Making Della Porta a Baconian Philosopher: *Magia naturalis* in the Context of the English Experimental Philosophy

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Abstract: This chapter deals with a curious phenomenon of cultural appropriation of Giovan Battista Della Porta's *Magia naturalis* in the new context of English experimental philosophy. I show, first, how the *virtuosi* used Della Porta as a sourcebook of recipes to be further tried and improved, collecting results in commonplace books, experimental notes, correspondence, or their own published texts. Subsequently, I discuss the way in which this new experimental context influenced the 1658 English translation of the *Magia naturalis*. I show that, through consistent and organized editorial interventions, the anonymous translator made Della Porta speak the language of experimental philosophy. Thus, some of the recipes read more like experimental trials, with updated ingredients and with implicit details clarified. Classical quotations and verses are either eliminated or abridged to read like instructions to practice. Ultimately, these edits, along with the revised paratexts, served to enlist Della Porta among the practical, experimental Baconians of the Interregnum.

Keywords: experiments, experimental philosophy, Baconianism.

1. Introduction

Giovan Battista Della Porta's *Magia naturalis* was a highly popular book, a versatile European bestseller that circulated in various, and quite distinct contexts. In this paper, I explore one of these contexts of its reception which, I argue, facilitated the appropriation of the *Magia naturalis,* in the mid-seventeenth century, among the sources of the English experimental philosophy. By examining how Della Porta's work was read in England, I aim to unearth a fascinating phenomenon of cultural appropriation that transformed Della Porta, the Neapolitan *magus,* into a Baconian philosopher.

My argument has three parts. In the first part of the paper, I discuss the ways in which some of Della Porta's English readers used the *Magia naturalis* as a sourcebook of recipes, ideas and experiments.[1] I show that very different read-

[1] There is already a vast literature on reading the *Magia naturalis* as a book of secrets. A relevant selection of titles would contain: Verardi 2018; Saito 2014; Balbiani 2001; Borrelli 2011; Orsi 1997; Eamon 2011; Martins 2015.

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ers used Della Porta's recipes as raw material in their own experimental investigations. In doing so, they tried out the recipes, operating, thus, a selection; they also worked on improving the recipes and recorded them in the context of their own experimental investigations. I call this process enactment.[2] Enacting a recipe begins with reading and deciphering a text and continues in the laboratory, with experimental tests and trials. The experimenter follows, in principle, the set of instructions recorded in the recipe; but he also adapts it to his own experimental context. The enactment ends with a recording. In the recording, what is in principle the same recipe gets transformed by the process of enactment which includes a double translation: first, the deciphering and adaptation of the initial text to the new experimental context, and then the translation of the newly achieved results to a new audience. As we shall see, in the case of Della Porta's English mid-seventeenth century audience, both these contexts were strongly influenced by a Baconian program of building natural and experimental histories. As a result, the *Magia naturalis* and its secrets, was read, interpreted and assimilated with a Baconian natural (and experimental) history.[3]

In the second part of my paper, I discuss the English translation of the second edition of Della Porta's *Magia naturalis*, published anonymously in 1658 (with a second edition in 1669) (Della Porta 1658). I show that through consistent and organized editorial interventions, the anonymous translator made Della Porta speak the language of experimental philosophy. The translator opted for recording recipes in a language that emphasizes tests and trials; he sometimes updated the material ingredients or the methodology of the selected recipes, adapting them to a context more familiar to the English *virtuosi*. Furthermore, in line with Bacon's precepts of getting rid of "antiquities, citations and differing opinions of authorities" (Bacon 2004, 457) the translator eliminated most of the ancient and modern verses that are adorning the Latin edition, abridging the recipes in the modern Baconian language, with an emphasis on testing, collaboration and, sometimes, on practical usefulness.

In the third part of the paper, I look at a handful of examples of recipes which, in the English translation, look quite different in comparison to the original. I show that the English translator updates and transforms the recipes to fit a more modern context of the experimental laboratory (workshop), in line with the interests and expectations of his readers. Editorial interventions include updating the lists of ingredients, spelling out experimental procedures, improving the experimental methodology, and updating some practices and procedures. In this part of the paper, my work is exploratory and open-ended. Clearly, more research needs to be done to identify all the changes the unknown translator operates in this curious English edition. But even at this stage of my research, some preliminary conclusions are possible. First, we talk about editorial interventions of a

[2] I have discussed this way of reading early modern recipes and experiments in a number of articles, such as Jalobeanu 2016, 2020b.

[3] On Bacon's natural histories and Baconian experimental histories see Jalobeanu 2022; 2020.

very similar kind, which tend to update Della Porta's material, making it fit better into a more experimental context. Second, editorial interventions abound in those parts of the *Magia naturalis* which treat of recipes and experiments popular in the English experimental context of the Interregnum. The same recipes, experiments and novel "sciences" we can find in the notebooks and projects of the English *virtuosi* before and after the Restauration.

Beyond the historical details, there is a general lesson to be learned from this investigation of a curious phenomenon of cultural appropriation. When dealing with the fantastic popularity of the *Magia naturalis,* present-day scholars tend to attribute it to its dimension of theatrical performance (Kodera 2012; 2014; Eamon 2017). In William Eamon's terms, the experiments of the *Magia naturalis* are seen as "demonstrations" of the "inherent power of occult forces and the magus' ingenuity and skill in manipulating them" (Eamon 2017, 15). Other scholars emphasize not the style of writing, but the mere content of the book, which they take to be the field of "preternaturals," i.e., "the large and nebulous domain of marvellous" (Daston and Park 1998, 159). There are, no doubt, in the *Magia naturalis* many recipes explicitly intended to provoke wonder and amazement; many phenomena and events staged by a magus acting, as it were, as a "stage director" (Kodera 2014, 19). However, this "theatrical performance" means something different to a reader of the second edition of Della Porta's *Magia*; and something even more different to a reader of the sanitized and Baconian English translation. Enacting Della Porta's recipes in the English mid-seventeenth century adapts the theatrical performance to a new context in which readers are not mere subject of amazement and wonder, but they are expected to step out of the gallery and enter the center stage, actively engaging with secrets, recipes and experiments.

2. Della Porta Among the *Virtuosi*: Enacting Recipes and "Improving" Trials

There is something peculiar about the seventeenth century reception of Della Porta in England. In addition to being read, like everywhere else in Europe, as a book of secrets, *Magia naturalis* seemed to have circulated among the natural philosophers who used it as a source of experimental investigations. Francis Bacon, Thomas Browne, Samuel Hartlib, Henry Power, John Beal, John Evelyn made excerpts from the *Magia naturalis* in their notebooks, referred to it in their letters, and sometimes also in their published works. They used it as a rich storehouse of recipes and experiments; they tried, and sometimes corrected Della Porta's recipes, using thus the second edition of the *Magia naturalis* as potential building material for future arts and sciences. In this way, some of Della Porta's recipes—and sometimes his name, as well—occur in seventeenth century discussions on optics, chemistry, husbandry, magnetism, pneumatics, medicine and metallurgy. When this happens, however, the recipes are often almost unrecognizable. Before being recorded in a new experimental context, Della Porta's "magical" recipes are subjected to a complex process of decoding, testing and re-signification which I call enactment (Jalobeanu 2020b). In this

first part of my chapter, I discuss several such examples of enactment, showing how recipes and secrets from the second edition of the *Magia naturalis* received a new life in a different context, that of the English experimental philosophy.

One feature of this new context is its Baconianism. Time and again, Della Porta's recipes are discussed together with Francis Bacon's experiments, particularly with those from the posthumous *Sylva Sylvarum*. As has been shown, Bacon himself was a very careful reader of Della Porta, and many of his own experiments are using, as a starting point, material borrowed from the *Magia naturalis*.[4] Late seventeenth century readers of the two authors recognized and acknowledge these borrowings. Time and again, Robert Boyle, John Evelyn, Robert Hooke, John Beale and Henry Power are quoting Bacon alongside Della Porta or are registering recipes that borrow elements from both sources. This "conflation" of recipes from Bacon and Della Porta can be merely thematical, as in Robert Boyle's discussions of grafting and hybridization,[5] or as in John Evelyn's reflections of spontaneously generated plants and the generative power of different kinds of soils.[6] Meanwhile, there are also mid-seventeenth century *virtuosi* who clearly took Della Porta and Bacon as investigators engaged in the same kind of experimental enterprise; and some of them were even willing to read Della Porta's recipes as a sort of embodiment and enactment of Baconian experimentation. One such reader is the natural philosopher, medical practitioner and experimentalist Henry Power, author of the first book bearing the title *Experimental philosophy* (1664).[7] Among Power's numerous manuscripts, there is a very interesting and never fully investigated collection of recordings selected from various authors and featuring prominently among the sources Della Porta's *Magia naturalis*. The manuscript, British Library Sloane Ms. 1334, has as a working titlepage *Probata*; its folios bear two kinds of running heads: "experiments", and "experiments and subtleties."[8] Some of the recordings seem to be

[4] As has been shown by Rees 1986; Jalobeanu 2016; Rusu 2017; Rusu and Jalobeanu 2020b.

[5] In *Certain physiological essays,* Boyle cites Francis Bacon's recipe of cutting roses in such a way to make them flourish in the Fall (from Century V of the *Sylva Sylvarum*) alongside Della Porta's numerous recipes of how to make trees to bear several kinds of different fruits (from Book III of the *Magia naturalis*). Boyle claims he never succeeded to enact these recipes, but others did, and cite Seth Ward's claim of having seen pears growing on an apple tree. Boyle concludes that the failure is not due to the impossibility of the experiment, but to a mistake in the process of enactment. See Boyle 1669, 55. For other examples see Jalobeanu 2020b.

[6] Evelyn draws on Book II, chapter I of the *Magia naturalis* and Francis Bacon's experiments with "plants without seeds", Century V of the *Sylva Sylvarum* in many places in his *Philosophical discourse on Earth*. See for example the explicit quotation of Della Porta in connection with the discussion over whether earth has by itself a seminal virtue, or whether what is "putting forth" depends on the astral influences of a particular place (which is Della Porta's position). See Evelyn 1676, 172. See also Evelyn 2001, 172–73.

[7] On Henry Power see Trevor J. Hughes 2010. On Power's *Experimental Philosophy* and its background see Webster 1967.

[8] British Library, Ms Sloane 1334. Very little research was done on the rich archive of Henry Power, hosted today by the British Library. The best historical investigation of Power's ex-

fair copies, indicating a project of writing some sort of book of "experimental" secrets; but about half-way through, the manuscript begins to look more like a set of working notes for further experimental trials. Especially the first part of the manuscript, fols. 1–42, contain references to the *Magia naturalis* in almost every page. But this material taken from Della Porta is often put together with corresponding recipes and experiments from Francis Bacon's *Sylva Sylvarum*, Thomas Browne *Pseudodoxia epidemica*, Kenelm Digby, William Gilbert and quite a number of other authors, ancient and modern. A full investigation of this manuscript awaits to be done. For the time being, I would merely offer some examples in order to illustrate what I take to be an interesting and very peculiar way of assembling recipes that place Della Porta fully in an experimental, Baconian context.[9] In general terms, the strategies employed by Power in his recordings are the following. First, he identifies authors and books that can constitute sources for a particular experiment. In this, he does the work of a good editor; indicating explicitly which of Bacon's or Browne's experiments are borrowed from (or are the same as) Della Porta's. Second, he seems to enact (at least imaginatively) some of these recipes and experiments, since some of the recordings end with the phrase *Probatum est*. This is by no means the rule, however. A recording on fol. 25r ends with the phrase: "How true this is I have to experiment" (Power, BL MS Sloane 2334, 25r). This way of recording is fully consistent with Bacon's advice in the *Parasceve* of distinguishing between "tried" and "tested" experiments and recipes and the untried and problematic ones;[10] and between the experiments explained so that the reader has all the facts, and those left for the reader to consider try for herself.[11] Power seems to even conform to Bacon's advice to write down in different manner experiments "tried" and those received on dubious credit,[12] since in some cases the name of the source is in the text, while in others it is merely added at the end.

It is worth looking at some examples of some such recordings. My first example is an experiment of resonance that Power devises, based on Bacon and Della Porta. The recording reads thus:

periments can be found in a string of papers published in the 1970s by Charles Webster. In the past three-four years, together with my group in Bucharest, we undertook an in-depth investigation of the MS Sloane 1334. I want to thank my colleague dr. Grigore Vida for the primary transcription of the manuscript. See also the first paper published by a colleague on our group, Matei 2024.

9 Della Porta's recipes feature in Power's manuscripts in over 35 folios of the notebook.

10 "[…] is there is anything in any narration which is doubtful or worrying, I would not at all want it to be suppressed or kept quiet but to be put in writing plainly and clearly by way of a note or advice" (Bacon 2004, 469).

11 As he states in the *Sylva Sylvarum*: "The rejection which I continually use of experiments […] is infinite; but yet if an experiment be probable in the work, and of great use, I receive it, but deliver it as doubtful", Bacon, 1859, II 347.

12 Bacon suggests that "[…] if there is anything in any narration which is doubtful or worrying, I would not at all want it to be suppressed or kept quiet but to be put in writing plainly and clearly by way of note or advice" (Bacon 2004, 469).

> Take two lutes or viols & tune their strings equally to the same height & pitch of sound. Then strik[e] orderly the strings of the one without any stopping upon the frets & you shall see the other both sound & move through at a pretty little distance & untouched which will seem (?) something miraculous. The reason is from the sympathy of sounds: so that one string bring the other which is strung at the same height, will sympathetically answer it. So that it is probably that of two Instruments, which have no stops as harpes, if they be both tuned so the like height, you cannot leisurely play a tune of the one, but the other (though a fainter manner) will answer it at some distance. Bacon Exper. 280.[13] Baptista Porta Nat. Magiae lib. 20[14] pag. 662.[15] *Probatum est.*[16]

This short fragment is not an abridged transcription of the sources indicated, but a new experiment, based on the extended discussion on resonance that one cand find in *Sylva Sylvarum*, Century III, and on the Book XX of the *Magia naturalis*, but very much departing from both sources. Della Porta's chapter on harps (*lyra*) clearly states that resonance is not a property of the "sympathy of sounds" (as Power puts it) but a result of the sympathies and antipathies between the materials from which musical instruments are made.

[13] This refers to Francis Bacon, *Sylva Sylvarum*, experiment 280 which reads: "It was devised, that a Violl should have Lay of Wire Strings below, as close to the Belly, as a Lute, and then the Strings of Guts mounted upon a Bridge, as in Ordinary Violls; to the end, that by this means, the upper Strings stricken, should make the lower rebound by Sympathy, and to make the Musicke better; Which, if it be to purpose, then Sympathy worketh, as well by Report of Sound, as by Motion. But this device I conceive to be of no uses because the upper Strings, which are stopped in great variety, cannot maintain a diapason or unison with the lower, which are never stopped. But if it should be of use at all, it must be in instruments which have no stops; as virginals and harps; wherein trial may be made of two rows of strings, distant the one from the other and Bacon 1859, II, 435."

[14] Chapter VII of Della Porta's *Magia* is a long discussion of the Harp and its properties; one of them being the sympathetic resonance. The experiment to which Power refers here reads thus: "Lyra, quae pulsata alterum ejusdem toni immotam moveat. Tendantur in unum nervi, ut ad idem & perfectum perveniat unusquisque melosi gravium unam pulsabis ditis, altera reboat & movetur gravis in ea sic acutarum, debita tamen approximation, si id maxime non fuerit conspicuum, paleam supra inducito, & moveri videbis." [The lyre, which when struck, causes the other, of the same tone, to move without being touched. The strings are stretched so that each may reach the same and perfect pitch; you will strike one of the deep, melodious tones, and the other will vibrate and move, heavy in its response, like that of sharp tones. However, the two need to be close enough. If this is not immediately apparent, place chaff above [the second set of chords], and you will see it move.]

[15] It is not entirely clear what edition of the *Magia naturalis* is Henry Power reading and quoting here, the pagination corresponds with some the 1651 edition published by Petri Leffen in Lyon (in 12) and reprinted many times throughout the seventeenth century. For a discussion and a catalogue of Della Porta's editions of the *Magia* in the seventeenth century see The inventory of Henry Power's library lists such a duodecimo edition. See BL MS Sloane 1346, 10r. On Henry Power's library see Eriksen and Wen 2023.

[16] Henry Power, "Experiments and subtleties." Sloane 1334, British Library, 4v.

> But if we seek out the cause of this, we shall not ascribe it to the Musick, but to the Instrument, and the wood they are made of, and to the skins; since the properties of dead beasts and preserved in their parts, and of Trees cut up in their wood [...].[17]

Musical resonance is, for Della Porta, just a particular case of sympathy or antipathy: and thus, two harps, made of the right materials, and tuned in unison, will manifest the resonant effect.[18] By contrast, Bacon's Experiment 279 and 280 might be read as a criticism of Porta's sympathetic theory. Bacon's views are that the resonant effect is a property of sounds; and he suggests attempts to make viols or harps with strings made of gut and metal in order to show that the effect does not depend on the material of the instrument. However, experiment 280 is the description of a failure. It involves a viol with two rows of strings, made of different materials. Bacon dismisses the claims that one can have such an instrument in which the second set of chords will produce sounds without being touched, merely in resonance with the first row. Instead, he suggests further trials with instruments "without stops," such as harps, placed at a greater distance from one another (Experiment 280, Bacon 1859, II, 433). A further difference between Bacon and Della Porta is in the description of the resonant effect. Della Porta claims that harps can be played at a distance, even if not strung in unison, but in "trebles"; and that one can even use the resonant effect to tune strings at the distance. He even concedes that a resonant effect will be seen at great distances, but that in that case, one would not be able to hear the sound, merely note the faint motion (Della Porta 1589, 662). This is probably the source of Bacon's following recording.

> There is a common observation, that if a lute or viol be laid upon the back, with a small straw upon one of the strings, and another lute or viol be laid by it; and the other lute or viol the unison to that string be stricken; it will make the string move; which will appear both to the eye, and by the straw's falling off. The like will be, if the diapason or eighth to that string be stricken, either in the same lute or viol, or in others lying by: but in none of these there is any report of sound, that can be discerned, but only motion (Bacon, 1958, II, 433).

In view of all this, we can see now that Power's recording reads not as a collation of borrowed fragments, but as the result of an enactment. He proposes to take two lutes and viols tuned at unison and place them at a distance from each other, and strike the chords of the one (as opposed to playing upon them) to see the chords of the other both moving and producing a sound. Then he proposes a similar ex-

[17] Porta 1658, 403. The Lain reads: "Sed si nos huius causam perscurtari velimus; non modis, sed fidibus, & instrumentorum ligno, & pellibus attribuemus, quum mortuorum animalium, & succisarum arborum etiam in membris & lignis proprietates conseruentur" (Della Porta 1589, 298).

[18] By contrast, "an instrument strung with Sheep strings, mingles with strings made of a Wolfs guts, will make no Musick, but jar, and make all discords" (Della Porta 1658, 403).

periment with harps. Mark, however, that the experiment with harps is recorded in a much more tentative language than the first experiment. While the first experiment states that "you shall see the other both sound & move through at a pretty little distance & untouched", in the second experiment Power claims that it is merely "probable" that two harps can produce the effect Della Porta indicated, namely that upon playing the first, the second will respond with the same, fainter tune.

Power's records show a discerning and attentive reader, familiar with both texts, eager to enact the experiments, and willing to distinguish between something tried and something merely plausible.[19] He clearly distinguishes between the two different effects of the resonance, the motion and the sound; and claims that one can produce both in a well-designed experiment. The addition of the *Probatum est* at the end of the recipe might indicate that at least a partial trial has been made; and that the recording is the result of an actual enactment.[20]

It is worth looking now at a more complex set of recordings of the same manuscript, a string of experiments dealing with the same phenomenon called "filtration". The experiments aim to reproduce some of Della Porta's famous recipes, enacted also by Bacon in his *Sylva Sylvarum*, and describing attempts to separate water and wine from a mixture. In this case, Power adds to the recording elements taken from a more up-to-date theory of filtration, from Kenelm Digby's *Two treatises* (1641). The first recorded recipe reads thus:

> To separate wine from water by filtration
> There is a motion very familiar among Alchymists which they call Filtration, used chiefly for the Separation of liquid bodies. Let there be made a Tongue or Labell or Flannen, or of Cotton, or of flax, put the one end into the vessel which contains your mixed liquours which you desire to Separate. Put the other end of your Label hang over the verge of the vessel, (so that the end which hangeth out be lower than the superficies of the water. So shall you see the lighter liquour (so will the wine) to climb up the Label in little atoms & at last to mount over the brim, & so in a guttulous descent separate it selfe from the water into any other vessel underneath, which is layd to receive it. But upon all she was thus separated it selfe it will not still part, with the water, but will draw it after it into the lower vessel, but this you may easily discerne by the colour of it be Claret, & so you may prevent they show second mixtion by withdrawing the vessel from under the Label. This motion of filtration will operate & show itself one single and homogeneous body, whether it by wine or by the water. Porta lib. 18 Nat. magia Cap. 5, Kenelme Digby in his treatise of Body cap. 19.

[19] It is worth noting that Bacon does not cite Della Porta anywhere in the *Sylva Sylvarum*; so one thing that Power is doing in his recordings is to identify these borrowings and to place them side by side. Then, we can see him evaluating the recordings, selecting and re-recording the recipes, or imagining new recipes based on his readings.

[20] This is, of course, a conjecture. However, it is worth noting that not all of Power's recordings have *Probatum est* at the end; in some cases, Power even adds to a particular recipe "How true this is I have to experiment." Power, BL MS Sloane 2334, 25r.

This record begins as a transcription of the beginning of Chapter 19 of Digby's *Two treatises*, which reads:

> After these, lett us cast our eye upon an other motion, very familiar among Alchymistes; which they call Filtration. It is effected by putting one end of a tongue, or labell of flannen, or of cotton, or of flaxe, into a vessel of water, and letting the other end hang over the brimme of it. And it will by little and little draw all the water out of that vessel (so that the end which hangeth out be lower than the superficies of the water) and will make it all come over into any lower vessel you will reserve it in (Digby 1644, 166).

However, the continuation of Power's recipe departs from Digby's text, both in form and in content. Digby's observations refer to the separation of "grosse and muddy parts" from water, namely to a process of filtration of impurities.[21] They do not refer to the separation of two liquids, and do not mention water and wine. Also, surprisingly, Digby's recording does not mention the "atoms" that figure so prominently in Power's transcript.[22] Instead, Digby's explanation reads:

> some lighter parts of water whose chance is to be neere the climbing body of flax, do begin to stick fast unto it: and then they require nothing near so great force, nor so much pressing, to make them climb up along the flax, as they would make them mount in the pure ayre.

By contrast, Della Porta's corresponding recipe is precisely about separating wine from a mixture of water and wine. It is presented as an instance of a more general phenomenon of separation involving two liquids of different density. It claims

> The lighter liquid will ascend through the [linen] tongue, and will drip outside. But when the lighter liquid ascends, it also attracts the heavier liquid. Therefore, when the color appears to change, remove the vessel, for water will run forth. It is clear, that the wine being lighter, it will always ascend to the upper part of the vessel and run forth by the tongue, although all viners say the contrary, that the water will run forth by the tongue, and the wine will stay within [the vessel].[23]

[21] Here is the continuation of Digby's recording: "The end of this operation is, when any water is mingled with grosse and muddy partes (not dissolved in the water) to separate the pure and light ones from the impure. By which we are taught that the lighter partes of the water, are those which most easily do catch. And if we will examine in particular, how it is likely this businesse passeth; we may conceive that the body or linguet by which the water ascendeth, being a dry one, some lighter partes of the water, whose chance is to be neere the climbing body of flaxe, do beginner to sticke fast unto it: and then they require nothing neere so great force, nor so much pressing, to make them clymbe up along the flaxe, as they would make them mount in the pure ayre (Digby, 1644, 166)."

[22] Digby is a corpuscularian, and he uses the term "atoms" in his *Two treatises*, although not in this particular explanation of separation. Robert Kargon called Digby the first author to offer an atomist physics written in English. See Hugh Kargon 1966, 66–67.

[23] Della Porta 1589, 526; 1658, 381. I have slightly modified the translation.

What Power does in his recording is to borrow parts from different recipes and to combine them creatively in order to describe a process which is neither filtration properly speaking (in which impurities are separated from a mixture) nor merely separation "by weight" (since he refers to particles/atoms of wine "ascending" through the linen tongue). The recorded recipe ends with a note that seems to have been added at a later date, since the last line of it is cramped and abridged to fit on the page.

> The reason of this admirable motion, why water of its own accord should thus climb up the filter I shall not have insert as being too tedious, but shall refer you to sir Kenelme in the fore quoted place who admirably discloses the reason of this motion.

We see thus, in this second example as well, that Power is keen to set aside theoretical explanations of phenomena, while concentrating on obtaining an improved and potentially tested recipe. Again, the very last words recorded on the page (in a crammed manner) are "Probatum est."

The second recipe of separation, on fol. 25r reads thus:

> Pliny tells us of another way to Separate wine from water by putting both into an Ivy- cup, so (saith he) shall you see the wine to straine itself through the cup, being porous, & the water to remaine without any effluxion at all. But herein Pliny is extremely mistaken, for if either liquour would remaine in the vessel, wine would, & water distill itself through the pores, because water of all liquids is the most subtill, because 'tis simpler but wine being colored is more compound as arising from the mixtion of Elements which is the cause of colour. Baptista Porta confirms this out of his own experiments as Dr. Brown saith he found both the liquours so soaked indistinctly through the bowle. Brown Pseudodoxia Epid. Lib. 2 Cap. 6.[24]

In this very short recording, Power appeals to at least three different sources. Della Porta's Chapter IV, Book XVIII is a general critical discussion of ancient recipes that pretend to separate water and wine from a mixture with the help of ivy wood or other porous substances. It begins with the paragraph recorded by Power and develops into a criticism of ancient recipes, especially Pliny's. Della Porta claims that wood will not filter wine and suggests as an alternative Democritus' recipe of filtration through a porous sponge. Starting from Della Porta's considerations, Bacon offers, in the *Sylva Sylvarum,* a discussion of different kinds of separation.

> It seemeth percolation, or transmission (which is commonly called straining) is a good kind of separation; not only of thick from thin, and gross from fine, but

[24] Pseudodoxia Epid. 2, 6 (1646, 102): "That an Ivy cup will separate wine from water, it filled with both, the wine soaking through, but the water remaining, as after Pliny many have averred wee know not how to affirme, who making tryall thereof, found both the liquors to soake indistinctly through the bowle."

> of more subtle natures; and varieth according to the body through which the transmission is made: as if through a woollen bag, the liquor leaveth the fatness; if through sand, the saltness, &c. They speak of severing wine from water, passing it through ivy wood, or through other the like porous body; but *non constat.*

Unlike Della Porta, Bacon ends his recording with an emphasis on experimental failure. We can find something very similar in the other source cited by Power, namely in Thomas Browne's *Pseudodoxia Epidemica*.

> That an Ivy cup will separate wine from water, it filled with both, the wine soaking through, but the water remaining, as after Pliny many have averred we know not how to affirme, who making tryall thereof, found both the liquors to soake indistinctly through the bowle (Browne 1646, 102).

Browne agrees with Bacon that the recipe does not work. Power's recording, on the other hand, is much more open-ended. He places side by side Della Porta's more optimistic claims (that one can improve the process of straining following Democritus' suggestions) with Browne direct report of a failed enactment. And this time, Power's recording does not end with *Probatum est*. It looks like more numerous, up-do-date sources were assembled to report a problematic effect and incite the reader's curiosity to find further tests and trials of "filtration" and "separation."

These examples illustrate an intriguing and sophisticated method of using the second edition of the *Magia naturalis,* in mid seventeenth century England, within the context of more recent experimental investigations. Similar references to testing and further developing trials from Della Porta's recipes can be found in Samuel Hartlib's papers and correspondence. Thus, a note in Hartlib's hand, undated, bears the title *Of Fruit-trees* and reads *Probationis or loca selectiora de Experim. fructium etc., ex Bap. Porta* (Hartlib Papers 55/14A/15A).

We do not know which are the selected recipes that Hartlib wanted to try. Books III and IV of the second edition of the *Magia naturalis* contain numerous recipes for "improving" fruits and modifying their properties, as well as preserving and conserving them. In the same note, Hartlib indicates a possible place to try these recipes and experiments with fruits, in the laboratory of his son in law; or perhaps with Clodius' help ("ex recesioni Dn. Clodii"). It is worth emphasizing that Hartlib's attempted trials do not refer to Della Porta's theoretical claims. What is on trial are the experiments themselves, i.e., recipes enacted in a different context. Something similar could be in the background on a somewhat cryptic notation in Bacon's fragmentary manuscript of the *Sylva Sylvarum* in which we can find, in the margin, a note indication "Porta Fol. 195" as a source of an experiment on preservation.[25]

[25] The reference is to the 1591 edition of the *Magia naturalis*. In the published version of the *Sylva Sylvarum*, Della Porta is not mentioned by name, although Bacon takes many of his recipes as starting points for his own investigation. For a discussion see Jalobeanu 2016; Jalobeanu 2020b; Rusu and Jalobeanu 2020.

We see thus a common feature of reading Della Porta's *Magia naturalis* among the English experimenters. They treat the second edition of the *Magia naturalis* as a sourcebook of recipes and experiments to be further investigated, and enacted, often in a different context. This process of selection through enactment leads to further "trials" of the phenomena under investigation. Thus, in a letter to Hartlib, from November 1643, Sir Cheney Culpeper transcribes a recipe from Book XII of the *Magia naturalis*, adding to it that the "thinge may be much improved" by changing some of the ingredients.[26]

In *Pseudodoxia epidemica*, Thomas Browne gives a vivid characterization of this mode of reading:

> that famous Philosopher of Naples, Baptista Porta, in whose workes, although there be contained many excellent things, *and verified upon his own experience*; yet are there many also receptary, and such as will not endure the test: who although he hath delivered many strange relations in other pieces, as his *Phytognomy*, and his *Villa*; yet hath he more remarkably expressed himselfe in his *Natural Magick*, and the miraculous effects of Nature: which containing a various and delectable subjects, with all possible wondruous and easie effects, they are entertained by Readers at all hands, whereof the major part sit downe in his authority, and thereby omit not onely the certainty of truth, but the pleasure of its experiment.

In this passage, Browne identifies two interesting reasons for trying out Della Porta's recipes. The first is to test and see whether they work; and, thus, to assess the truth value of the author's claims. The second has something to do with acquiring the experimental skills needed to produce wondrous effects of on one's own.[27] In Browne's view, an engaged reading of the *Magia naturalis*, a reading leading to enacting its secrets and recipes is likely to yield both a tested selection of recipes and experiments which can provide good starting points for one's own investigations, *and* a way to acquire good experimenting skills of one's own.

Browne argues for reading Della Porta's *Magia* with a Baconian attitude; actively engaging with the recipes and experiments, trying them out and exercising both our evaluative powers, and our experimental skills. Then, presumably, the subsequent recordings would look very much like Power's "experiments and subtleties." They would distinguish between true, tested recipes, mere probable and doubtful. This way of reading was not merely theoretically argued for, by Bacon: it was also employed in practice, in the assembling of the *Sylva Sylvaraum*, where recipes selected from the *Magia naturalis* (on the basis of tests and trials) were improved and updated, then recorded in a different theoretical and experimental context (Jalobeanu 2020b; Rusu 2013). As has been pointed out, Bacon's questions were,

[26] The recipe describes paper balls filled with a mixture of substances (euphorbium, pepper, quick-lime, vine-ashes and arsenic sublimate) that, put on the mouth of the cannon, create a very dense smoke that can blind the eyes of the enemy. It can be found in Book XII, Chapter XII of the *Magia naturalis*. See *Hartlib Papers*, 13/13A–13B.

[27] Browne translates thus Della Porta's *meraviglia*. On this particular aspect of the *Magia naturalis* see Kodera 2014.

in general, much more theoretical, and much less interested in the immediate effect, or the *meraviglia*, than Della Porta's recipes. Meanwhile, it is fair to say that there are several parts of Magia *naturalis* in which Della Porta himself used recipes in a very similar manner. As Browne correctly noted, the language of testing is quite prominent in the second edition of the *Magia naturalis*. Porta claims that he has tried received recipes, that he selected carefully, from many sources, those that work, refuting massive amounts of ancient lore, replacing it with something better and more up-to-date.[28] In the Preface, Della Porta emphasizes the numerous sources he consulted, "books, learned men and artificers" and the fact that his principle was not merely to assemble and transcribe, but also to make "trial of all things" (Della Porta 1658, Preface to the Reader). This is not merely rhetoric; Laura Orsi has shown that the *Magia* was clearly put together with attention to detail and a careful selection of sources.[29] In addition, the second edition often incorporates Della Porta's own investigations, including those recorded elsewhere, in his more natural philosophical works. In other words, we see Della Porta himself engaging in a process of enacting and improving recipes, including some of his own recipes.[30] As Arianna Borelli has shown, Della Porta transforms the "recipe format," adapting it to incorporate more general explanations and theoretical considerations.[31] Sometimes, the "ingenious reader" is called not merely to marvel at the skill of the magician, but also to try for herself, to personally engage in this process of enactment. Here is an example:

> at this time let us see the wayes the engendering such monsters, which the Ancients have set down, that the ingenious Reader may learn by the consideration of these ways, *to invent of himself other wayes* how to generate wonderful monsters. [32] [my emphasis]

[28] See, for example, his recipes of keeping grapes on the vine, from one year to the next, where he claims that all previous "experiments are inventions of antiquity" and they are "but toys and little worth". Della Porta 1658, 120. See also his recipes on metallurgy and glass making, where you can find, repeatedly, "I tried this often, and found it false". Della Porta 1658, 213.

[29] See Orsi, 1997, 104.

[30] Fumikazo claims that "improvement" is a key word in understanding Della Porta's *Magia*. See Saito 2014. Examples of such explicit improvements abound in Book III and IV (summarizing Della Porta's works on plants) and on the books on "mathematical sciences" (optics, hydrostatics, pneumatics, metallurgy). See for example Della Porta 1658, 47–8, 112, 120.

[31] As Arianna Borelli has shown, Della Porta constructs in this way, various scientific concepts (such as the concept of "air" or "wind") or even laws (such as an empirical based "rule of refraction"). As Jalobeanu and Rusu have shown, the same process of formulating general explanations can be seen in connection with processes such as germination, grafting and putrefaction. See Rusu 2017; Jalobeanu 2016.

[32] Della Porta 1658, 47–48. The Latin reads: "Nunc rationes audiamus nostrorum maiorum, ex quibus prodigiosi, & monstruosi partus producantur; ut his consideratis, ex se modos prodigiosos fœtus in lucem producendi ingeniosus excogitare possit., Della Porta 1589, 37. Similar statements can be found in Book III, Chapter V, where the vocabulary of tests and trials is even more pronounced, and the reader is encouraged to step in and do better in attempting to enact the recipe, Della Porta 1658, 68–9."

One recurrent theme in the second edition of the *Magia naturalis* is that of disclosing secrets and illuminating (and explaining) "subtleties" of nature, in ways that attract the reader in the process of enactment. Almost each of the twenty books of the second edition of the *Magia* mentions, in the introduction, the intention of disclosing secrets, and making them accessible to others.[33] Thus, for example, the beginning of Book II states: "[…] it will be time to speak of those Operations, which we have often promised, that we may not too long keep off from them those ingenious men that are very desirous to know them."[34]

Della Porta even gives, in his general introduction of the second edition of the *Magia naturalis*, something akin to a methodology of recording experimental work.

> I shall first set down the inventions of our Ancestors […] Then I shall relate what I know to be true, intermixing some of my own inventions, and such as I think to be of greatest concernment, *and that I have often tried*. I shall besides add some considerations […] as are of great profit [….] always setting down the natural causes; that they being perfectly known, *a man may easily invent and make them* (Della Porta 1658, 111; my emphasis).

If this passage reads surprisingly similar with Bacon's methodological passages, the merit belongs, in part, to English translator. As I will show in the next section, the seventeenth century English translation of the *Magia naturalis* installs Della Porta even more firmly in a Baconian descendance.

3. The English Edition of the *Magia naturalis*: a Baconian Outlook

The English reception of Della Porta is peculiar in its almost exclusive focus on the second edition of the *Magia naturalis*. As has been shown, time and again, the two editions of this very popular book are quite different; and even from their respective title pages one can infer that they were intended to cater for very different readers. The first edition makes ample use of the genre of "books of secrets", emphasizing on the title page the *miraculis rerum naturalium* (Della Porta 1558). The second edition seems to address a different category of read-

[33] This issue of disclosing secrets was subject to recent and less recent debates. Borelli claims that Della Porta deliberately used an older, recipe-format, to embody his own scientific results, and to "reveal" the secrets under the form of heuristic tools. Orsi talks about the explicit tension between the language of *arcana* and an attempt to disclose and organize knowledge (a tension merely implicit in the first edition). On the other hand, Julia Martins sees this "unveiling" of secrets as a characteristic of late sixteenth and early seventeenth century printed books of secrets more general; meanwhile, she recognizes the particularities of Della Porta's *Magia* which maintains its integrity throughout all the seventeenth century editions, unlike other books of secrets which become collections and compilations of items coming from very different sources. See Borrelli 2020; Martins 2015, Orsi 1997.

[34] Della Porta 1658, 26. Meanwhile, in other prefaces, he emphasizes the need for a partial disclosure, so that a particular art does not disseminate "amongst ordinary people." Della Porta 1658, 340.

ers, more interested in the explanation of natural things and the construction of new sciences.[35] The two editions circulated in parallel in Europe; and they were repeatedly translated in vernacular. The remarkable European popularity of the second edition did not extinguish the public's interest in the first edition, which continued to be printed in both Latin and vernacular. There are two translations of the first edition of the *Magia naturalis* in Dutch,[36] numerous reprints and editions of the French translation,[37] a German, and two Italian translations. By contrast, the English case is peculiar. The first edition was never translated into English. The second edition was translated relatively late, in 1658; with a second edition in 1669.

The *Natural Magick by John Baptista Porta a Neapolitane in Twenty Books… Wherein are set for all the Riches and Delights of the Natural Sciences* was printed in London, by Thomas Young and Samuel Speed. No translator's name is indicated on the title page; and not much is known about the two printers, either.[38] The book is a beautiful in-folio, with a lavish engraving by Richard Gaywood, depicting a portrait of Della Porta, and a representation of the four elements and "the Chaos."[39] Like the Latin and Italian editions, the title page lists all the twenty book titles, from "The Causes of Wonderful Things," to "The Chaos." However, a comparison between the titlepages in the original Latin edition and the English translation already shows important differences. First, the English edition emphasizes in big, red letters, the "Riches and Delights of Natural Sciences."[40] Second, the translator operates some interesting changes of the names of the "natural sciences" enumerated on the title page, bringing them more up to date, in line with the interests of the seventeenth-century English *virtuosi*. Thus, for example, the titles of Book V (*De metallorum transmutatione*) and VI (*De gemmarum adulterijs*) are depicted as *Of changing Metals* and *Of counterfeiting Gold.* Books VIII is not called "on powerful medicines" anymore, but merely *Of strange cures*, a title nicely paired with that of book XVII, on "strange glasses." Book X, entitled in the original "on extracting the essences of things" (*De extrahendis rerum essentijs*) becomes in the English edition *Of Distillation*, placing Della Porta's recipes in the context of the English workshops; while the books on "beautifying women," "cookery," "fishing, fowling, hunting" seem to

[35] The title reads *Magiae naturalis libri XX, in quibus scientiarum naturalium divitae & deliciae demonstratum*. On the different receptions of the two editions see Balbiani 1999.

[36] The first translation in Dutch is from 1566 (Plantijn, Antwerp). See Jan Dijksterhuis 2017.

[37] The first French translation appeared in 1565 and, as Balbiani has shown, it was repeatedly printed throughout the sixteenth and seventeenth centuries. Balbiani and Eamon claim that there is also a French translation of the second edition of the *Magia naturalis*; but I was not able to identify a copy of it.

[38] Thomas Young entered the title into the Stationer's Register, on 22 October, 1656. Another entry, from 16 November 1658 certifies his association with Samuel Speed.

[39] The Chaos is the title of the last book of *Natural magick*.

[40] Especially the words "natural sciences" are large, situated in the middle of the bottom part of the title page.

address the public interested in what has been recently called "household science" (Leong 2013). Many subtitles are similarly modified. For example, where Della Porta talks about the "other operations necessary for the Art," i.e., the alchemical/spagyrical art, the translator sanitizes the title into "The Operations necessary for use" (Della Porta, *Natural magick*, 173).

These changes are not merely the printer's choice to sell the book to a different public; they are fully consistent with many other editorial choices made by the anonymous translator who operates a whole set of interventions into the text. To date, these editorial interventions have never been fully investigated.

The most visible of these editorial choices reads like an attempt to put into practice one of Bacon's celebrated precepts on how to write natural history. Bacon states, in the *Parasceve*:

> In the first place, then, no more of antiquities, citations and differing opinions of authorities, or of squabbles and controversies, and, in short, everything philological. No author should be cited save in matters of doubt; and no controversies be introduced save in matters of great moment; and as for everything to do with oratorical embellishment, similitudes, the treasure-house of words, and suchlike emptinesses, get rid of it entirely. Also make sure that everything which is adopted is set down briefly and concisely, so that they are not exceeded by the words that report them (Bacon, 2004, 457).

It would seem impossible to apply such a precept to the quintessential humanistic prose of Della Porta's *Magia naturalis*. And yet, the translator does quite a good job of eliminating almost all the (sometimes long) quotes from Virgil, Ovid, Columella, Oppianus and other ancient authors whose verses feature so prominently in the *Magia naturalis*.[41] When an actual recipe is given by Della Porta by means of the quote itself, what we found in the English translation is an abbreviated statement of the matters of fact, without the literary "embellishments" Bacon so much argued against. Here is an example: Chapter II of Book II of *Magia naturalis* is constructed from quotes borrowed from Virgil and Ovid. The framework is provided by the theory summarized in Book XV of Ovid's *Metamorphoses* which states that matter is an eternal flux, subject to continuous transformations.[42] In this context, several recipes of spontaneous generations are hand-picked and aggregated under this theoretical umbrella. For example, Della Porta's version of *bougonia*, i.e., the recipe for generating bees from the carcass of an ox, is constructed on two lengthy quotes from Ovid and Vergil. The translator summarizes the substance of Ovid lines and eliminates completely 19 verses of Virgil, replacing them with the following statement: "This same experiment, Virgil hath very elegantly set down in the same manner" (Porta 1658, 30). It is worth noting also that these editorial interventions are more serious

[41] With some notable exceptions, such as the verses coming from Lucretius' *De rerum natura*.

[42] Ovid, *Metamorphoses*, 15, 363–76. Ovid ascribes the theory of eternal flux and transmutation to Pythagoras.

in some books than others. Verses are absent from books dealing with plants, animals, metallurgical and other chemical experiments, medicine, pneumatics, optics and hydrostatics. Some verses and quotes survive in the books on cooking, fishing and hunting, which were either considered more compatible with a "humanist" outlook or were simply less interesting than the others for the intended audience of this translation.

A second type of editorial intervention takes place in the Preface to the Reader and consists in a "domestication" of natural magic into something more akin to a Baconian natural and experimental history. Thus, the translator eliminates the very first proposition of Della Porta's Preface to the Reader; the one that tells the reader she holds in her hand the perfect book of magic [*Magiae opus fere absolutum*]. The translation begins with the second proposition, which presents the book as a revised version of one written many years ago, whose popularity, however, deserved a second edition.

> If this work made by me in my youth, when I was hardly fifteen years old, was so greatly received and with so great applause, that is was forthwith translated into many Languages, as Italian, French, Spanish, Arabick; and passed through the hands of incomparable men: I hope that now coming forth from me that am fifty years old, it shall be more dearly entertained. For when I saw the first fruits of my Labours received with so great Alacrity of mind, I was moved by these good Omens; And therefore have adventured to send it once more forth, but with an Equipage more Rich and Noble (Della Porta 1658, The Preface to the Reader).

The reader of the English edition does not have any doubt that what she holds in her hand is a collection of recipes and experiments to be read, enacted and improved in the same way they were enacted and improved by their author and his friends. The Preface also highlights a certain amount of collaborative work, insisting on the contributions the author obtained, through dialogue and correspondence, from philosophers and artisans across Europe.

> And, (without any derogation from my Modesty be it spoken) if every man labored earnestly to disclose the secrets of Nature, it was I: For with all my Minde and Power, I have turned over the Monuments of our Ancestors, and if they writ any thing that was secret and concealed, that I enrolled in my Catalogue of Rarities. Moreover, as I travelled through France, Italy and Spain, I consulted with all Libraries, Learned men, and Artificers, that if they knew any thing that was curious; I might understand such Truths as they had proved by there long experience. Those places and men, I had not the happiness to see, I writ Letters too, frequently, earnestly desiring them to furnish me with those Secrets, which they esteemed Rare; not failing with my Entreaties, Gifts, Commutations, Art, and Industry. So that whatsoever was Notable, and to be desired through the whole World, for Curiosities and Excellent Things, I have abundantly found out, and therewith Beautified and Augmented these, my Endeavours, in NATURAL MAGICK, wherefore by most earnest Study, and constant Experience, I did both nought and day endeavor to know whether what I heard or read, was true or false, that I might leave nothing unassayed […] (Della Porta 1658, 1).

The English translation follows the original closely in this paragraph. However, there is a slight emphasis on the language of trials. In any case, for a mid-seventeenth century reader, all this sounds very Baconian. And so does the next quote paraphrased from Columella, *De re rustica,* but attributed to Cicero: "It is fit that they who desire for the good of mankind, to commit to memory things most profitable, well weighed and approved, should make tryal of all things."

Even more Baconian seems to be the next paragraph, in which Della Porta refers to the "Labours, Diligence, and Wealth, of most famous Nobles, Potentates, Great and Learned Men, wanting to assist me," especially the "Academy of curious Men, who for the trying of these Experiments, cheerfully disbursed their Moneys, and employed their utmost Endeavours, in assisting me to Compile and Enlarge this Volume." Few of the mid-seventeenth century English *virtuosi* were familiar with the Academia Secretorum Naturae, to which these lines are referring. I suspect that for most of the others, the Baconian echoes to a form of "Solomon's House" would have not gone unnoticed.

Many of the short introductions, and sometimes even the titles of Della Porta's chapters have, in English, the same Baconian flavor. For example, the second book, on animals, has a slightly expanded title. The Latin reads: *Varia inter se commisceri docet animalia, ut nova, & utilia progignantur.* The English translator opts for an expanded, more detailed form: "Shewing how living Creatures, of divers kinds, may be mingled and coupled together, that from them, new, and yet profitable kinds of living Creatures may be generated."

The expansion of the general title of Book II echoes a similar change in the title of the first chapter. In it, in the original, Della Porta announces that he will talk about the creatures brought forth by the power of putrefaction. By contrast, in the English translation, this reads: "of Putrefaction, and of a strange manner of producing living creatures." The translator cuts the connection between the process of putrefaction and the production of new animals, and places the emphasis on the artificial production of new species.[43] This emphasis on new kinds of animals is preserved throughout the whole Book II which contains recipes and experiments of which many had become standard subject of experimental research in mid-century England. The translator's choice to eliminate or abbreviate the numerous citations in verse from the original text make the recorded recipe very similar to those that Bacon, Power, Hooke, Boyle and other virtuosi would try for themselves: to generate fruit-flies and "worms" in vinegar,[44] to produce eels in stagnant water, insects from the corpses of dead animals, shell-

[43] In this, he proves to be very much immersed in the experimental context of the seventeenth century. The English virtuosi are extremely interested in manipulating spontaneous generation. See Jalobeanu 2024; Parke 2014. See also Lehoux 2017.

[44] Attempts to generate "worms" from vinegar seem to be a very important topic of discussion among the mid-seventeenth century virtuosi. Recipes and discussions of the various "tests" and "trials" of this recipe can be found, for example, in Henry Power's *Experimental philosophy*, Robert Hooke's *Micrographia,* and Robert Boyle's *Usefulnesse of natural philosophy.*

fish in lakes and mud and so on.[45] Although Della Porta's recipes are standard and, often, merely variations on ancient sources (most notably on Book XV of Ovid's *Metamorphoses*), the language in which some of them are recorded emphasizes, now and then, the process of enactment. This is further highlighted in the English translation which, often, adopts a straightforward Baconian vocabulary. Such is the pair of experiments to produce new plants and animals from soil and mud, respectively. There is a certain similarity between them: after rehearsing ancient sources, Della Porta offers the following instruction on generating different "kinds" of living creatures:

> And look how the mud differs, so doth it bring forth different kind of fishes: dirty mud genders Oysters, sandy mud Perwinkles, the mud in the Rocks breedeth Holoturia, Lepades, and such like. Limpins, as experience hath shewed, have bred of rotten hedges made to fish by; and as soon as the hedges were gone, there have been found no more Limpins (Della Porta 1658, 33).

A similar experiment in Book III involves collecting different kinds of earth, water them, placed them in the Sun, and observe the plants generated in this manner.

> I my self have oft-times by experience proved, that ground digged out from under the lowest foundations of certain houses, and the bottom of some pits, and laid open in some small vessel to the force of the Sun, hath brought forth divers kinds of Plants. And whereas I had oftentimes, partly for my own pleasure, and partly to search into the works of Nature, sought out and gathered together earths of divers kinds, I laid them abroad in the Sun, and watered them often with a little sprinkling, and found thereby, that a fine light earth would bring forth herbs that had slight stalkes like a rush, and leaves full of fine little rages; and likewise that rough and stiff earth full of holes, would bring forth a slight herbe, hard as wood, and full of crevises. In the like manner, if I took of the earth that had been digged out of the thick woods, or out of moist places, or out of the holes that are in hollow stones, it would bring forth herbs that had smooth blewish stalkes, and leaves full of juice and substance, such as Penywort, Purslane, Senegreek, and Stone-croppe. We made trial also of some kinds of earth that had been farre fetcht, such as they had used for the ballast of their shippes; and we found such herbs generated thereof, as we knew not what they were (Della Porta 1658, 59).

The translator follows carefully the original text; but uses a more intentional, hands-on vocabulary, characteristic of enactment. Moreover, he expands the list of results. If the Latin includes among plants produced by very moist, for-

[45] More general discussions of such recipes of spontaneous generation can be found in Francis Bacon, *Sylva Sylvarum* and *Historia et inquisitio de animato et inanimato,* but also in Robert Hooke's *Micrographia* and Henry Power's *Experimental philosophy*. For a discussion see Jalobeanu 2018; 2024.

est earth, *corydalis, portulaca (purslane)* and *sedum*, the translator enumerates: peny-wort, Purslane, senegreek and stone-croppe. Again, this change may reflect the popularity of the recipe in the seventeenth century. In the *Sylva Sylvarum,* Bacon uses this recipe as a basis for an entire experimental research program for generating "plants without seeds."[46] We find enactments of the same recipe in Thomas Browne and John Evelyn who, unsurprisingly, read Della Porta and Bacon together as providing materials for further experimenting with the spontaneous generation of plants (see Jalobeanu 2020b; Matei 2022). The recipe on manipulating animal spontaneous generation also has a remarkable posterity. I will only mention here Bacon's version of it, as recorded in the posthumously published *Physiological remains:* "Mud in Water turns into shells of Fishes, as in Horse-Muscles, in fresh Ponds and overgrown. And the substance is a wondruous fine substance, light and shining" (Bacon 1679, 161).

A careful inspection of such Baconian editorial interventions into Della Porta's texts would be extremely useful and might provide important information on the context, and, perhaps, also on the identity of the anonymous translator; but it is beyond the scope of this article. In what follows I will focus on another class of editorial changes that seem to be directed towards adapting and updating Della Porta's recipes to a new experimental context. I show that the translation reflects elements of what I have called enactment. The translator changes some of the ingredients of the recipe, spells out details of the experimental procedure, sometimes adds procedural steps which are absent in the original. There are numerous such examples and, in the last part of this article I will only discuss a handful of them.

4. The English Edition of the *Magia naturalis* and its Readers: Enacting, Explaining and Updating Recipes

Among the many additions and modifications to Della Porta's recipes, those found in the books on "alchymy" and glass (i.e., Books V and VI) stand out as the most remarkable. They appear to reflect an experimental context more typical of the English seventeenth century. Furthermore, these recipes seem to be recorded for a particular audience of practitioners; or, at least, for curious readers eager to virtually witness such acts of enactment (on virtual witnessing see Cunningham 2001). Even more than in the other books, the reader is often addressed directly in these recipes. In addition, the English translation seems to spell out details of the original recipes, often using vivid, visual details (See Jalobeanu 2016, Jalobeanu 2020b, Jalobeanu and Matei 2020). The reader is told what to look for, how a particular material substance looks like, what color and consistency it has. Sometimes she is told that the result of the recipe is doubtful, or extremely hard to obtain. Some other times the reader is told not to attempt by himself to obtain the result, as in the very beginning of Book V, on *Changing metals*.

[46] See Jalobeanu 2018. For the posterity of this program, see Jalobeanu and Matei 2020.

> I would request the Readers to take them in good part, and to content themselves with these; lest if they attempt to proceed to further experiments herein, they prove themselves as foolish and as mad as those which we have spoken before (Della Porta 1658, 161).

This warning is unsurprising if we consider that most of the recipes of "changing metals" involve extremely poisonous chemical compounds in which arsenic, lead and mercury are incorporated, in one form of another, in tin, brass and iron, to make them "more like silver." The recipes recorded in this book are variations of standard procedures of cupellation, cementation and gilding.[47] But the English translation adds or varies the ingredients and often spells out more detailed descriptions of enactment than Della Porta's original Latin edition. In some cases, the translator replaces alchemical procedures with more straightforward metallurgical techniques. Such is the case of "washing" metals of their impurities. Della Porta transcribes[48] a very compact and rather mysterious recipe of turning lead into tin by "washing and bathing."

> Quod simplici evenit lauacro, dum enim saepous lauatur, ut pars illa terrea abolea tut, in stanum transmutatur, argentum vivum enim illud, quo in puram reducebatur substantiam, & non foedam, remanet in plumbo, unde facile stridorem adducet, & in stanum conuertetur, ex Gebro (Della Porta 1658, 108).

The translator turns this into a much more explicit recording of a particular form of enactment, in which the "washing"[49] is simply equated with "melting repeatedly":

> It may be effected onely by bare washing of it: for if you bath or wash Lead often times, that is, *if you often melt it*, so that the dull and earthy substance of it be abolished, it will become Tinne very easily: for the same quick-silver, whereby the Lead was first made subtile and pure substance, before it contradicted that soil and earthiness which makes it so heavy, doth still remain in the Lead, as Gebrus hath observed; and this is it which causeth that creaking and gnashing sound, which Tinne is wont to yield, and whereby it is especially discerned from Lead: so that when the Lead hath lost its own earthy lumpiness, which is expelled by often melting; and when it is endued with the sound of Tinne, which the quick-silver doth easily work into it, there can be no difference put betwixt them, but that the Lead is become Tin (Della Porta 1658, 163).

The repeated melting of a metal for the purpose of purification and transformation is amply described in the previous chapter, under the title "How to alter

[47] These are standard procedures in metallurgy and alchemy described extensively, for example, by Agricola and Biringuccio. See Principe 2012, 153.

[48] From Pseudo-Geber, *Secretum secretorum*, where the recipe reads: "Lead has also much earthy substance; therefore if it is washed, it is turned into tin by washing" (Newman 1991, 674).

[49] In the alchemical context, washing refers to "mercurial waters," possibly lead acetate.

and transform Tin, that it may become Silver." These, and like recipes circulate in the mid-seventeenth century England. One can find repeated references to how to "turn" lead and tin into silver in the correspondence of Samuel Hartlib, and in the *Ephemerides*. Thus, in 1652, Hartlib's son in law, Clodius, seem to have followed closely George's Starkey's trials to extract "Silver out of Tin."[50] Robert Boyle planned a "Natural history of tin" of which very little is extant, but one of the titles of it was "Of the Smoaking Spirit of Tin."[51] This seems to echo one of Della Porta's recipes which the English translator entitles "To draw forth the life of Tinne" (Della Porta 1658, 173). The recipe refers to ways of melting "repeatedly" tin in well-stopped vases until it loses one of the main characteristics of tin, the "cracking noise" which gives it away.

Another example of recipes recorded in a much more explicit and expanded manner refers to brass, and making brass look more like silver. The two recipes dealing with whitening brass use explicitly the word "counterfeiting," not present in the original Latin and discuss procedure of "imitating" silver, rather than transmuting, or turning brass into silver. The basic procedure seems to be something like cementation, with added steps of purification through treating the results with vinegar or salt.[52] In addition, procedures of straining the molten metal through various layers of materials are amply described. The recipes seem to refer to the fabrication of an alloy of arsenic copper in which silver, and possibly also mercury and lead are present, in certain quantities. The English translator replaces a key ingredient in one of the recipes, namely vitriol, with glass. It is not entirely clear what the purpose of this replacement is, whether it is an ingredient added for a more practical way of grinding another ingredient of the recipe, the *auripigmentum* (arsenic trisulfide),[53] whether the main purpose is to use (molten) glass to flush impurities, or whether the glass is added to the recipe as a source of another metal, a metal that would eventually get into the resulting alloy. There are good arguments for each of these interpretations. Venetians used lead in the process of glass-production;[54] and Neri's *Arte vitraria* contains numerous recipes of lead-glass. The use of glass in melting and purifying metals is well-documented in the seventeenth century. Lazarus Ercker's influential treatise on mining and metallurgy defines glass (*vitrum*) simply as a material produced "by fire" from "all metals" and claims that lead glass is of "most use

[50] Hartlib 2013. 28/2/31B. Accessed on February 1, 2025. See also Hartlib 2013, 30/1/20A.

[51] Boyle Papers XXVII, 1–99, published in Boyle 2000, vol. XIV, 133–45.

[52] Brass-making was still a sensitive issue in the Interregnum England, after a failed Elizabethan attempt to import the procedure and the skilled workers from Germany (and Austria). The way to obtain brass involved a procedure of cementation, i.e., heating up layers of copper and finely grounded "calamine stone" (which contains zinc) in carefully isolated furnaces. For the historical context see Hamilton 1926.

[53] Glass was used to grind *auripigmentum*, which was a key ingredient in painting and illumination of manuscripts.

[54] Lead was used as a stabilizer—either in the form of read lead or in the form of litharge or white lead. See Rasmunssen 2012, 47.

for helping to dissolve Metals."[55] In the English translation of Ecker's treatise,[56] published not very long after the *Natural magick*, the entry on glass reads thus:

> GLASS, *T. Gleizen, L. Vitrum,* is by fire produced from all Metals, but that which is of most *use* for helping to dissolve Metals, is produced from the *Dross* of *Lead* or *Tin,* and so called *Speize Glass,* and *Tin Glass (l.* 1. *c.* 8. and *l.* 2. *c.* 23. *See* Lead) (Ercker 1683).

Della Porta's *Magia naturalis* contains three recipes "to make Glass of Tin", of which one also contains lead as an ingredient. They are merely used to enamel objects with a "rose-colour" called "Rossiclere" (Della Porta 1658, 186). Meanwhile, Ercker's treatise also contains several recipes in which such tin and lead glass are used to purify metals. Thus, "Venetian glass" is said to help purifying silver. The recipe is as highly codified as Della Porta's recipes, and it is not entirely clear what is the ultimate role of "Venetian glass" in the process.[57]

Details apart, we can say that the English version of the recipe would mark an improvement with respect to the original. Indeed, an alloy of copper arsenic with silver and lead would be whiter and more malleable than the original brass, or than the alloy of arsenic copper with silver envisaged by Della Porta. For many practical purposes, it would look more like silver.

In addition to changing ingredients, the English rendering of Della Porta's recipes of making brass looking more like silver also contain more detailed and vivid descriptions of the experimental procedure. The translator addresses the reader directly (very much like Bacon, in the *Sylva Sylvarum*), emphasizing, for example, the difficulty of a particular step, or explaining how a particular material result should look like. In the description of a cementation procedure, the resulting little plates of copper are said to become "[..] so brittle, that if you do but touch them somewhat hard with your fingers, they will soon be crumbled into dust" (Della Porta 1658, 166).

In a different recipe, which uses the power of the Sun to dry the resulting alloy, the translator inserts in the English version of the recipe a step which does not exist in the original:

> Then close it up in a vessel of glass, and lay it under some dunghill till it be dissolved again, and after the dissolution be gathered together into a Gelly; then cast into it ten or eight pieces of brass, and it will colour them all, that they shall most lively counterfeit silver (Della Porta 1658,167–68).

[55] Lazarus Ercker influential work was first published in Prague in 1574 (in German) than translated into Latin, as *Aula Subterranea* and published in successive editions in 1629, 1672 and 1684. See Armstrong and Lukens 1939, 553.

[56] The translator of this work was Sir John Pettus (1613–1690), himself an expert in minding and metallurgy.

[57] In a modern reconstruction, researchers suggested that the Venetian glass is used to lower the melting point and to incorporate the impurities present in the silver. But they take glass to be pure of metal traces. According to Erckert, on the other hand, Venetian glass can be seen as a source of lead (which will further lower the melting point and will indeed help purify a silver alloy). See van Bennekom, van Bork, and Téreygeol, 2021, 1–13.

The last part of this paragraph renders faithfully the end of Porta's recipe. The first part, however, represents an addition. Mark the strikingly visual recording which engages the reader in an act of virtual witnessing a complex experiment. To obtain the result, the experimenter uses different kinds of fire: the artificial fire of the furnace, the heat of the sun, and (added in the English version) the heat of the manure. The result itself is vividly depicted: one obtains a new material which is said to have the consistence of a jelly.

Such details abound in the English translation of the *Magia naturalis*. Books V and VI are particularly rich in such additions, but, as we have seen in the precedent section, such editorial interventions can also be found in Books II-IV. Elsewhere, I discussed such Baconian interventions into the text as they appear in Book XVIII (Jalobeanu 2020b). Much more research needs to be done to elucidate all the additions and changes one can find in the English *Natural magick*. Meanwhile, I think we can conclude from the examples I provided so far that all these additions and changes share some common features.

First, they are consistent with Bacon's requirements to eliminate "antiquity, philology, superfluous narratives, neglectful and high-handed in matters of weight, overscupulous and immoderate in matters of no importance."[58] Recordings are written in a more direct language than the Latin original, including the reader as a virtual witness, in a process of imaginary enactment. The text offers supplementary explanations regarding the methods of enacting and spelling out the details of a recipe. In Bacon's words, experiments should be recorded in a detailed manner, "so that people will be free to make up their minds whether it is trustworthy or not" but, even more importantly, so that they join in the enterprise, "their industry" being "stirred up to look for more exact ways (if possible) of doing the experiment" (Bacon 2004, 469). Similarly, the translator of the *Magia naturalis* engages directly with the reader, and often highlights a Baconian vocabulary of tests and trials. For example, where the Latin emphasizes the knowledge and expertise of the magus, the English translation replace them with "I have made trials myself."[59] Where the Latin text merely talks of disclosing secrets, the English translator emphasize the need for testing and trying out and urges the reader to engage with the results and to attempt to improve them.[60]

[58] Bacon, 2007, 4–5. We have seen that the English translator of Della Porta eliminates and abbreviates verses and quotations. In some cases, he also eliminates authorities, or references to the ancients. Thus, for example, the chapter on the "weapon-salve" (Book VIII, Chapter XII) eliminates Della Porta's reference to the fact that the ancients had such medicines. See Della Porta 1658, 228.

[59] For example in Book X (of Distillation), Chapter IX, Della Porta 1658, 164.

[60] Such is, for example, the end of Book XII, on fires, which ends with the "marvel" of a candle that may last for ever (enclosed in a glass). The English translator emphasize the language of trials (replacing several times *experimentum* with "trial", or "we must make trial". Where Della Porta ends by saying "You have now heard what are the principles: investigate, work, experiment", the English translator addresses the reader thus: You have heard the beginnings; now search, labor, and make trial." The translation is consistent with an interpreta-

Second, the translator updates some of the recorded recipes, including materials, questions and problems more familiar to his mid-century English audience. These additions echo the preoccupations of Hartlib's circle for metals and minerals, the *virtuosi*'s incipient attempts to build a Baconian history of trades (see Ochs 1985, 129–58), novelties regarding gardening and spontaneous generation, and the general interest of the experimentally minded gentlemen for authors such as Erckart, Glauber, van Helmont and Antonio Neri.[61] The unknown translator of Della Porta applies in 1650s what will become the norm ten years later, in the translations commissioned by the Royal Society (See Henderson 2013, 101–22): he *interprets* the text in its new context, a context marked by the preoccupation with Bacon's natural and experimental histories, hands-on experimentation, and the ideal of amelioration,[62] so dear to the reformers in the Interregnum.

Third, as I tried to show with my examples, many of these changes, additions and attempts to spell out Della Porta's secrets resonate with the current interests and laboratory work of his presumptive readers. They correspond to the mid-seventeenth century English projects. Some of these projects are more practical, such as brass-making, silver mining, glassmaking, soil-improving, naturalizing foreign species of plants (Hamilton 1926; Burt 1995, 23–45). Others are more theoretical and esoteric, such as spontaneous generation and transmutation. Many of these projects were deemed "Baconian" (for a discussion see Jalobeanu, 2009, 2015). As we have seen in my precedent examples, the English translation of Della Porta simply ties up the *Magia naturalis* to these Baconian enterprises.[63]

Fourth, the translator adds interesting details and observations which point towards a certain familiarity with seventeenth century laboratory practices. Whether these details come from other, more up-do-date books of secrets, or from the translator's own (or witnessed) practices, it is impossible to tell. It is my surmise that a more careful survey of all the additions and changes in the *Natural magick* might eventually take us a step closer to the possible identity translator, or, at least, to the more particular context in which this work was undertaken.

tion in which the reader was given the "beginning" of an experiment he has to pursue further. See Della Porta 1658, 304.

[61] All these authors are clearly read in the Interregnum and their books will be translated after the Restauration, some by the virtuosi themselves. Again, in Samuel Hartlib's papers there are numerous references to Neri's *Art of glass*. On the English reception of Antonio Neri see Ezra 2022, 88–135.

[62] On Hartlib's circle's programs of amelioration see Matei 2012; Mattei 2015; Clucas 1993, 147–70; Wennerlind 2003, 234–61.

[63] It is also worth noting that the translator eliminates several times Della Porta's self-references to his previous works, such as *Vilae* and *Phytognomonicorum*, replacing them with a more generic title "natural history." See for example the *Proem* of Book VIII, or Book IX, chapter IX.

5. Conclusion

My purpose in this chapter was to investigate a phenomenon of cultural appropriation through which the second edition of Della Porta's *Magia naturalis* became, in the mid-seventeenth century English natural philosophy, a Baconian project. In the first part of the paper I have shown that there is a common denominator in the ways in which several *virtuosi* read and common placed Della Porta, using his recipes in their own experimental investigations. I claim that there is a common way of reading the *Magia naturalis* as a sourcebook of recipes and experiments to be further investigated and enacted, very much like a Baconian natural and experimental history. In a good Baconian fashion many virtuosi even quoted Della Porta as a precursor in the establishment of various philosophical instruments (such as the telescope,[64] the hygroscope,[65] machines to produce wind, but also various optical and acoustic devices) (Powell 1661, 28); or as a co-inventor of arts and sciences (such as the art of glass,[66] distillation,[67] cryptography,[68] and the *scientiae* of magnetism[69] and dioptrics[70]). In the second and third parts of the paper I have shown that a similar reading can be found in the first (and only) English translation of the *Magia naturalis*, the *Natural magick* of 1658. I have shown that, through consistent and organized editorial interventions, the anonymous translator made Della Porta speak the language of experimental philosophy. Thus, secrets and recipes were translated using the language of tests and trials and updated to illustrate the new experimental (and Baconian) context of the Interregnum. In line with Bacon's precepts, the translator sanitized and simplified the text, eliminating some of its humanistic outer shell, and added para-texts stressing the Baconian values of collaboration in collecting, testing and trying experiments. Moreover, as I have shown in the last part of the paper, the anonymous translator operated changes in particular recipes, updating ingredients and spelling out procedures in ways indicative of enactment and experimental practices.

[64] In the seventeenth century, many natural philosophers took Della Porta to be the inventor of the telescope (to Galileo's dismay). On Della Porta's contribution to dioptrics see Borrelli 2014; Zik and Hon 2010.

[65] Robert Hooke cites Della Porta as the "inventor" of the use of "the beard of wild-oat" as a detector of humidity in the *Micrographia*. For a discussion see Jalobeanu 2021; Deckard 2020.

[66] In his extended postface to Neri's *Art of Glass*, Christopher Merret cites Della Porta as a precursor in the "art of glass-making." See Neri and Merret, 1662, 319.

[67] See Pancirolli 1715, 325–26.

[68] Della Porta's "secret ink," and ways of coding and encoding messages figure prominently in Henry Power's manuscript discussed in the first section of this paper. See Sloane MS 1334, 8v, 9r, 12r, 13v and 27v.

[69] See for example Barlow 1616, 6–7. In the manuscript of Henry Power discussed in the first section of this article, Porta's magnetic recipes and considerations represent an important source of experiments. See Sloane MS 1334, 17r–25v.

[70] Pancirolli 1715, 372.

All these changes, translations and updating make Della Porta's English reception in mid-seventeenth century a fascinating phenomenon of cultural appropriation through which the Neapolitan *magus*, humanist, natural philosopher and polymath becomes one more Baconian, like so many of his seventeenth century readers.

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