and with different backgrounds. What does connect a lot of these profiles is the interest in arts and heraldry. Another interest in the book is more connected to books in general than to this recipe book in particular, namely that paper was used to write, with often religious texts. As expected, there existed a clear artistic-heraldic interest in *A Very Proper Treatise*, but interests were certainly not limited to this area alone.

General conclusion

Conclusion

A Story of Practical Knowledge

Here I will draw conclusions on the current PhD thesis that contextualized practical knowledge in early modern Europe. I will summarize my findings concerning the three main topics that were guiding lines during the research, being 1) the creation, 2) the transmission, and 3) the use and public of practical knowledge. These three topics returned in both parts of the thesis. The first part was focussed on practical knowledge in general and it took texts of both manuscript and printed books into examination. The second part applied the three topics in the study of a particular volume, *A Very Proper Treatise* (1573), and took the text of the book and each material copy in examination.

In the first chapter of the first part I have treated the origin of practical knowledge. This chapter served as an introduction to the topic and also to the whole thesis. I frequently used examples of my own research, but also those already known to scholarship. In a first instance in this chapter I went through the premises of practical knowledge in an early modern setting, meaning that I talked about how the various branches within practical knowledge were interrelated and interdependent. After the premises I built a working definition around the term 'practical knowledge'. In this part I broached the various congruent terminologies that have been used in scholarship. My contribution to the field is not only profiling the topic as practical knowledge, I also argue that this is a suitable umbrella term to cover a whole series of terminologies used in other scholarship. The term practical knowledge overarches practice-based knowledge, secret knowledge, technical and technological knowledge, silent or tacit knowledge, useful knowledge, and common knowledge. Offering an encompassing term aids the determining of certain phenomenon and trends in the history of science and history of knowledge. This is especially valid

in the light of new tendencies, which dictate to work interdisciplinary and re-enact early modern practices. Such challenging new angles of research require a theoretical framework, which in this case aims to be overarching. This chapter also theorized instructive literature, taking the recipe as the basic textual unit and working around the form, conventions, and functionality. With these aspects of premises, definition and situation of terminologies, and theorizing of the textual aspect, this chapter reads as a long introduction to the whole of the thesis, but it also respects the structure of the thesis and issues the creation or origin of practical knowledge.

In the second chapter of the first Part I studied the transmission patterns of practical knowledge, building on the rhizome theory, a philosophical concept of Deleuze and Gilles. I applied this theory, using a case study of art technological literature of William Eamon. My merit is to interpret Eamon's work against the theory of Deleuze and Gilles, meaning that I inserted the practical knowledge into this philosophical discourse. Further in this chapter I contextualize the transmission, meaning that I examined writings that testify about learning- and experimenting processes and transmission modes. What is unique in this part of the chapter is that I searched how historical fictional literature can be useful for historical arguments.

In the third chapter of the first part I took interest in the consumers of early modern practical knowledge, and more precisely in the various functions a single user can have. I argued that among the many people that are involved in the transmission of knowledge there is a category of people that is involved professionally in the practical knowledge dissemination. I have named this group mediators. Mediators used print to spread their recipe books. Some of them were practical in the area of interest of practical knowledge, such as medicine. Others were professional writers and collected material with the final scope of publishing. The study and description of this category is important because they are responsible for a multiplication of practical knowledge dissemination, often with national and international dimension. In the previous chapter this knowledge spread through print of art technological knowledge was studied form the textual point of view, with the intention to study transmission patterns. The third chapter of the first part studied the people behind similar dynamics. Both approaches offer a context to practical knowledge in the early modern times.

In the first chapter of the second part I have studied the origin of the text *A Very Proper Treatise* (1573). I studied texts laying at the basis of the printed book and I also studied texts that copied from the book. This uncovers an interesting circulation of texts, which can be associated with the rhizome manifestation, studied in the second chapter of the first part. Within the boundaries of the textual study, I developed the study of the topics 'public' and 'material culture'. Considering the intended public, I have argued that this book offers a case of a double intended

audience, as it appears in two places in the text, presenting two different intended audiences: aiming at the social status of the public or their professional occupation. Further I studied one aspect of the materiality in the text: colours. I have argued that the concept of colours in *A Very Proper Treatise* includes not only colours and pigments to paint, it also included varnishes and ink. My contribution to the field of textual studies of art technological sources exists out of examining this text of anonymous authorship, which I attributed to the printer Richard Tottel in the second chapter of the second part.

In the second chapter of the second part I have studied how this text was turned into a book, this chapter brings the three topics studied in this PhD dissertation together: the origin of practical knowledge, the dissemination of practical knowledge, and the users of practical knowledge. I have argued that this book is a printer's publication. I examined how the printer Richard Tottel adapted the publication to the intended and circumstantial public. By publishing a collection of recipes Tottel made already existing knowledge revive and circulate, which gives him the function of a mediator, a position studied in the third chapter of the first part. I have studied how the text can be devided in two layers, meaning the original text that was later adapted and at the other side, pure additions of the printer. I attribute the parts about heraldry to the work of Richard Tottel. In this chapter I have incorporated the study of the evolution of the six editions of *A Very Proper Treatise*, involving the second printer Thomas Purfoote as well. My contribution to the study of Richard Tottel is examining his approach to publishing practical knowledge, while previous studies have focussed mainly on Tottel's Miscellanies (1557), his law book publications, and Thomas Tusser's *A Hundreth Pointes of Husbandrie* (1557).

In the third chapter of the second part, which is the last chapter of this current PhD dissertation, I have studied the actual public of the book *A Very Proper Treatise*. For this chapter I took every single surviving copy of the book into consideration. I managed to decipher the names of twelve owners of *A Very Proper Treatise*. I have argued that the actual public of *A Very Proper Treatise* was interested in the heraldic side of the work, which, as argued in the second chapter of the second part, is work and intention of Tottel. This corresponds with some of the identified users, who have connections with the heraldic world or have heraldic interests. I also demonstrated that this volume was used, just as other books at that time, for their paper. I demonstrated that one of the things that people wrote in books, came from their religious interests, such as prayers for instance. Further in this chapter I contributed to one of the general questions about practical knowledge, which is: 'Were the recipes actually used?'. I have argued, using evidence left by users, that at least some of the recipes were actually used. Finally, this chapter contains an interesting and extended case study of two of the owners of *A Very Proper Treatise*, being Phebe Challoner and

James Ussher. What is interesting from the point of view of social history is that a binding with heraldic books and a recipe book with art technological knowledge serves as a gift from a young man to a young woman, who later in history get married to one another. In this case *A Very Proper Treatise* served as a token of love. My contribution to the field of book history is the material examination of copies of *A Very Proper Treatise*, which has been unprecedented. Other than this, my study represents is unique in its kind, meaning studying the actual public of art technological literature for a single recipe book.

In what follows I will proceed discussing some arguments that come from various places in the thesis and that are valid for the whole thesis. I have argued that recipe books are composed; they contain fragments of different collections of recipes. This tendency towards fragmentation and re-organization are present in both manuscript and print. My research offers a contribution to the discussion about the relation manuscript – print. It is generally accepted that following the rise of printing, the manuscript production of books declined; in contrast to this, I have argued that the invention of print did not diminish the practice of copying. I have argued, in line with the thought of the 'invention' of print, that this was a remarkably slow process. Further, as the study of *A Very Proper Treatise* (1573) points out, texts that originally existed in manuscript continued to exist in manuscript form, even after the spread of the printed book. Moreover, printed books soon became templates for creating new manuscripts. Those manuscript versions that circulated after the first printed edition, are copied from both manuscript versions and from printed versions of the text. I conclude that the coming of print did not rule out the manuscript production of practical knowledge and furthermore print was instrumental to further manuscript production of practical knowledge.

Throughout the thesis I have illustrated various examples of practical knowledge being transferred from manuscript to manuscript, from manuscript to print, from print to manuscript, and finally, from print to print. There was an infinite variety of ways of transferring information between these four standardized combinations. Obviously oral transmission comes in as well, which makes this scheme more complex and dynamic; and that is the essence of practical knowledge transmission: it is complex. To address this complexity I used, in the second chapter of the first part, the rhizome metaphor of Deleuze and Guattari because it evokes the image of infinite variations and complexity. This metaphor is suggested on a theoretical level and focuses on knowledge transmission between texts. However, wherever there is knowledge transfer, there are people acting.

I have argued that practical knowledge did not travel simply for the sake of knowledge itself. Printed recipe books in particular are associated with writers and printers who needed to

earn their living. The printed recipe books were typically compiled from manuscripts and other printed recipe books, and these products were adapted specifically to make them more suitable to be sold on the early modern book market. This means that the book underwent changes in order to fit the market. The case of *A Very Proper Treatise* (1573) contains several examples of these changes or shifts. The first shift is in the intended public. The source, or sources, lying at the base of the book's title suggest that it was intended for painters and scriveners, and thus treated subjects relevant to their occupation; however, the printer also targeted a new, more general, public, who maintained a non-professional interest in these subjects. The second shift is in the content, as the printer added a heraldic function to the book. The third shift is the making of the book into a consumer-friendly product by adding various indexes that facilitate the consumption of the book's practical knowledge.

This PhD dissertation has also investigated the people who interacted with practical knowledge. I have shed light on the mediating positions for the dissemination, which as said in chapter three of the first part and chapter two of the second part, are taken by writers and printers. I call them the mediators of practical knowledge, because through them practical knowledge finds a broad dissemination process. The other people who interact with practical knowledge form the actual public, or the people writing down recipes and buying recipe books. The study of the material book, with an eye on the actual consumers, brought to light that recipes were actually commonly put into practice. Some marginal notes suggest that recipes were successfully recreated, while other interactions point to more varied results. These are textual and material ways to understand the practical side of textual practical knowledge, which is a prime concern of this PhD dissertation. I have argued in the first chapter of the first part that practical knowledge was based on actual practice. Recipes contain practical knowledge and are per definition executable. However, also in the first chapter of the first part, I argued that some recipes may have be or may have become dysfunctional. This could have various reasons, such as the lack of information, either through problems with copying or because of silent knowledge, which is never explained in texts. Another way how recipes could be dysfunctional is because they are coded or they have symbolical value for instance. Again in this part, I introduce an umbrella term to refer to recipes that cannot be executed: dysfunctional recipes. This overarching term covers all the various terminologies that refer to recipes that do not give the desired result.

Recreating a world remote in time is one of the chief aims of historical research. My research has aimed to put issues about daily life in context. The contextualization of specifically art technological knowledge, serves the scope to get a larger comprehension about the nature of practical knowledge and its working. Unique in this thesis is the case study of a precise book title,

A Very Proper Treatise (1573), which is unprecedented. The historiography surrounding this book is very poor, as discussed in the introduction to the second part. The only study worth mentioning is Susan James' attribution of authorship to Flemish miniature painter Levina Teerlinc. This PhD dissertation takes a complete different angle on the notion of authorship and as a consequence rejects James' conclusions. As seen in the second chapter of the second part, it was the printer Richard Tottel who was responsible for the creation of the book. Other than contributing to the historiography of the discussion of authorship, this PhD has surpassed every earlier ambit of scholarship concerning *A Very Proper Treatise*. Each individual copy of each edition has been taken into consideration and examination. And three of the six chapters in this PhD dissertation take *A Very Proper Treatise* and its context as the central topic.

A Very Proper Treatise* is worth a unique place in the history of books, being the first printed book in its genre in England. Unfortunately though, there is a tendency to study famous authors, leaving anonymously published booklets like *A Very Proper Treatise* aside. This dissertation offered two solutions to this problem. First, it proposed the printer as the initiator of the printed book, not only because he printed it, but also because he was the one collecting and adapting the knowledge in order to prepare it as a publishable and marketable product. This is exactly the point of practical knowledge: knowledge about how to do things does not belong to anybody in particular; it is rarely the exclusive fruit of one person's mind. Practical knowledge builds on previously acquired knowledge, as is the case for *A Very Proper Treatise*, where I have shed light on one significant potential source used for the text: *The art of making*.

Second, the study of *A Very Proper Treatise* is used as a case study for this PhD dissertation on practical knowledge, or, alternatively, this PhD dissertation offers a proper context in which to read and understand a single small anonymous book. This case study individuated the title and studies the three main topics of this PhD dissertation that contextualize the book: the origin, the dissemination, and the users of the book. This involved a textual study in the first chapter of the second part, a historical approach in the second chapter of the second part, and a material study in the third chapter of the second part.

Here I will return to the title of this conclusion, which proffers 'a story of practical knowledge', or a single potential history. Writing history is based on the outcome of research and the selection of data, all of which depends on the sources, research questions, and methods. As such, this PhD dissertation presents a narrative, a *potential* story line; other stories could be told about practical knowledge or about *A Very Proper Treatise*, but the current one is mine.

Epilogue

PhD research should be able to stand on its own, but it should not be isolated from future possibilities. As such, during the three years of work I have gathered minor and larger topics that might be of interesting to pursue at a later date.

Project in art technological sources and practice

A continuation of my current project lies in the question: 'Were recipes actually put to practice?'. In order to give a straightforward answer to this, a systematic search for data is required. In the current project I looked for proof in the books themselves and found indications of recipes being put into action, but for a future project I would propose a different approach and turn to artists rather than to the users of art technological books. The method I propose is to compare or crosscheck recipe books with the known ingredients of paints used in paintings. This project will permit analysis of the status of textual art technological knowledge, the popularity of materials and procedures, and the dynamics and use of art technological knowledge.

The ideal artist to apply this project to would be Peter Paul Rubens. I will conduct a comparative study between his recipe books, proper writings, and other items from his library, or texts that we know he was familiar with, and the results of technical research. The interest in Rubens is no coincidence. He is one of Flanders most studied artists and many institutions could be of use to my research and also benefit from this research. I think especially of Kikirpa (The Royal Institute for Art Patrimony Brussels), Rubenianum (The Antwerp institution that is specialized in art from the Middle Ages until the eighteenth century), and the Royal Museum of Fine Arts of Antwerp (and Brussels).

This research structure and questions could be easily transported to any other painter and his or her sources or to any other kind of artistic field that has primary textual sources about the techniques and materials used and reports of technical research that has been done. This would be

a research format where one would need to 'think big'. Doing this work in a selective way would not be valid, and one could not focus on a single textual source or painting. Instead, I will narrow down in terms of artist or workshop, and one single artist and his or her workshop would be the starting point so that the sources and the technical reports could be examined in their entirety.

Not all artists are eligible for this format. It would be possible to select artists of who is known which textual sources they knew, used or made. Further they must have a body of work. Preferably artists who delivered works of good quality are more subject of technical analysis these days. This is why Rubens or Leonardo are interesting subjects to study, rather than an anonymous painter. The outcome of this research will reflect whether artists really relied on sources of art technological or practical knowledge or not.

Project in reception history and (art) psychology

Another potential project does not share the same research questions as the current PhD dissertation, but it uses the same sources, because a large part of the sources are classified as artistic literature. These are writings about art technology, biography, or theory. In various sources there is a returning figure: Apelles. When I was looking for early modern sources concerning gentlemen and art, I came across Baldassare Castiglione's *Il Cortegiano*, where the reasons for painting's superiority over other artistic disciplines are given, and connected to anecdotes around Apelles. This made me keep my eyes open for instances around this figure in other art literary sources. I found many. What struck me was that plenty of artists were named Apelles, for various reasons. I would like to develop an interdisciplinary research out of this topic. First I would like to see which artists were worthy of the name Apelles (and sometimes other Greek artists as well) and for which reasons. I will look into patterns of name giving (birth name, nick name, honour titles, and many more) and psychology of comparisons. Second, I will study the reception history of Apelles through the name giving and other literary/textual or visual instances (in this last, painters who refer to Apelles in their paintings). The problem of Apelles in particular is very interesting because no material remains were known or are known of this painter. This means that information came to the early modern period only through texts, mainly through Pliny. This also means that the understanding about the visual and material which is based on textual sources is mainly situated in the fantasy or imaginations of people.

Future possibilities based on the current PhD research

There are several topics that are eligible for more research. Part II of the PhD thesis could be enriched by an interpretation of facts seen through institutional history. In particular I indicate the

channels of the Stationers' Company, one of the Livery Companies of London, and the College of Arms. Furthermore some topics could be turned into a study on their own, such as the individual users of practical knowledge, I especially think of Phebe Challoner and Robert Freelove.

Continuation of the contextualization of art technological knowledge

In the niche of art technological treatises or writings there are several printed texts on the early modern market. One of the possibilities is to enlarge the range of book titles and apply individual adapted research questions to each title. The study of multiple copies for other art technological texts gives a larger context for art technological knowledge. So far, art technological knowledge is often investigated through artists' writings, with the side of the consumers often being neglected. Yet another way of continuing this precise topic is to enlarge the range of disciplines and study the work from a chemistry point of view. In this same line I would turn to the putting to practice of the recipes. Already in 2011, William Eamon proposed that the future of practical knowledge research can and should be enriched by more practical investigations.

I must signal that I have considered this for the current project but without adapted environment this can be a dangerous enterprise. I have tried out several cooking recipes of the material that I studied for Part I of the thesis. However, the food domain is a known area for me, which minimises the risks, whereas engaging in experimenting without sufficient background in chemistry might be simply irresponsible. A lot of the recipes for art technological purposes contain potential dangerous components or processes. In a future project where this can be reality, I would necessarily have to collaborate with a specialized department that offers expertise, supervision, and adapted safety measures. This brings me to a possible organizational structure of doing meaningful research in the field of practical knowledge, and that is through interdisciplinary collaborations, with for instance chemistry labs or restoration and conservation studios. Such an approach would signify yet another step closer to practical knowledge and to the daily life of the early modern world.

Appendix

Appendix 1

Various editions of *A Very Proper Treatise*

The first edition (A)

Title:

> A very proper treatise, wherein is briefly sett forthe the arte of Limming, which teacheth the order in drawing & tracing of letters, vinets, flowers, armes and Imagery, & the maner how to make sundry sises or grounds to laye siluer or golde uppon, and how siluer or gold shalbe layed or limned uppon the sise, & the waye to temper golde & siluer and other mettales and diuerse kyndes of colours to write or to limme withall uppon velym, parchement or paper, & howe to lay them upon the worke which thou entendest to make, & howe to vernish yt when thou hast done, with diuerse other thinges very mete & necessary to be knowne to all suche Gentlemenne, and other persones as doe delite in limming, painting or in tricking of armes in their right colors, & therefore a worke very mete to be adioined to the bookes of Armes, neuer put in printe before this time.

Running title:

> The arte of limming

Year of publication:

> 1573

Publisher and place of publication:

> Imprinted at London in Flete strete within temple Barre at the signe of the Hande & Starre by Richard Tottill.

The second edition (B)

Title:

A very proper treatise, wherein is briefly sett forthe the arte of Limming, which teacheth the order in drawing & tracing of letters, vinets, flowers, armes and Imagery, & the maner how to make sundry sises or grounds to laye siluer or golde uppon, and how siluer or gold shalbe layed or limned uppon the sise, & the waye to temper golde & siluer and other mettales and diuerse kyndes of colours to write or to limme withall uppon velym, parchement or paper, & howe to lay them upon the worke which thou entendest to make, & howe to vernish yt when thou hast done, with diuerse other thinges very mete & necessary to be knowne to all suche Gentlemenne, and other persones as doe delite in limming, painting or in tricking of armes in their right colors, & therefore a worke very mete to be adioined to the bookes of Armes, neuer put in printe before this time.

Running title:

The arte of limming

Year of publication:

1581

Publisher and place of publication:

Imprinted at London in Flete strete within temple Barre at the signe of the Hande & Starre by Richard Tottill.

The third edition (C)

Title:

A very proper treatise, wherein is briefly sett forthe the arte of Limming, which teacheth the order in drawing & tracing of letters, vinets, flowers, armes and Imagery, & the maner how to make sundry sises or grounds to laye siluer or golde uppon, and how siluer or gold shalbe layed or limned uppon the sise, & the waye to temper golde & siluer and other mettales and diuerse kyndes of colours to write or to limme withall uppon velym, parchement or paper, & howe to lay them upon the worke which thou entendest to make, & howe to vernish yt when thou hast done, with diuerse other thinges very mete & necessary to be knowne to all suche Gentlemenne, and other persones as doe delite in limming, painting or in tricking of armes in their colors, & therefore a worke very mete to be adioined to the bookes of Armes.

Running title:

The art of Limming

Year of publication:

1583

Publisher and place of publication:

Imprinted at London by Thomas Purfoote, the assigne of Richard Tottill.

The fourth edition (D)

Title:

A very proper treatise, wherein is briefly sett forthe the arte of Limming, which teacheth the order in drawing & tracing of letters, vinets, flowers, armes and Imagery, & the maner how to make sundry sises or grounds to laye siluer or golde uppon, and how siluer or gold shalbe layed or limned uppon the sise, & the waye to temper golde & siluer and other mettales and diuerse kyndes of colours to write or to limme withall uppon velym, parchement or paper, & howe to lay them upon the worke which thou entendest to make, & howe to vernish yt when thou hast done, with diuerse other thinges very mete & necessary to be knowne to all suche Gentlemenne, and other persones as doe delite in limming, painting or in tricking of armes in their colors, & therefore a worke very mete to be adioined to the bookes of Armes.

Running title:

The arte of Limming

Year of publication:

1588

Publisher and place of publication:

Imprinted at London by Thomas Purfoote, the assigne of Richard Tottill.

The fifth edition (E)

Title:

A very proper treatise, wherein is briefly sett forthe the arte of Limming, which teacheth the order in drawing & tracing of letters, vinets, flowers, armes and Imagery, & the maner how to make sundry sises or grounds to laye siluer or golde uppon, and how siluer or gold shalbe layed or limned uppon the sise, & the waye to temper golde & siluer and other mettales and diuerse kyndes of colours to write or to limme withall uppon velym, parchement or paper, & howe to lay them upon the worke which thou entendest to make,

& howe to vernish yt when thou hast done, with diuerse other thinges very mete & necessary to be knowne to all suche Gentlemenne, and other persones as doe delite in limming, painting or in tricking of armes in their colors, & therefore a worke very mete to be adioined to the bookes of Armes.

Running title:

The art of Limming

Year of publication:

1596

Publisher and place of publication:

Imprinted at London by Thomas Purfoot.

The sixth edition (F)

Title:

A proper treatise, wherein is briefly sett forthe the arte of Limming, which teacheth the order in drawing & tracing of letters, vinets, flowers, armes and Imagery, & the maner how to make sundry sises or grounds to laye siluer or golde uppon, and how siluer or gold shalbe layed or limned uppon the sise, & the waye to temper golde & siluer and other mettales and diuerse kyndes of colours to write or to limme withall uppon velym, parchement or paper, & howe to lay them upon the worke which thou entendest to make, & howe to vernish yt when thou hast done, with diuerse other thinges very mete & necessary to be knowne to all suche Gentlemenne, and other persones as doe delite in limming, painting or in tricking of armes in their colors, & therefore a worke very mete to be adioined to the bookes of Armes.

Running title:

The Arte of limming

Year of publication:

1605

Publisher and place of publication:

London. Printed by Thomas Purfoot.

Appendix 2

Physical presence and reproductions of *A*

*Very Proper Treatise*⁶⁵⁶

1573

Boston, Boston Public Library

 1) Q.56.55⁶⁵⁷ [reproduced on archive.org]

Cambridge MA, Harvard University, Houghton Collection

 2) STC 24252, barcode 4484347

Chicago, The Newberry Library

 3) VAULT Case Wing Ricketts W 915 .048

Glasgow, Glasgow University Library

 4) Sp Coll S.M. 1161

London, British Library

 5) 1327.b.1.

 6) 1044.h.38

New Haven, Yale Center for British Art

 7) ND3305 V4 1573

New Haven, Yale University, Beinecke Rare Book and Manuscript Library

 8) Jdf20 573V

Oxford, Bodleian Library, Special collections

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656 Reproductions are added between square brackets.
657 The ESTC reports this copy erroneously as a 1596 copy.

9) Mal. 642 (6) [Society of Scribes and Illuminators 1979]

San Marino CA, The Henry E. Huntington Library

10) Rare Books 60092 [Ann Arbor Microfilm 471:3; EEBO]

Washington, Folger Shakespeare

11) STC 24252 1/24/41

Washington, Library of Congress

12) ND3305 .V4 1573 (Rosenwald Coll.) Rosenwald 1242

1581

Dublin, Trinity College Library

13) EE. K. 19. N°. 3.

London, British Library

14) 1044.h.37

Manchester, Chetham's Library

15) RADCLIFFE 2.F.1.9

San Marino CA, The Henry E. Huntington Library

16) 60087 [Ann Arbor Microfilm 362:1; EEBO]

1583

Liverpool, University Library, Sydney Jones

17) SPEC RYL.N.5.31

London, British Library

18) 1044.h.36

Oxford, Bodleian Library, Special collections

19) Ashm. 1672 (5) [Ann Arbor Microfilm 1611:24; EEBO]

Paris, Bibliothèque National de France

20) V11170-11171

1588

London, Victoria and Albert Museum, National Art Library

 21) 6.D.141

New Haven, Yale Center for British Art

 22) ND3305 V4 1588

New York, Jonathan A. Hill (Bookseller)

 23) Item for sale

New York, Metropolitan Museum of Art, Thomas J. Watson Library

 24) 272.2 V62

Oxford, Bodleian Library

 25) Douce M 397

Princeton NJ, Princeton University

 26) ND3305 .V62

Washington, Folger Shakespeare

 27) STC 24255 6/23/43 [Ann Arbor Microfilm 862:04; EEBO]

1596

Birmingham University Library

 28) Special collections 15.V481

London, British Library

 29) C.31.c.21.

 30) C.31.e.37

Los Angeles, The Getty Research Institute

 31) ND1510.A78 1596 [reproduced on archive.org]

New Haven, Yale University, Beinecke Rare Book and Manuscript Library

 32) Jdf20 573Vd

San Marino CA, The Henry E. Huntington Library

 33) 29605 [Ann Arbor Microfilm 334:11; EEBO]

Washington, Library of Congress

 34) ND3305 .V4 1573 (Rosenwald Coll.) Rosenwald 1242

1605

London, British Library

    35) C.31.c.25 [Ann Arbor Microfilm 1174:4]

Oxford, Corpus Christi

    36) Delt.22.15(4)

Washington, Library of Congress

    37) ND 3305.V4 1605 Rare Bk Coll

Appendix 3

Collation of *A Very Proper Treatise*

The rationale of the collation

This collation intends to be a transcription of the printed text of the various editions of *A Very Proper Treatise*. Therefore, it assembles and illustrates the variations between various editions. In what follows I will explain the criteria that I have followed. First off, I have taken the text of the first edition as the point of departure for this transcription. The variations within other editions are then taken up in the footnotes. These footnotes, that indicate changes, follow a specific procedure. First, the piece of text that is altered in other editions is shown, followed by closing brackets:]. The closing brackets announce the edition or editions with a difference in the form of a capital letter between B and F. The first appendix attributes a letter to each surviving edition. This collation is coherent with the system of the first appendix. After the letter follows the information about differences in the other edition. If more editions contain a difference, more letters after the closing brackets will appear. These letters will be divided with a horizontal dash. If more editions have different information from one another, the different letters with relevant information are separated with a semicolon. Differences are given in italics. Differences in spelling are not recorded, unless the different spelling would signify a different word. Omissions are indicated with the abbreviation 'om.' Additions are indicated with 'add.'. Abbreviations were written fully, using italic to indicate the abbreviated part. Capitals, and the use of 'u' instead of 'v', has been preserved. Signs and embellishing elements are taken up in the footnotes as well. During the text the foliation is taken up in bold, between brackets. This information is anticipated first by the by the signature and the catchword and followed by the running title, all in between brackets.

I will illustrate the system with an example: doe] D *put*. The verb 'doe' is present in the editions A-B-C-F. In edition D it is replaced by 'put'. I would like to use the following example: neuer … time] B-C-D-E-F om. *neuer … time*. The suspension mark indicates that the text is longer, but for economizing reasons it has been left out. So, 'neuer put in printe before this time' or 'neuer…time' only appears in the first edition, in all the subsequent editions, from B until F, it is omitted.

The collation

[fol. 1r][658] A very proper treatise,[659] wherein is briefly sett forthe the arte of Limming, which teacheth the order in drawing & tracing of letters, vinets, flowers, armes and Imagery, & the maner how to make sundry sises or grounds to laye siluer or golde uppon, and how siluer or gold shalbe layed or limned uppon the sise, & the waye to temper golde & siluer and other mettales and diuerse kyndes of colours to write or to limme withall uppon velym, parchement or paper, & howe to lay them upon the worke which thou entendest to make, & howe to vernish yt when thou hast done, with diuerse other thinges very mete & necessary to be knowne to all suche Gentlemenne, and other persones as doe delite in limming, painting or in tricking of armes in their right[660] colors, & therefore a worke very mete to be adioined to the bookes of Armes, neuer put in printe before this time[661]. (:)[662]

Imprinted[663] at London in Flete strete within temple Barre at the signe of the Hande & starre by Richard Tottill.[664]
An. 1573.[665]

Cum[666] Priuilegio.[667]

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[658] E Band vignet in upper margin
[659] A very proper] F om. *very*
[660] Their right colours] C-D-E-F om. *right*
[661] neuer … time] B-C-D-E-F om. *neuer … time*
[662] (:)] B (∵); C-D-E [vignet]; F om.
[663] Imprinted] B-C-D-E ¶ Imprinted
[664] Imprinted at London … Richard] C-D Imprinted at London *by Thomas Purfoote, the assigne of* Richard Tottill; E Imprinted at London *by Thomas Purfoot*; F *London Printed by Thomas Purfoot.*
[665] An. 1573] B *An. 1581*; C *1583*; D *1588*; E *1596*; F *1605*
[666] Cum] B ¶ Cum
[667] Cum priuilegio] E om. *cum priuilegio*

The[670] order of drawing or tracing.

First[671] thou shalte with a pencell of blacke lead, or with a cole made sharpe at the poynte trace all thy letters, and sett thy vinetts or flowers, and then thy imagery yf *thy* wilt make any. And the*n* shalt thou w*ith* a small pen drawe al *thy* hast portred, the*n* make thy sise on this wise

¶ To make a dooble syse or bottome to laye or settle siluer or goulde uppon called an embossed ground.

Take vennys cereuse, white lead, the plaister of an old image or chalke, any of thease made in fine poulder, and the*n* ground with the glayre of an egge and a little water on a painters stone maketh a good bottome to laye under silver. But when you shall use any of them to laye under golde, doe[672] to yt a little saffron therewith to make yt some what yellow. But beware you put not to much water thereto, for then will yt be ouer weake, and yf you doe ouermuch glayre to yt, then will yt be ouer stiffe, therefor minge it after discretion, and looke thy sise be thicke standing, and sett the[673] sise thus tempered & couered in a horne or a shell in some seller or shadowyd place, or under the earthe where it maye sta*n*d moyste by the space of vii[674] daies untill it be perfecte clammy & rotten, & euerye daye once stirre it about, & you shall wel understand that al the sises the elder they be & the more clammy, & rotten they be, the better they be, for all the crafte is in well making & tempering of the sise, and if there stand any belles uppon the sise, put in eare waxe, for it ys a remedy therefore, and before you laye it on your worke, first lay the sise on a scrow [A. ij.][675] [and drye] **[fol. 2v]**[676] [The arte of limming.] and drye it, and when it is drye, bend it, and if it bend, & breake not, then is it good and perfecte, & if it breake put thereto a litle water to make it weaker, and proue if it cleueth fasth to the booke, & if it do not, then put glaire there to, and make it more stedfast. The like sise maye you make with Gipsum boole Armoniake[677], red or yellow okir orpiment or masticot with browne of Spaine or with red leade if euerye of them be ground by him selfe & tempered and ordred in maner & forme aboue written.

¶ To make a thinne sise or bottome to laye or settle siluer or golde upon called a single grounde.

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[668] F Band vignet in upper margin

[669] Fol. ij.] F om. *Fol. ij.*

[670] The] B ¶ The

[671] Initial embellished with floral motives in A-B

[672] doe] D *put*

[673] the] B-C-D-E-F *thy*

[674] vii] F *7.*

[675] A. ij.] F om. *ij.*

[676] F indicates pagenumber 2 in upper left corner.

[677] Gipsum boole Armoniake] C *Gipsum, boole Armoniake*

Take the newe shreds of glouers leather or of newe parchement for that is best, and seeth them in faire water from a quarte to a pinte that the liquor be somewhat thicke and clammie betwene your fingers, then straine the liquor from the shreds, and put it being hote in some stone vessel and soe worke it furth before it be colde, and when you lay en your siluer or golde, see that your syse be nether to moiste nor to drye, but in a meane betwene both for dreade of appayring your worke. The like sise maye you make (without heating them at the fyre) of glue water made of parchement glue for that is best, or with water gummed somewhat thick with gumme arabecke or of good olde glaire, or with the milke of grene figges alone, or with the milke of spourge, or of wartwede, or with the yellowe milke of grene salendine, or with the iuce of garlike or of onyon heades or with the water and grease of snailes. Uppon euery of these maye you laye your leaues of siluer or golde hauinge regarde that your grounde be nether to moyste nor to drye, when you shall laye or settle the same thereuppon.

¶ To laye a dooble syse on letters or vppon other thinges.

[You] **[fol. 3r]** [The arte of limming. Fol iij] You shall with a pencell made of graye amys or calliber tailes laye on thy syse somewhat substancially or if thou wilt first thinne and after thicker, and then drye it, & when it is drye wet it lightely with thy spettle, & then shaue it with a sharpe knife untill it be euen without hilles, and yf there sall any default therein, or else there is more in one place then in another, laye againe thy sise on it, and drye it & engrosse it as is saide before & when it is engrossed & made plaine then burnishe it with the toothe of a calfe, of an oxe, or of an horse that is made therefore standing in a crooked sticke, and when it is burnished and made euen and shining, then is it readye to laye on it thy golde or thy siluer.

¶ To laye golde or siluer on sise.

Firste cut the leaues of golde or siluer in peces with a sharpe knife or a knife made of a great reede uppon a litle borde as broade as a trencher couered with a calues skin raysed or understuffed with wolle or flere or else unstuffed, then shalt thou with a pencell wette lightely on thy mouthe wette thy syse, so it be a litle moyste, and then wette thy pencell again in thy mouthe on the same wise, and touche thy golde or siluer that thou haste cutt by a corner lightelye, and laye it on thy sise, before made a little moyste, and then thou shalt take the taile of an hare, of a conney or a pece of cotton & lightely presse it downe on thy sise, & when thou haste thus done let it drie untill it be wel dried, then burnishe it: for if thou shalt burnishe it wett thou shalt rubbe of all, and when it is well dried, take the taske that thou dosse burnishe with and drye it & beat it well on thy cheke, then burnishe thy golde first softely, and then harder untill it shine, but burnishe it not ouer longe,

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for dreade of apparinge. And when thou hafte well burnished it, then take a white wollen clothe or an [A. iij.]⁶⁷⁸ [hares] **[fol. 3v]⁶⁷⁹** [The arte of limming.] hares foote, and rub all awaye, faue it which cleueth to the sise, & it ther be any place faltie, so that the golde faile for dryenes of the syse, then wett it againe and laye on the golde, & drye it and burnish it as you did before.

¶ To make gumme water to temper colours with all.

Take clene water, & do it in a vessel & put thereto a porcion of gu*m*me Arabacke & let it stand until the gu*m*me be well desolued & molten in the water, but looke it be not ouer thicke of gu*m*me, for then it is euill to worke with, & if it be to thinne of gu*m*me then will the coloure sade & fall of, therefore kepe a meane & temper thy coloures therew*ith*, such as it serueth for best. [Nota.]⁶⁸⁰ Note the best gu*m*me is clere and brittle *that* in stamping it, it becometh pouder easely without clueing together.

¶ To make glaire for the like purpose.

Take the whyie of newe laide egges as many as you thinke good, and straine them throughe a linne*n* clothe to take our the cocke treadings, the*n* put them in a dish and wringe the*n* through a sponge or a white wolle*n* clothe untill they be as thinne as water, then washe the sponge or clothe & drye it. And put the glaire to thuse aforesaide in a stone pott or a glasse faste stopped, and spend it as soone as you can, for yt will not kepe aboue three dayes, but it wil haue an ill sauor excepte they be ordered as foloweth.

¶ To kepe whites of egges as longe as you wil without corrupting or putting of Arsenicke to them.

Take the whites of egges not breaking them in anye wise, but take out the cocketreading, and put to them as much of the best white vineger as shall suffice the qua*n*[tite of] **[fol. 4r]** [The arte of limming. Fol iiij]⁶⁸¹ tite of the whites, leuing it so the space of two daies, then passe it throughe some linnen clothe without breaking or beating the white of the egges leauinge it so the space of viii dayes, then straine it againe and put it in a viall well stopped, to occupie for the purposes aboue writen.

¶ To temper golde or siluer wherewith you may write with a pen or painte with a pencell.

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⁶⁷⁸ A. iij.] F *A 2*
⁶⁷⁹ F indicates pagenumber 4 in upper left corner.
⁶⁸⁰ Nota.] F om. *Nota.*
⁶⁸¹ Fol. iiij] F *5*

[Golde and siluer.][682] Take fiue or fire leaues of beaten golde or siluer, and grinde them well & finely on a painters stone with a litle honnye, then put it into a glasse with a quantitie of faire water, & let it stande one nighte, then draine the water & the honnye afterwarde from the golde, & put to the golde gumme watter, & then write with it, and when it is drye burnish it with an oxe toothe, also if you grinde your leaues of golde with glaire onelye without honnye putting to it you maye well write therewith in adoing to it a little gumme water, & with your gold tempered in manor abouesaide you maye diaper with a small pen or pencell uppon colours. [Diaper.] [Shell golde and shall siluer.][683] If you will buye at the Potecaries shell golde or shellsiluer, with the which (being tempered with gumme watter) you may verye well write a pen, or painte with a pencell.

¶ To temper azure or byze.

[Azure or lighte blewe for armes.][684] Grinde azure or bize on a painters stone with clene water then put it in a broade glasse or in a broade shell, & when it hath stand a while all the dregges will flete aboue, and all the clene coloure will fall to the bottome, then poure out the water with the dregges, & put the azure in clene water againe. Then sturre the coloure & the water together, & let it stand & fine, & after that poure out the water & the dregges againe, and doe thus untill it be well purged & clarified, for the Potecaries minge chalke there[with][685] **[fol. 4v]**[686] [The arte of limming.] with to multiplie it to there profit, but thus you muste do to clarifie it to the first kinde if nede be, then shal you grind it again uppon a painters stone with gummed water, then put it into a horne or a shell, and when you will write or painte. Then sturre it with a sticke, & let the sticke dropp into the pen, for vermelion & this colour will fall to the bottome & sincke as leade.

His false coloure, Two parts azure and one of cereuse and sadded with the same azure or with blacke incke, or with Indebadias.

¶ Howe to make azure and bize sadder yf they be of a lighte coloure.

Take good blewe tournesoll & wet it in gumme water and then writing it, and with that water temper the azure or byze, or else yf thou wilt thou maye with a pencell drawe with thy turnesoll ouer the bize when it is drye whether it be vinet or imagery.

¶ To temper Indebaudies.

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682 Golde and siluer.] F om. *Golde and siluer.*
683 Diaper…siluer] F om. *Diaper…siluer*
684 Azure…armes.] F om. *Azure…armes*
685 F add. *A 3*
686 F indicates pagenumber 6 in upper left corner.

[An Indian blacke.][687] Grinde Indebaudies on a painters stone, with gumme water, & put it in a shell to worke with all.

¶ His false coloure, Two parts Inde, & the thirde parte white lead or cereuse and sadded with the same Inde or with sad Inke Indebaudias of it selfe maketh a darke & sad blacke, but being grounde with white leade or cereuse as is afore saide it maketh a browne blewe. [Browne blewe.][688]

¶ To temper smalte or florrey.

[Blewe colour.][689] Smalte or florrey being tempered in a shell with gumme water maketh a blewe, but not so perfecte a coloure as azure or bize dothe make. The Poticaries doe put to it often times fine sand or chalke to multiplie it to theire pro[fit, there] **[fol. 5r]** [The arte of limming. Fol. v.][690] fit. Therefore in chusing of it, take that which is bright of colour, and not harshe, but softe betwene the fingers.

¶ To temper Orpyment or Masticot for a yellowe.

[A gold yellowe for armes.][691] Grynde Orpyment and Masticot eche by it selfe on a Painters stone with Gumme water, & in gryndinge adde to the Masticot a little Saffron, and the colour wil be the liuelier: and when they be wel ground, put them seuerally in shelles to worke withal.

Orpyment may be elayed with Chalke, and dimmed, that is to lay, sadder, or darked with Oker de Luke, or with Browne of Spaine.

¶ To temper Vermelion.

[A Vermelion redde for armes.][692] Grynde Vermelion on a Painters stone, firste drye, & then do therto a litle glayre of egges, & grinde it againe, untill the brightnesse be fordonne, with a litle of the yelke, and let is stand a day or more, untill it be wel fyned. And when thou dost worke therewith, stirre it well together, and if it be thicke as lyme, doe a little water thereto: and if it shall haue an ill sauour, then put into it three chyues of Saffron, and it will take awaye the euil sente.

His false colour, two parts Vermelion, and the third parte Cerius, and mingle them together, if thou wilt, with the same vermelion.

¶ To temper Turnesoll.

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687 An Indian blacke.] F om. *An Indian blacke.*
688 Browne blewe.] F om. *Browne blewe.*
689 Blewe colour.] F om. *Blewe colour.*
690 Fol. v.] F *7*
691 A gold…armes.] F om. *A gold…armes.*
692 A Vermelion…armes.] F om. *A Vermelion…armes.*

[Turnesoll.][693] Wette Turnesoll once or twice, in good thinne glere and let it lye therein until it be well steeped. Then wringe it into a dishe, until the colour be good & sadde. With this you may florishe redde letters, or vestures. [B. i.][694] [And] **[fol. 5v][695]** [The arte of limming.] And this colour shalbe enewed (that is to say) darked or sadded with blacke ynke.

His false colour, two partes Turnesoll, & one of Cerius, and it shal be sadded with the same Turnesoll.

¶ To temper good Roset.

[Roset color][696] Take the finest & beste coloured Roset, and grinde it with gumme water on a Painters stone, & so worke it forth. This colour may be elayed with chalke or Cerius, and sadded with him selfe.

¶ To temper Brasill wherewith to write, florishe, or rule bookes.

[Brasill,][697] Take Brasil finely scraped, or grossely beaten to poulder, and put thereto the glayre of an egge, or gumme water, and a litle Alam made in poulder, and lett them steepe a night and a day: and then straine out the liquor, and keepe it to the use aforesaid.

¶ To temper good Synapour.

[Bloudy[698] colour.][699] Grind Synapour lake, & Synapour topes ech by him selfe on a Painters stone with good glayre. Then put them in seueral shelles, & worke them forth: and if they be too light, put to them a litle Turnesoll.

His false colour two partes Synapour, and a thirde of Cerius, and laye it on thy Vinettes, and when it is drye, sadde it with good Synapour, and diaper ouer it with white Cerius.

¶ To temper redde Leade.

[Redd leade][700] Grynde redde Leade well with gumme water, and then put it in a shell: and when you worke with it, [stirre] **[fol. 6r]** [The arte of limming. Fo. vi.][701] stirre it as you doe Vermelion.

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693 Turnesoll.] F om. *Turnesoll.*
694 B. i.] C *B.*; D-E *B*; F om. *B. i.*
695 F indicates pagenumber 8 in upper left corner.
696 Roset color] F om. *Roset color*
697 Brasill,] F om. *Brasill,*
698 Bloudy] D *Blood*; E *Blood*
699 Bloudy colour.] F om. *Bloudy colour.*
700 Redd leade] F om. *Redd leade*
701 Fo. vi.] F *9*

Of this you shal make no false color, but of him selfe, and sadde it with Synapour, or with good Browne of Spaine, or with light blacke, or with Vermelion.

¶ To temper blacke Leade.

[Crane colour.]⁷⁰² Grynde well blacke Leade with gumme water on a Painters stone, and then put it in a shell to woorke withal. This is a perfite Crane colour of it selfe.

¶ To temper Browne of Spaine.

Grind good Browne with gumme water on a Painters stone, & when it is very wel ground put it into a shel.

His false color two parts Browne, & the third part of white Leade, & sadded with *the* same sad color of browne.

¶ To temper Oker de Luke & Oker de Rouse, which make browne colours.

[Goodcolours for heare.]⁷⁰³ Oker de Luke, and Oker de Rouce shal firste be seuerally broken in a brasenmorter, & after ground ech by him selfe on a Painters stone with gumme water, & mixed with a little Chalke, and enewed or sadded with good Oker, or with Browne, either of them maketh a good colour for heare on heades, or on beardes.

¶ To temper greene byze-

[Greene Byze.]⁷⁰⁴ Take greene Byze that is soft, and not harth betwene the fingers, for if it be harshe, it is mixte with sande, whiche the Apothecaries do use oftentimes to multiply it to their gaine. And temper it in a shel with gumme water, and it wilbe perfite to worke withall. And when you wirte, stirre this colour as you do Azure, and wash it, and dresse it in forme aforesaide: as you doe yours Azure, before you grinde it with gumme water. [B. ij]⁷⁰⁵ [To]

[fol. 6v]⁷⁰⁶ [The arte of limming.]

¶ To temper Vertgrese, called Spanishe greene.

[An Emeraud greene for armes.]⁷⁰⁷ Take Vertgrese well cleansed and piked from drosse and motes, and grynde it on a Paynters stone first drie, and put thereto a litle of the gall of a Neate, & of the

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⁷⁰² Crane colour.] F om. *Crane colour.*
⁷⁰³ Goodcolours for heare.] F om. *Goodcolours for heare.*
⁷⁰⁴ Greene Byze.] F om. *Greene Byze.*
⁷⁰⁵ B. ij] F *B*
⁷⁰⁶ F indicates pagenumber 10 in upper left corner.

ioyce of Rue, with a litle Safron, & braye all these together on the same stone. Then put it in a horne, or shell until it be dry. And when you wil occupie it, take part thereof and grinde it againe with vineger or vergis, or with the pisse of a yong childe, euery of them hauinge gumme Arabike dissolued in them.

[Light grene][708] His false colour two partes, good greene, & the third of Cerius, and sadded with a good greene, and Diaper ouer it with Vennis Cerius.

¶ To temper Safron.

[Saffron.][709] Steepe Safron in good glayre, and so worke it forthe w*ith* a small pe*n*sel. And if thou wilt thou maist enew it w*ith* good Vermelion, with Safron also you may enewe or florish ouer letters, or any other thing thou wilt.

¶ To temper Vennis Cerius, and white Leade.

[A pure whit for armes.][710] Grynde Cerius, or white Leade, eche by him selfe on a Painters stone, with cleare water, and therewith thou shalt diaper and florishe aboue all thy colours with a purselour made of a small pensell. And this colour is tempered onely with water, or with water lightly chasticed with gumme, for they stand aboue al other colors that be gummed.

¶ To make a Fume blacke called Sable.

[A Sable or blakce for armes.][711] Take a cleane Lattin bason, and holde a burnynge torche under it, until the bottome be blacke: and the*n* [take] **[fol. 7r]** [The arte of limming. Fol. vij][712] take of that blacke, and temper it with glayre, or with gumme water, and so worke with it.

¶ To make an excellent blacke like Veluet.

[A veluet blacke.][713] Take Hartes horne, and burne it to cole on a Coliars harth, then make fine powder thereof, and grinde it on a Painters stone, with the gal of a Neate. Then put it in a shel to drie in a shadowy place. And whe*n* you wil occupye the same, grynde parte thereof againe with the glayre, or with gumme water: and worke it forthe.

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[707] An Emeraud greene for armes.] F om. *An Emeraud greene for armes.*

[708] Light grene] F om. *Light grene*

[709] Saffron.] F om. *Saffron.*

[710] A pure whit for armes.] F om. *A pure whit for armes.*

[711] A Sable or blakce for armes.] F om. *A Sable or blakce for armes.*

[712] Fol. vij] F *11*

[713] A veluet blacke.] F om. *A veluet blacke.*

¶ To make a blacke colour, or an ynke of a good perfection, wherewith you may write with a penne or pensel.

[Black ynke.]⁷¹⁴ Take a pounde and a halfe of rayne water, with three onces of the waightiest galles you can gette. Bruse them in smal pieces, and poure them into the saide water, and so let it stand two daies in the sunne. Then put to it two onces of greene Coporas, or els of Romayne Vitrial, whiche is beste, well coloured and beaten smal: and stirre al these together with a sticke of hard woode, and let it stande againe twoo daies more in the sunne, puttinge to it one once of gumme Arabike, that is clere and bright, and beaten in poulder, and one once of the peeles of Pomergranades, and then boyle al a litle on a slowe fire. That donne, straine it, and keepe it in a vessell of leade or of glasse, and it will be very blacke and perfite good ynke. And if you finde it thicke, and that is bee not flowinge yenoughe, putt to it a litle cleare lye, whiche will make it liquide and thinne. And if it be too cleare, adde to it a litle gumme Arabike. And to have your ynke to continue longe, and not to hore, put therein bay salte. [Nota.]⁷¹⁵ Note that the galles must be smal curled, [B. iij.] [and] **[fol. 7v]⁷¹⁶** [The arte of limming.] and massive within, if they be good. The good Vitriall is alwaies within, of a color like the element. The best gumme is cleare & brittle, that in stampinge it becometh pulder easily, without cleauing together.

[Nota]⁷¹⁷ Thus is taughte the waye howe to temper Goulde, Sylver, and Colours to lymme, or to write withall upon velym, parchement, or paper. That is to say, Vermelion, Turnesoll, Synapour, and Saffron, with good glayre. Syse with glayre chasticed with a portion of water, Azure, Byze, greene Byze, red Leade, roset Smalt, black Leade, Browne, Oker, Orpyment, Masticot, and Indebaudias with gumme water, Vertgrese with vineger, vergys, or with the pisse of a yonge childe, Cerius and white Leade, with cleare water, or with water lightly gummed, Brasil, and Fume blacke with glayre, or with gumme water, which you thinke best for your purpose.

[Nota.]⁷¹⁸ Also there is an other way which is used amongest the excellent sort of Painters, that is, to grind & temper al colors for limming (sauing such as be white) first with the gall of a Neate, & then let them dry, & after when you wil work them, take part therof, & grind it againe with glayre, or with gumme water, as the colour requireth, and so worke it forth. It is said, that water killeth & darkeneth the brightnes of most colors that be tempered therwith. But this gal preferueth the brightnes, & maketh them more liuelier to beholde: which thing experience wil teach you more perfitly.

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⁷¹⁴ Black ynke.] F om. *Black ynke.*
⁷¹⁵ Nota.] E-F om. *Nota.*
⁷¹⁶ F indicates pagenumber 12 in upper left corner.
⁷¹⁷ Nota] F om. *Nota*
⁷¹⁸ Nota.] F om. *Nota.*

[Nota.][719] Note that al colours to limme or to write withal should neuer be tempered with any kind of oyle, for oiles serue most aptly for to temper colors to lay upon stone, timber, yron, lead, coper, & such like. And oyle of Linseed, which is called flare seed, & oyle of walnuts are most used, & be most best of al other oyles for the same purpose.

Also[720] al colors to limme or write withal when they be tempered, would be put in shelles, in vessels of stone, lead or of glasse, & kept under *the* grounde in some seller, or in [some] **[fol. 8r]** [The arte of limminge. Fo viiij][721] some moyst or shadow place, for drying ouer fast: and *the* elder they be the better they be, if they be kept couered from filth & dust. And note t*hat* there is great regard to be had to *the* wel grinding & te*m*pirng of the colours, & to the placing of them upon the worke.

¶ The maner how to florishe or diaper with a pensel ouer siluer or goulde.

If you wil diaper ouer gold, take yellow Oker, & ther with draw ouer thy gold with a pensel what thou wilt.

If thou wilt diaper upo*n* siluer, take Cerius w*ith* a pensel and draw or florish what thou wilt ouer thy siluer.

If thou wilt diaper with gould or siluer upon colors, take the ioyce of garlike, with a pensel drawe ouer thy colours what thou wilt. Then take and lay the gold upon it, and presse it downe lightly with an Hares tayle, & let it dry halfe a day or more. Then rubbe of the golde which cleueth not to the garlike.

¶ The waies howe to make sundry kindes of colours by tempering & mingling of colors together.

[Purple, or Violet colour for armes.][722] If you will temper Azure with Turnesoll, and grinde them together on a Painters stone with gumme water or glayre, you shal make thereof a perfit Purple or a Violet colour. And the like colour you maye make with good redde Roset, if it be mingled with Azure, & tempered with gumme water in maner aforesaide.

[Sanguîne. Or Murrey for armes.][723] If thou wilt put to a good quantity of Synapour, a litle portion of blacke, & grinde them together w*ith* glayre, you shal make therof a Sanguine, or a Murrrey colour.

[Orenge tawney for armes.][724] If you will mingle a bright redde with a bright yellowe, and grinde them together with glayre, you shall haue thereof an Orenge Tawney.

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[719] Nota.] E-F om. *Nota.*
[720] Also] E *[Nota.] Also*
[721] Fo viiij] F *13*
[722] Purple, or Violet colour for armes.] F om. *Purple, or Violet colour for armes.*
[723] Sanguîne. Or Murrey for armes.] F om. *Sanguîne. Or Murrey for armes.*
[724] Orenge tawney for armes.] F om. *Orenge tawney for armes.*

[Lyon tawney,]⁷²⁵ If you mingle redde Lead and Masticot together, you shal haue therof a Lyon tawney.⁷²⁶ [If] **[fol. 8v]⁷²⁷** [The arte of limming.]

[Incarnation and fleashly colour]⁷²⁸ If you wil make incarnations for visages, or a fleshly colour for Images, firste lay on the white, and enew it with vermelion, or els take two partes of Vermelion and one of Cereuse, and mingle them together, and so laye it on thy worke, and enewe it if thou wilt, when it is dry with good Vermelion.

[Peach color]⁷²⁹ Also if you mingle Vermelion with Cereuse, by discretion you may make thereof a Peache flowre colour.

[Sky colour.]⁷³⁰ Also by mingling Vermelion and Azure together, by discretion you may make thereof a Skye colour.

[Bloude red.]⁷³¹ If you will make a bloude redde, take of the best Synapour, and sadde it at the sides with Browne, or Vermelion, or with blacke.

[Lincolne greene.]⁷³² If you mingle good greene and Safron together, by discretion you shall haue thereof a perfitte Lincolne greene.

[Popiniay greene.]⁷³³ If you mingle Azure and Masticot together, you shal haue thereof a perfite Popiniay greene.

[Motley greene.]⁷³⁴ If you mingle red with greene, you shal make thereof a Motley greene.

[Blacke vesture.]⁷³⁵ If you wil make a blacke vesture, take and laye firste a champe of light blacke mingled with white Leade, & sadded with good blacke.

[Marble or ashe colour.]⁷³⁶ If you wil mingle blacke with a portion of white, you may make thereof a Marble, or an Ashe colour at your discretion.

[Ruffet or sadd brown]⁷³⁷ If you will mingle a litle portion of white with a good quantitie of redde, you may make thereof a Russet, or a sadde Browne, at your discretion.

[Nota.]⁷³⁸ Thus by minglinge of colours, you may make them of sundrie colours, and by proufe you maie come to the perfite knowledge, howe to make them on the beste manner. [Note]

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⁷²⁵ Lyon tawney,] F om. *Lyon tawney,*
⁷²⁶ F add. *B 3*
⁷²⁷ F indicates pagenumber 14 in upper left corner.
⁷²⁸ Incarnation and fleashly colour] F om. *Incarnation and fleashly colour*
⁷²⁹ Peach color] F om. *Peach color*
⁷³⁰ Sky colour.] F om. *Sky colour.*
⁷³¹ Bloude red.] F om. *Bloude red.*
⁷³² Lincolne greene.] F om. *Lincolne greene.*
⁷³³ Popiniay greene.] F om. *Popiniay greene.*
⁷³⁴ Motley greene.] F om. *Motley greene.*
⁷³⁵ Blacke vesture.] F om. *Blacke vesture.*
⁷³⁶ Marble or ashe colour.] F om. *Marble or ashe colour.*
⁷³⁷ Ruffet or sadd brown] F om. *Ruffet or sadd brown*
⁷³⁸ Nota.] F om. *Nota.*

[Nota.]⁷⁴⁰ ¶ Note furthermore that thereis a certein colouring which is called Vernix that is more noble and excellet than all other colours. And so much the more excellent in that it is set aboue all colours. And as the daye beco*m*meth more light and brighter by the shining of *the* sonne euen so all colours that are vernished do shewe furth a better glosse or luster, and become more brighter by the shyning of the same. And it is made in maner & forme following.

¶ To make a kynde of colouring called Vernix wherewith you may vernishe golde, siluer, or any other colour or payntinges, be it upon velym, paper, tymber, stone, leade, copper, glasse, & c.
Take Bengewyn & bray it well betwixt two papers. then put it in a vyall & power upon it good Aquavite that it be aboue the Bengewyne three or foure fyngers, and let it steepe so a day or two. Then put to it for halfe a vyoll of such Aquavite, syue or fire chyues of Saffron slenderly stamped. This done strayne it, & with a pencel vernish therwith any thing gilted which will become bright & shyning drying it selfe immediatly, and so wil continue the brightnes many yeres. But if you will vernishe on Siluer, then take the almon of Bengewyne, that is to saye the white that is founde in the middest of Bengewyne, and dresse it with Aquavite in the foresaid maner, leauing out the Saffron. And the saide vernishe made with Bengewyne & Aquavite onely is very good to vernishe all thinges aswel paynted as not painted, for it maketh tables & coffers of walnuttree & hebeny to glister if it be laide upon them, and all other lyke thinges, as woorkes of Iron, copper or tynne, gilted or not gilted, for it maketh bright, preferueth, aydeth the colour & dryeth incontinent wythout [C. i.]⁷⁴¹ [taking] **[fol. 9v]**⁷⁴² [The arte of limming.] taking any dust or fylth, you may make it cleane wyth a lynnen cloth, or with wyping the worke with a Foxe tayle the which is better.

¶ To make vernix another way for the purposes aforesaide.
Take two onc*es* of harde mastike and stamp it, & putt in into a litle newe pot, and so melt it on a soft fire, this done, put to it one once of the oyle of a Fyrre tree, and so let them boyle a little euermore stirringe them together, but let it boyle almost nothing, for if it boyle too much the vernish wilbee too clammy, and to knowe when it is boyled ynough, put into it a hennes fether, & if it burne by & by, it is a singe that it is *per*fect. Then take it from the fyre, & put it into a stone pott, & kepe it well from dust: and when you will occupye it, take so much therof as will serue your

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⁷³⁹ Fo. ix.] F *15*
⁷⁴⁰ Nota.] F om. *Nota.*
⁷⁴¹ C. i.] C-D-E *C*; F om. *C. i.*
⁷⁴² F indicates pagenumber 16 in upper left corner.

tourne, & heat it a lytle at the fyre, then spread it upon your woork *with* a pencel as thin as you may, & it shall haue a verye faire glosse or luster, & it will dry incontinent if you shal sett it tin the sonne.

¶ To make colours of all kynd of mettalles.
Take a beate of Christall or a Paragon stone beate eche of them by him selfe in a brasen morter to fyne poulder, then grynde them drye eche by him selfe on a painters stone until the poulder be very fine & small, then grynde them again on the same stone ech by hym selfe with good glayre and lay some one of them on the woorke wyth a penne or a pencell, and when it is well dryed, then rush it ouer with golde, or wyth anye other mettall, and you shall haue the same colour that the metall is of. [To]

[fol. 10r] [The arte of limming. Fo. x.][743]
¶ To make letters of the colour of gould wythout gould.
Take one once of Orpyment and one once of fyne Christall, and beate eche of them by him selfe to poulder in a brasen morter. Then grynde them wel together wyth glayre upon a paynters stone, then it ys perfect to write withal.

¶ To make letters of the colour of siluer wythout siluer.
Take an once of tynne, two onces of quicke siluer, and melt them together, then grynde them well on a paynters stone wyth gumme water, and wryte with it.

¶ To make white letters in a blacke feelde.
Take the yelke of a newe layde egge and grynde it upon a paynters stone with faire water, so as you may well write with it out of a penne, and when you haue so done, you may with the same liquor drawe or write with a penne great or small letter upon paper or parcheme*n*t, and when they be dry, then may you with Inke black ouer the letters and paper so muche as you shall think good. And when the blacke is through drye then maye you with a white wollen clothe or a knyfe rubbe of all the saide letters written with the yelke of the egge, and then the letters underneath will apeare all white, because they were preferued with the saide liquor: So that you shall haue faire white letters in a blacke fielde.

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[743] The arte of limming. Fo. x.] F *17 The arte of limming.*

¶ To make staunche graine, or a poulder to amende the parchement and to receiue Inke. [C. ij.]⁷⁴⁴ [Take]

[fol. 10v]⁷⁴⁵ [The arte of limming.] Take two partes of rosen & one parte of allowe, and beat eche of them by him selfe in a brasen morter all to powder, & put the same powders togeather in a fyne lynnen clothe & rub your vellym, parchement or paper therwith when you begin to write. And when the writing is drye, you may rub it ouer againe with a whyte wollen cloth, and the letters wilbe neuer the worse, but more fayrer & brighter to see to.

¶ To renewe olde & worne letters.

Take of *the* best galles you can get & bruse them grosly then lay them to steepe one day in good whyte wine

This done distill them with the wyne, and with the distilled water that commeth of them, you shal wet ha*n*dsomly the olde letters with a little cotton or a small pe*n*cel, & they will shewe freshe & newe again in suche wyse as you may easely reade them.

¶ To take grease out of parchement or paper.

Take shepes burres & burne them to pouder and laye the saide pouder on bothe sydes the parcheme*n*t or paper betwene two paper bourdes & presse them by *the* space of two dayes or more, and it will drye & soke out all the grease.

¶ To make red and greene sealing waxe.

Melt a pound of waxe & two onc*es* of turpentyne together, & when they be well molten, take them from *the* fyre & put to them an once of vermilion whil it is luke warme, & stirre it well together in the keling, and then make it up in rowles, and in like maner shal you make greene waxe by putting Vertgrese into it. Note if you will take ii partes of rosyn & one parte of turpentyne, adding to it Vermilio*n*, as id aforesayd it maketh *the* better waxe. [A]

[fol. 11r] [The arte of limming. Fol xj]⁷⁴⁶

¶ A pretie deuise to take out the true forme & proporcion of any letter, knott, flower, Image or other worke. Be it printed, drawen wi*th* a pen or pencell upon paper or parchement wi*th*out rasign, blotting or hurting the right paterne or picture it selfe.

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⁷⁴⁴ C. ij.] F *D*
⁷⁴⁵ F indicates pagenumber 18 in upper left corner.
⁷⁴⁶ Fol. xj] F *19*

Take oyle, or other licours that make smoke & burn them in a lampe, then holde ouer the lamp a sheete of cleane paper, & blacke as much of the same lyghtlye as wil receaue the ful proporcion of the worke that you do meane to take out, that done lay the blacked paper under the backe syde of the worke, the blacked syde upwarde, laying a thyn white paper betweene the worke & it: and with a small pencell made of harde wood or of done you shall drawe lightly ouer the letters, knott, or worke which you desire to take out, pressing it softelye. Thus doing ye shal see the very forme & proporcion of the same worke remaining on the thin white paper.

Then with a small pen & ynke, you may trace & drawe ouer the woorke remaininge on the white paper, that done, the ynke will sett out the very print & forme of *the* worke (as farre as you touched the same with your pe*n*cell in euery p*ro*porcion. You may also for the same purpose (if neede bee) blacke ouer your paper with the leye or a kandle or of a lynke, or of a new torche, or such likewhich is a very redy way and a perfect.

¶ Another pretie deuise to take out the true forme and proporcion of any flower Image or such like.

Take a clene and thin lanterne horne, & lay it upon the letter, Image or other woorke that thou wylte take out, and it will appeare through the horne, so as thou mayst drawe with a small pen upon the horne [C iij.]⁷⁴⁷ [all] **[fol. 11v]⁷⁴⁸** [The arte of limming.] all the proporcion of the woorke at thine owne pleasure, euen as thou lust. And when thou hast drawne it all out, then let it drye uppon the horne in the sunne, and when it is through drye, then breath upon it twyse or thryse, and then laye it downe upon thy booke. And then presse it downe (the letters being next the paper) with a lynnen clothe, and the same letters or work shal remaine upon the paper whiche thou didst drawe upon the horne, then drawe it faire againe with blacke Inke.

¶ Here haue I thought you (besydes the temperinge of goulde, of siluer, and of colours) dyuers thinges, verye meete and necessarie to be knowne to paynters & scriueners. And nowe will I rehearse briefelye all that I haue written before touching lymming. First draw thy worke with a pencell of blacke lead, and then with penne and Inke. Then lay thy syses for thy gould and siluer. Then ingrosse them wyth a sharpe knyfe, then wet them ouer lightly with thy pencell, then being dry burnish it with a tooth. Then wet thy size again lightly Then touch thy gould and lay theron. Then presse it lightly with an Hares taile, then let it drie, then burnish it with a tooth, then rubbe it with a white wollen cloth or an Hares foote untill all go of, but that which cleueth unto the size. Then lay thy colours: First thy false colours and after thy sadd, then purfle them about the sides

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⁷⁴⁷ C iij.] F *D 2*
⁷⁴⁸ F indicates pagenumber 20 in upper right corner.

with blacke Inke, then mayst thou diaper them ouer with whyte coloure if thou wilte, then vernishe them ouer wyth good old glayre, & then hast thou done all that belongeth to lymmyng. Finished An*no* domini 1573.[749] [The]

[fol. 12r] [fol. xii][750]

¶ The names of all suche colours & other things, as are mencioned & contayned in this perfe*ct* booke of lymming, and are for the moste parte to be solde at the Poticaries.

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[749] 1573] D *1588*; F *1605*; All copies finish in an elegant way, where the last lines are centered.
[750] fol. xii] F om. *fol. xii*

Gould foyle

Sylver foyle.

Shell goulde

Shell siluer.

Azure.

Byze

Indebaudias

Smalt florrey.

Orpyment

Masticot

Vermelyon

Turnesoll.

Rosett

Brassyll

Sinapor lake

Sinapor topias

Red lead.

Blacke lead.

Browne of Spayne

Okir de luke.

Greene byze.

Vertgrese.

Saffron

Vennys Cerius

White leade

Fume blacke

Blacke ynke.

Hartes horne Gipsum.

Booll Armoniacke

Gumme Arabeck

Galles

Greene coporas

Romayne vytrioll

Rozen.

Alam

Waxe.

Honnye

Turpentyne

Quicke siluer

Tynne.

Pomegarnard pillz

Christall stone

Paragon stone

Chalke.

Allabaster

Playster of an olde
Image.

Vnslickt lyme.

Poulder of white
bones.

Poulder of shepes burres.

Netes gall.

Whytes of egges

yelkes of egges.

Cowes mylke

Ewes milke.

Milke of greene figges.

Mylke of spurge

Milke of warte-
weede

Mylke of Salendyne

Iuce of garlyke &
of Onyon heads.

Iuce of Rewe

Iuce of red nettle.

Scraped Cheese

Whyte wyne

Whyte Vineger.

Vergis

Chyldes pisse

Lye

Oyles and liquors
that make smoke.

Glouers shredes and
shredes of newe
parchement

Water & grease of
snayles. Glue
water.

Aquavite.

Bengewyne.

Oyle of lynseede

Oyle of walnuttes

Baysalte

[A table]

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[751] Omission of fol. 12v in C

[752] folio 2] F *Fol 1.*

[753] eod] F *2.*

[754] eod] F *3*

[755] 3] F *4.*

[756] 4] F *5*

[757] eod] F *6*

[758] 5] F *7*

[759] eod] F *8*

[760] 6] F *eod.*

[761] eod] F *9*

To temper Okyr de Luke.   eod

To temper grene byze   eod

To temper vertgrese called Spanish greene   eod[762]

To temper Saffron. Eod

To temper Venyce Cerius & whyte leade.   eod

To make a fume blake called Sable.   eod

To make an excellent black like veluet.   7[763]

To make a blacke colour or an ynke of a good perfeccion wher wich you maye write wyth a pen
or pencell.   eod

The maner how to diaper or florishe with a pencel ouer gold, filuer or colours   8[764]

The waies how to make sondry kyndes of colours by tempering & menginge of coloures together.
          eod

To make a kynd of colourynge called vernix   9[765]

To make colours of all kyndes of mettals   eod[766]

To make letters of the colours of golde without gold   10[767]

To make letters of the colours of syluer without siluer eod

To make whit letters in a blak fielde.   eod

To make staunche graine or a poulder to amande the parchement, and to receiue ynke   eod

To renewe olde and worne letters   eod[768]

To take grease out of parchemt & paper.   eod

To make red or greene sealinge waxe   eod

Apretie deuyse to take out the true forme & proporcion of any letter, knotte, flower, Image, or
other woorke, be it printed, drawen with a pen or pencell upon paper or parchement without
rasynge, blottinge or hurting the right paterne or picture it self. fo. 11[769]

FINIS.[770]

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[762] eod] F *10*
[763] 7] F *11*
[764] 8] F *13*
[765] 9] F *15*
[766] eod] F *16*
[767] 10] F *17*
[768] eod] F *18*
[769] fo. 11] F *19*
[770] F adds a floral vignet under the text.

Appendix 4

Phebe's personal library

This appendix contains the list of books that I consider part of the personal library of Phebe Challoner (later Phebe Ussher).[771] This title, reference number and relevance will be systematically handled. All books come from the collection of Trinity College Dublin, which will be foreshortened as TCD.

Signed and annexed books

1. Gerard Legh, *The Accedens of Armory*, 1576 (TCD EE.k.19.N°.1., signature)
2. John Bossewell, *Workes of Armorie*, 1572 (TCD EE.k.19.N°.2., annexed to no. 1)
3. Anonymous, *A Very Proper Treatise*, 1581 (TCD EE.k.19.N°.3., annexed to no. 1)
4. Gervase Babington, *A Profitable Exposition of the Lords Prayer*, 1588 (TCD BB.n.7, signature)
5. Henry Bullynger, *A Hundred Sermons upon the Apocalipse*, 1573 (TCD BB.h.31, signature)
6. John Knewstub, *A Confutation of Monstruous and Horrible Heresies*, 1579 (TCD BB.ii.48, signature)
7. John Rainoldes, *The Summe of the Conference Betweene John Rainoldes and John Hart: Touching the Head and the Faith of the Church*, 1588 (TCD BB.kk.19, signature)
8. John Harmar, *Master Bezaes Sermons upon the Three First Chapters of the Canticle of Canticles*, 1587 (TCD CC.l.29, signature)
9. Peter Viret, *A Faithful and Familiar Exposition upon the Prayer of Our Lorde Iesus Christ*, 1582 (TCD CC.l.57, signature)

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[771] This list does not pretend to be complte, as I have only been able to study a good two-hundred and fifty books of the core collection of TCD. Furhter research might bring new results.

Unsigned books

10. Henry Peacham, *The Complete Gentleman*, 1622 (TCD EE.l.34. N°.1, pressmark of James Ussher)

11. Henry Peacham, *The Art of Drawing*, 1607 (TCD EE.l.34. N°.2., annexed to no. 10)

12. Henry Peacham, *Graphice*, 1612 (TCD EE.l.34. N°.3., annexed to no. 10)

13. Anonymous, *A Closet for Ladies and Gentlewomen*, 1611 (TCD EE.ll.68, suitable subject, missing marginal notes from James Ussher)

Books mentioned in documents

14. Johannes Scapula, *Lexicon Graeco-Latinum Novum*, first ed. 1580 (reference in TCD Ms 357, fol. 5r; physical copy might be TCD 24.W.52, which replaces the older catalogue reference XX.cc.31, a typical Ussher reference)

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  MS Sloane 3604

- **Bodleian Library, Oxford**

  MS B Rawlinson D. 1025
  MS Ballard 67
  MS Douce 392

- **National Archives, Kew**

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  Ref. SP 1/58
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- **National Art Library, London**

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- **Society of Antiquaries, London**

  MS SAL/MS/6

- **University Library, Glasgow**

  MS Hunter 330
  MS S.M. 1161

- **Wellcome Library, London**

  Wellcome manuscripts: 425, 506, 525, 4338, 7113, 8097

UNITED STATES

- **The New York Academy of Medicine**

  MS 1

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Anonymous 1573

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Anonymous 1581

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Acknowledgements

Abstract

The overarching topic of this dissertation is practical knowledge in early modern Europe. Practical knowledge is the know-how people have in order to make something, do something or obtain something. Textually speaking, this knowledge profiles itself as a prescription, recipe, secret, or formula. The areas of interest of practical knowledge are very wide from kitchen wisdom to medical panaceas.

The main aim of this interdisciplinary study is to contextualize practical knowledge. By 'contextualizing' I mean studying different topics that are intrinsically intertwined with the subject. In this PhD dissertation the 1) origin or creation, 2) transmission or dissemination, and 3) use or consumption are key subjects for understanding the place of practical knowledge in early modern European society. These three topics are reflected in the six chapters. The first part, containing the first three chapters, deals with practical knowledge in general and the second part, containing the last three chapters, deals with a case study of a book called *A Very Proper Treatise* (1573).

The first chapter of the first part, which is an introduction to the whole thesis, contains the historiography and theory about the subject concerning practical knowledge production and status. The second chapter studies transmission dynamics of practical knowledge, making use of the rhizome metaphor of Deleuze and Guattari and examining transmission dynamics in specialized environments, such as workshops and laboratories. In the third chapter of Part I, I develop the concept of mediators of practical knowledge, arguing that some people, either literary writers or practitioners, used the printing medium to earn in their living. As a consequence they are responsible for a major dissemination of practical knowledge.

Part II of this PhD dissertation is conceived as a microapproach. In this part the study of the early English print *A Very Proper Treatise* (1573) finds its legitimate place. This *Treatise* about limning, or painting in books, will be examined through the same three lenses used in Part I: creation, dissemination, and consumption. In the first chapter the origin of the text of the book is examined. The following chapter examines the making or origin of the material book, where I argue that it is a printer's compilation. Finally, the consumption and consumers of the book will be studied in the third and last chapter.

Resumo

Conhecimento prático na Europa moderna é o tema central desta dissertação. Conhecimento prático é a habilidade que as pessoas possuem para criar algo, fazer algo ou obter algo. Textualmente, esse tipo de conhecimento apresenta-se na forma de uma prescrição, receita, segredo ou fórmula. O âmbito do conhecimento prático é extenso, indo desde receitas de cozinha até panaceias médicas.

O objetivo deste estudo interdisciplinar é o de contextualizar o conhecimento prático. Por 'contextualizar' entende-se estudar temas diferentes que estão intrinsecamente conectados com o assunto. Nessa dissertação, a origem e criação; a transmissão e disseminação; e o uso ou consumo do conhecimento prático serão temas centrais para entender o lugar que esse conhecimento ocupa na Europa moderna. Estes três temas serão explorados nos seis capítulos desta dissertação. A primeira parte, que contém os três primeiros capítulos, lida com o conhecimento prático em geral. A segunda parte, que contém os três últimos capítulos, é voltada para um estudo de caso, centrado no livro *A Very Proper Treatise* (1573).

O primeiro capítulo constitui uma introdução à dissertação como um todo e contém a historiografia e a teoria sobre a produção e o *status* do conhecimento prático. O segundo capítulo trata das dinâmicas de produção do conhecimento prático, fazendo uso da metáfora dos rizomas de Deleuze e Guattari e examinando as dinâmicas de transmissão em ambientes especializados, como oficinas e laboratórios. No terceiro capítulo da primeira parte é desenvolvido o conceito de mediadores do conhecimento prático, argumentando que certas pessoas, tais como escritores literários ou praticantes, usaram a imprensa para ganhar a vida, e como consequência são responsáveis por uma maior disseminação do conhecimento prático.

A segunda parte dessa dissertação é concebida como um estudo em microescala, dedicado a um livro inglês chamado *A Very Proper Treatise* (1573). Esse tratado sobre iluminura, ou pintura em livros, será examinado através da mesma perspectiva usada na primeira parte: criação, disseminação e consumo. No primeiro capítulo será examinada a origem do texto do livro. O capítulo seguinte trata da criação ou origem do livro enquanto objeto, defendendo a ideia de que se trata de uma compilação do tipógrafo. Por fim, o consumo e os consumidores do livro são estudados no terceiro e último capítulo.

En dees is voor de bomma

Dedicated to Maria