

# The Secrets of Illusionism in Della Porta's *Natural Magic*: Between Science, Mannerism and Magical Traditions

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**Abstract:** Giovan Battista Della Porta was the main promoter of the idea of “natural magic” in the sixteenth century. This chapter aims to analyse his approach through the prism of illusionism. Based on an archaeology of Della Porta's sources, it will highlight the tensions between magic, natural magic, illusionism and mechanics. In order to account for the specificity of his illusionist experiments between science, spectacle and play, it draws on the aesthetics of the marvel, specific to the Mannerist paradigm. Finally, it shows Della Porta's complex relationship with the traditions of secrets and magical *experimenta*, as both objects of criticism and sources of inspiration.

**Keywords:** Magic, illusionism, Mannerism, game, recreational physics, experiments.

## 1. Introduction

Giovan Battista Della Porta (c.1535–1615) was a famous polymathic scholar. His work ran the gamut, from research into natural magic to writing of plays. As part of the “economy of secrets” that characterised the sixteenth century (see Eamon 1996; Jütte 2015), Della Porta established the notion of “natural magic” in Europe. Although he was not the first to use this apparently oxymoronic term, he was the first to use it as the title of a widely translated and distributed work. Three works bear witness to his uninterrupted meditation on this subject, and form the backbone of his career: his *Magiae naturalis* in four books (1558), its major revision in twenty books (1589) and finally the *Taumatologia* (1606–1615), which remained unfinished. For today's reader, the notion of natural magic seems to refer to the idea of prestidigitation or illusionism (defined as the art of intentionally deceiving the eye and mind of the spectator, by technical and psychological means, in order to give him or her an experience of the impossible). In fact, this is the meaning in which the expression was used by conjurors in the eighteenth and nineteenth centuries (see Astley 1775; Linski 1840). But for the sixteenth century, this identification is not self-evident. A close analysis of the relationship between natural magic and illusionism is necessary.

Although there are some illusionist experiments in Della Porta's work, their presence should not be overstated. In fact, within the extensive *Magiae naturalis*

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(1589), only some of the experiments can be described as illusionism and presented as genuine shows designed to amaze the magician's guests: in particular, the staging of the properties of the magnet (lib. VII), the optical effects (lib. XVII), the analysis of the talking head (XIX, 1) (see Verardi 2022) and some of the tricks described in the last section (lib. XX). The characteristic of these tricks is that their occult property is no longer assumed or presented as such, but concealed or simulated. Although marginal in terms of quantity, this epistemological operation is absolutely pivotal. The secret (technical) strengthens and consolidates the occult (natural). Clinical scientific description gives way to playful staging.

In Della Porta, natural magic has a strong spectacular character. This is why Louise Clubb, Sergius Kodera and William Eamon have highlighted this fundamental dimension of Della Porta's works and the link between the scholar and the dramatist.<sup>1</sup> Extending this approach, I would like to put Della Porta in the wider context of Mannerism in the second half of the sixteenth century. This essential dimension seems to me to have been the subject of only a few studies,<sup>2</sup> even though it can shed a judicious light on Della Porta's singular approach.

The aim of this study is to examine the place of what we can (anhistorically) call "illusionism" in Della Porta's work. I will begin with an archaeology of the dellaportian notion of natural magic, highlighting its internal tensions. I will then briefly outline the structure of Mannerism and show how Della Porta's illusionist games fit into this ludic-artistic sociability. I will then analyse the relationship between illusionism and magic. Finally, I will look more closely at the link between optics, ancient magical traditions and the production of fantastic illusions.

## 2. Theoretical Tension Between Natural Magic, Illusionism and Mechanics

Della Porta's thinking on natural magic is at the crossroads of three major traditions: the literature of secrets, Aristotelian Scholastic physics and Neoplatonic magic. Indeed, Della Porta's profound originality lies in providing a theoretical framework for the corpus of "secrets"<sup>3</sup> he assembles. From the point of view of intellectual history, Della Porta is both an heir to William of Auvergne (†1249) and Marsilio Ficino (†1499), but also to all their ambiguities.

Theorised by William of Auvergne in his *De universo* (c.1235), the concept of *magica naturalis* can actually be broken down into three components: prestidigitation (*trajectationes*), the science of natural occult properties (natural magic *stricto sensu*) and the art of "prestiges" (fantastic appearances).<sup>4</sup> This tripartition was still very much alive in the Renaissance. A work as culturally important as

<sup>1</sup> See Clubb 1965; Kodera 2012; 2014; 2020; Eamon 2017.

<sup>2</sup> See Gareffi 1984; Biassoni 1990; Trabucco 2008, XI, XXIX.

<sup>3</sup> See Della Porta 1589, [a5]r: "index secretorum."

<sup>4</sup> See William of Auvergne, *De universo*, II, pars III, cap. XXII (Paris, BnF, Latin 15756 [13th c.], 222rv). Boudet 2006, 128; Rioult 2021, 22–5; 2023.

the *Malleus maleficarum* (1496) makes extensive use of it (see Rioult 2023). Illusionism thus occupies a complex position, since it is both a component of the category of natural magic *lato sensu*, and at the same time is distinct from natural magic *stricto sensu*! This hesitation is mainly due to two different ways of looking at these disciplines. From a *phenomenological* point of view, the two merge in the production of natural wonder. However, from the *ontological* point of view, which is concerned with determining the true nature of causes, they are easily dissociable (artifice *v.* natural property). The conceptual distinction between the occult and the secret, well highlighted by Nicolas Weill-Parot and Donato Verardi, is therefore particularly useful.<sup>5</sup>

To this ancient use of the concept of natural magic must be added a second, more recent but equally decisive influence, that of Hermeticism and Neoplatonism, reintroduced into the Latin West by Ficino at the end of the fifteenth century. Della Porta adopted the theoretical framework of natural magic defined by Ficino and Pico della Mirandola in 1486 (see Zambelli 2007; see also Hadot 1982). Drawing on the vitalist metaphysics of Plotinus' *Enneads* (see Robichaud 2017), Ficino linked natural magic and agriculture (see Ficino 1989, 396). Plotinus also continued to figure prominently in Della Porta's work. It is the main reference given by the Neapolitan to his famous conception of the magician: "Plotinus Magum naturae ministrum, non artificem vocat" ("Plotinus called the magician the minister of nature, and not the artisan of it") (Della Porta 1558, 2; 1589, 2; my translation). This gloss of Plotinus (*Ennead* 4, 31–45) is probably copied from Pico della Mirandola's *Oratio de hominis dignitate*.<sup>6</sup> This strong Plotinian foundation is not without consequences. Plotinian metaphysics rejects all forms of mechanics.<sup>7</sup> Precisely, Plotinian "technique" has no mechanical dimension, but is a means of accompanying the unfolding of nature.<sup>8</sup> It always acts *katà phúsin* ("following nature"). In comparison with William of Auvergne, illusionism remains an unthought-of aspect of the Plotinian approach (precisely because it is an anti-natural and anti-magical ferment).

This naturalistic context makes Della Porta's reference to the *Mēkhaniká problēmata* all the more surprising and interesting. This anonymous text from antiquity, attributed to the pseudo-Aristotle (but also to the Pythagorean Archytas), was rediscovered, translated into Latin and published at the beginning of the sixteenth century. This work opened up a profoundly different field of thought, that of mechanics and its artifice, thought of as a domain *parà phúsin*

<sup>5</sup> See Weill-Parot 2021; 2013 33–5; Verardi 2017, XXVI–XXVII; 2018a 149–51.

<sup>6</sup> See Pico della Mirandola 1496, "[Oratio de hominis dignitate] Oratio Ioannis Pici Miran. concordiae comitis," 2R1v [137v]: "Meminit et Plotinus, ubi naturae ministrum esse et non artificem magum demonstrat."

<sup>7</sup> See Plotinus *Ennead*, 5, 9, 6 (cf. 1984); Gandillac 1952, 35. On the metaphysical stakes of this rejection, see Rioult 2022; Rioult 2023a.

<sup>8</sup> See Plotinus *Ennead* 5, 8, 1 (cf. 1984, vol. V, 238–39): "the arts (*tékhnas*) do not simply imitate what they see, but they run back up to the forming principles (*lógos*) from which nature (*phúsis*) derives".

(“praeter naturam” in Tomeo’s Latin translation; see Aristotle (ps.) 1525, 23r.), in other words, “against” or, better still, “outside nature”. The *Mechanical Problems* mark a break with the primacy of *phúsis*, so much so that they stand out as the decisive text contributing to the technical and mechanical inflection of the sixteenth century and to the emergence of a science of machines (see Rose and Drake 1971; De Gandt 1986). However, in the sixteenth century, the term “mechanics” had not yet taken on its current meaning. It was still marked by the ancient meaning of *mēkhanē*: cunning, stratagem or artifice. This can be seen in Della Porta’s reference to the *Mechanical Problems* (848a).<sup>9</sup> Although it is present but implicit in the first edition (1558),<sup>10</sup> he explicitly claims it in the second (1589), which is expanded on this point:

If you would have your works appear more wonderful (*mirabiliora*), you must not let the cause be known (*causae cognitionem tollito*): for that is a wonder (*mirum*) to us, which we see to be done, and yet know not the cause of it: for he that knows the causes of a thing done, doth not so admire the doing of it; and nothing is counted unusual and rare, but onely so far forth as the causes thereof are not known. Aristotle in his books of Handy-trades, saith, that master-builders frame and make their tools to work with; but the principles thereof, which move admiration, those they conceal (*Aristoteles in Mechanicis ait, Architecti instrumenta fabricant, celantes principia illius, quae admirationem praestant*). A certain man put out a candle; and putting it to a stone or a wall, lighted it again; and this seemed to be a great wonder: but when once they perceived that he touched it with brimstone, then, saith *Galen* [1538, 98], it ceased to seem a wonder (Della Porta 1589, 3; 1658, 4).

By claiming the possibility of concealing the causes in order to amplify the wonder, Della Porta leaves the realm of natural magic *stricto sensu* and returns to illusionism. Breaking with Plotinus, *artifex* is added to *naturae ministrum*, secrecy to the occult. The *Quaestiones mechanicae*—and also Heron of Alexandria’s *Pneumatics* (see Trabucco 2010, 84–7)—played a fundamental role for Della Porta in making him aware of the potential of *artificial* secrets and integrating them with natural magic. Indeed, in his work, secrets of occult properties (of nature) and artificial secrets (of technology), which aim to *simulate* occult properties, coexist (see Verardi 2018, 149). In 1589, as his experiments became more complex, Della Porta reinforced this technical dimension by introducing the term “mechanicus” into his portrait of the magician. In his introduction, which pas-

<sup>9</sup> Della Porta follows Tomeo’s translation, see [Aristotle], *Aristotelis quaestiones mechanicae* 25r: “Hanc igitur in circulo existentem animaduertentes naturam architecti, instrumentum fabricant celantes principium, ut machinae solum manifestum sit illud quod admirationem praestat, causa vero lateat”. Fausto and Piccolomini use different translations. See [Aristotle] A5r (cf. 1517); Piccolomini 1547, 8v.

<sup>10</sup> Della Porta 1558, 3: “Sic debita active passivis addens mira produces, et si mirabiliora quaesieris, haberique vis, eorum sufficientis causae cognitionem tollito.”

tiches Vitruvius,<sup>11</sup> he states that the magician “must be a skilful workman (*artifex et mechanicus*)” (see Della Porta 1558, 2; 1589, 3; 1658, 3).

Considered from the point of view of illusionism, the “mechanical” thought that unfolds in the *Magiae naturalis* is above all a thought of the *mēkhanē*, thought as a hidden ruse and an artificial secret. This “mechanical”—but non-“machinic”—conception explains the apparent heterogeneity of “some mechanical Experiments” (XX, 10). It is very much part of the dellaportian paradigm of natural magic: the application of simple things to one another (see Della Porta 1589, 302; 1658, 409). By introducing *mēkhanēmata* (artificial things) alongside *phūsika* (natural things), however, it revives the tension within the concept of *magica naturalis* initially defined by William of Auvergne.

While most commentators have concentrated on the most spectacular experiments, perhaps not enough attention has been paid to the way in which Della Porta solves the problem of levitating the magnet stone in the air (VII, 27). Although he was unable to reproduce the experiment, Della Porta used an “*invisibili nexu*” (“invisible band”) to make the stone levitate (see Della Porta 1658, 204). In this borderline case, the occult property of the magnet was consolidated by a secret, a mere conjurer’s trick. In fact, the use of invisible thread is a classic in the literature of illusionist secrets, where it is generally used to make various objects move invisibly (see Goulding 2006a, 147–48). Della Porta considers that this expedient provides proof of concept for the levitating statue of Arsinoe made by Dinocrates of Rhodes, reported by Pliny (*Nat. hist.* 34, 62) and Augustine (*Civit. Dei* 21, 6), who refers to these artificial and artful installations as “*mēkhanēmata*”. From this little—but highly significant—trick, we can see that the public’s perception of the phenomenon takes precedence over its ontologically accurate reproduction. In other words, artifice takes precedence over *mīmēsis* (as *poēsis*, i.e. as support to the unfolding of nature).

To resolve the apparent contradiction between Plotinism and mechanism, we need to take a step backwards. Della Porta’s work is governed by the production of marvellous things, *thaumata* (gr.) or *mirabilia* (la.). This is highlighted by the title of the first book of the *Magiae naturalis* (1589), *De mirabilium rerum causis*, as well as the title of the last revision of the corpus of secrets gathered by Della Porta: the *Taumatologia*, the science of wonders (see Della Porta 2013). In this way, Della Porta gradually minimises the notion of magic and refocuses on that of wonder, most probably for reasons of both epistemological accuracy and strategic prudence (after his troubles with the Inquisition). But the marvel is defined first and foremost—not by the actual effect—but by the perception of the observer. Della Porta’s science is therefore a *spectacular* science, which presupposes an audience. Della Porta’s work is first and foremost an aesthetic (in the sense of *aīsthēsis*, a perceptual paradigm), governed by the concept of wonder.

<sup>11</sup> Compare “*Quid sit Magie naturalis*” (I, 1) and “*De magi institutione...*” (I, 2) with Vitruvius, *De arch.* 1, 1: “*Quid sit architectura, et de architectis instituendis.*”

While, not without reason, Kodera (2014, 15–6) and Eamon (2017, 16, 33) have proposed linking Della Porta to Baroque science and culture, I will defend the idea that it is the socio-aesthetic paradigm of Mannerism that provides the most effective key to understanding Della Porta’s apparently ambiguous position, torn between art and science.

3. *Virtuosità, Gioco and Meraviglia*: the Coordinates of Mannerism

Since it is not possible to present Mannerism in its entirety in the context of this study,<sup>12</sup> I will only highlight its principal aspects. Mannerism is first and foremost a concept inherited from the history of art. The first international European style, it spans roughly the period 1520–1620. In contrast to the mimetic conception of Renaissance art (see Alberti 2011), Mannerism frees itself from the natural referent and insists on the *maniera* (technique) and the “stylish style” (see Shearman 1990, 17). According to the great art historian Robert Klein (2017, 59), it developed an “aesthetic of *artificium*,” geared towards producing striking “effects” (Klein 2017, 85). Henceforth, art was no longer bound to respect the natural process; it fully embraced its *artifice* (literally “made by art”) and placed it at the service of the “viewer experience” (see Williams 1997, 73–122). Mannerism cannot be reduced to the plastic arts. It went beyond them to form a veritable socio-aesthetic paradigm, based in particular on the society of Italian courts and academies (see Schlosser 1924, 338).

To think effectively about the Mannerist paradigm, I identify three transversal concepts: *virtuosità* (or *ingegno*), *gioco* and *meraviglia* (Fig. 1).

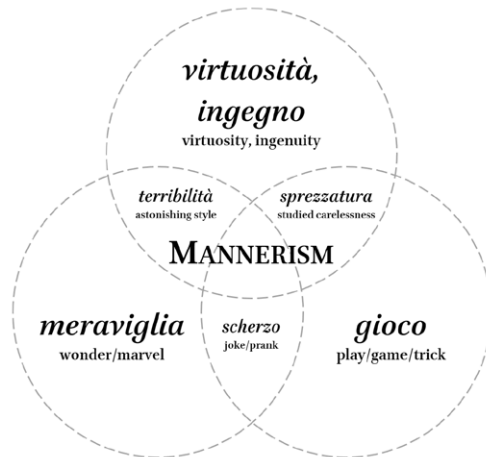


Figure 1 – Schematic determination of Mannerism. © Thibaut Rioult.

<sup>12</sup> See Schlosser 1924; Klein 2017; Shearman 1990; Pinelli 1993; Falguières 2004.

This triad offers the possibility of a simple determination of the fundamental coordinates of the socio-aesthetic paradigm of Mannerism. It makes it possible to unite the arts (visual arts, theatre, etc.), science in the broad sense (natural magic, mathematical recreations, etc.) and techniques (crafts, machines, etc.) in a common aesthetic paradigm.

Indeed, as Klein points out, in sixteenth-century Italy, Mannerism was characterised by the “*artista-virtuoso* equation” (Klein 2017, 85). This valuable indication avoids short-circuiting the figure of the courtier artist by too quick a comparison with the English *virtuoso* (art lover, then experimental naturalist philosopher), who predominates in historiography (see Houghton 1942a; 1942b; Hanson 1942), probably under the influence of Robert Boyle’s *Christian Virtuoso* (Boyle 1690). During the Italian Cinquecento, the notion of “*virtuoso*” became synonymous with that of artist. The term emphasised the artist’s technical excellence.

At a deeper level, *virtuoso* etymologically refers to *virtù*, one of the most important concepts of the Renaissance, theorised by Machiavelli (1469–1527) (see Rélang 2003). Essential for the courtier, *virtù* refers to the human skill, ability or power to master *fortuna*, chance and disorder in the world, by force or deception (see Vissing 1986). In a sign of the growing importance of intelligence, the Machiavellian pair *virtù / fortuna* is replaced by the pair *ingegno / fortuna* in Tasso’s 1582 treatise on the game.<sup>13</sup> In a powerful philosophical gesture that was to have a major influence on his contemporaries, the poet made “gioco” (defined as “a contest of *fortuna* and *ingegno* between two or more”) the central operator in the life of the Italian courts. For the Mannerist theorist Gregorio Comanini, play (*gioco*) became a central category that encompassed painting, but also life, politics and even the creation of man, with pleasure as its end in view (see Comanini 1591, 80–1; 2001, 38–40). More generally, the second half of the sixteenth century saw the emergence of a specialised literature devoted to play, which became a subject in its own right (see McClure 2013, 3).

But above all, the work is inseparable from the artist, who uses it to display the power of his *ingegno*. The Cinquecento was the era of “self-fashioning” (Greenblatt 2005) for the “courtier artist” (Deswarte 1987). The influence of Castiglione’s *Cortegiano* (1528) was particularly clear on Vasari, as it was on Dolce and Comanini. Like the courtiers, the *virtuosi* adopted “sprezzatura” (“studied carelessness”) to appear even more gifted. In 1557, Ludovico Dolce (1770, 14; 1557, 8v) offered a powerful reinterpretation of this key concept in the field of art: “ease is the highest accomplishment of any art, and the most difficult to be attained; that hiding art is the utmost extent of art (*è arte a nasconder l’arte*).” With Man-

<sup>13</sup> See Tasso 1582, 5r: “che cosa è giuoco ? [...] Una contesa di fortuna, e d’ingegno fra due e fra più. [...] Ma crediam noi [...] che nella corte di fortuna, e d’ingegno si contenda fra cortegiani? [...] Et nelle scuole fra i filosofanti ? [...] Et così in tutte l’arti, & in tutte l’attioni di fortuna, e d’ingegno si contede? [...] Dunque la vità è un giuoco.”

nerism, art is seen as a knowledge of concealment or, better still, of encryption, which creates a space for play with the viewer. As a result, Mannerism is also a hermeneutic culture: you have to be able to see behind the appearance, decipher the enigma, interpret the sign. By engaging the viewer's intellect in a labyrinth, it leads them to a characteristic state: wonder. Whether the mind is forced to admit its failure (aporia), or on the contrary overcomes and unveils the mystery in a flash (Eureka effect), it is stunned. This is why art historian Patricia Falguières (2004, 25) proposes to "define Mannerism as an aesthetic of wonder, specific to an aristocratic society, eager for surprises and exclusive, not devoid of narcissism." Wonder is the touchstone for the effectiveness of art. Where the Baroque favoured emotion, Mannerism relied on the intellect. For the humanist Paolo Morigia (1595, 287–89), the works of *virtuosi* challenge the intellect. By overpowering it, they "leave intelligent spectators stunned (*stupidi*)."

The notion of wonder—so central to Della Porta's work—must be considered independently of its present-day meaning, which has particularly faded. For the Cinquecento, *meraviglia* was a violent emotion. The clinical definition of this emotion given by the physician Bartolomeo Traffichetti clearly highlights its cognitive and physical effects: "the wonder (*la meraviglia*) is nothing other than a suspension and fixation of the mind [...] because of which we remain motionless, and distracted from everything else" (Traffichetti 1565, 120v–21r; my translation). In this respect, Arcimboldo is an emblematic Mannerist artist. An outstanding technician and inventor of genius, he was a "virtuoso spirito", celebrated for the "sottigliezza del suo ingegno" and above all for his ability to make princes "rimanere pieni di stupor" (Morigia 1592, 566; 1595, 278). His portraits are enigmas that play on illusion and the superimposition of images and meanings. For Comanini (1591, 46), Arcimboldo's works are "scherzo" (jokes), just like the "scherzi d'aqua" of Mannerist gardens: they are artifices that provoke amazement in the visitor. The issues at stake in Mannerism are summed up perfectly by the question of the sphinx guarding the entrance to the Mannerist garden at Bomarzo (c.1550–1580) (see Bélanger 2007), also known as the Park of Monsters (filled with monstrous sculptures, water jets, etc.): "Tu ch'entri qua pon mente || parte a parte || et dimmi poi se tante || meraviglie || sien fatte per inganno || o pur per arte" ("You, who enter here, apply your mind, from one end to the other, and tell me then if so many wonders were made for deception or for art"). This rhetorical question clearly exposes the Mannerist intertwining of play, enigma, wonder, art and deception, which also characterises Della Porta's work. Indeed, Louise Clubb has shown that the tension between *meraviglia* and order, articulated by the *ingegno*, was central to Della Porta's theatre (see Clubb 1965, 145).

More generally, wonder makes it possible to unify the whole of his work, from his theatre to his natural magic. Similarly, by comparing Comanini and Della Porta, Biassoni has highlighted the Mannerist character of his theatre, haunted by the question of artifice and cunning deception.<sup>14</sup> The comedy *La Carbonaria*

<sup>14</sup> See Biassoni 1990, 511. See also Clubb 1965, 179–93.

(1601), for example, praises the “bello inganno [...] pensato con tante arte ed ingegno” (Della Porta 1601, 26v–27r, II, 2). Once again, we see the link between art, *ingegno* and *inganno*. Della Porta’s work thus establishes an aesthetic that is as much art as science or technique. Placed in the Mannerist context, his position becomes clearer. Although spectacular, his experiments were less spectacles than *games* designed to test the intelligence of his companions.

#### 4. Della Porta, Mannerist: Wonderful Games for the Initiates

The shift from the scientific to the playful is particularly clear in the book on magnets in the *Magiae naturalis* (1589). After studying the fundamental properties of magnets (VII, 1–8), Della Porta immediately presents a “ludicrum magnetis” (“magnetic game” or “recreation”) that “gives pleasure to friends” (VII, 9). In fact, the use of concealed magnets is above all an opportunity for Della Porta to describe truly marvellous spectacles to show his friends (*admirabile spectaculum... amicis exhibuimus*; Della Porta 1589, 136; 1658, 199): “How to make an Army of Sand [= lodestone powder] to fight before you” (Della Porta 1589, 136; 1658, 199) (VII, 17). The experiment can be further enhanced into a “greater wonder, because what is done on a plain Board, may be done hanging in the Air, that you may see them like the Antipodes in Battel” (Della Porta 1589, 136; 1658, 199).

This spectacular dimension was barely present in the first version of *Magiae naturalis* (1558). Della Porta needed the time to perfect his spectacular practice in contact with an audience of initiates. After all, Della Porta’s magical and playful experiments were aimed primarily at his friends. His work is inextricably linked to the Mannerist sociability of the academies of the Cinquecento. After probably making his debut at Girolamo Ruscelli’s Neapolitan Accademia Segreta (active c.1541–1548) (see Eamon and Paheau 1984), Della Porta founded his own Accademia de’ segreti in the 1560s, about which we have very little documentation (see Gliozzi 1950). Finally, towards the end of his life, he became one of the leading figures at the Accademia dei Lincei (founded in 1603) and the Accademia degli Oziosi (founded in 1611) (see Quondam 1975, 249). Various testimonies, such as those by Bargagli (1574) and Guazzo (1574), provide an insight into the playful world of the courts and academies of the Cinquecento (see Bargagli 1574; Guazzo 1574; Gvozdeva 2014).

Guazzo’s *Civil conversazione* (1574) devotes its final part to courtly customs in the Piedmontese town of Casale Monferrato (see Guazzo 1574; Guérin 2006). In this key account, Shearman sees

a faithful account of typical society behaviour, and by our standards it is far from moderate in its artificiality. It is a picture of an insulated society, self-sufficient in its amusements [...]. They drink out of glasses shaped like boats. They play elaborate and artificial games, tests of invention and wit in which the matter of the answer is irrelevant and only an artful display is required (Shearman 1990, 41).

The *Magiae naturalis* contains games and recreations designed to amaze the guests at banquets, which emphasise the playful aspect of these illusions (unlike the *Pneumaticorum*; see Trabucco 2008, XXII):

*How we may by drinking, make sport (illudere / burlare) with those that sit at Table with us.*

When friends drink together, if we would by such a merry deceit delude (*iucunda simulatione deludere*) the guests that are ignorant of the cause hereof, we may provoke them to drink with such a Cup [etc.] (XVIII, 2) (Della Porta 1589, 282; 1611, 676; 1658, 383).

In this way, the guests are “provoked.” Mannerist games always involve an element of challenge and rivalry. The *ingegno* is put to a severe test. As the French illusionist Prevost said of one of his tricks: “what will be found beautiful in this game is [...] when after having seen you do this, they will not be able to do it after you.”<sup>15</sup> Similarly, in his *Giochi di carte bellissimi* (1593) published by one of the publishers of Della Porta’s works (based on typographical material used), the Neapolitan illusionist and “virtuoso” Horatio Galasso (c.1559-post 1617) (see Massironi 2016) recommends (Galasso 1593, 1): “But you must break up the three rows of cards right away, so that no one else will know how to do it [sc. a beautiful mathematical game].”<sup>16</sup> The *virtuoso* first shows his *virtù*, his strength. This is also the challenge that Della Porta throws down to his reader: “but if one that is ingenious do the business, he will do more and greater Feats then we can write of” (Della Porta 1589, 136; 1658, 200) (VII, 17). It is worth noting that in Italian *gioco* can be translated as “game” as well as “trick” (e.g. “giochi di mano”), so the notion of illusion and recreational deception cannot be dissociated from play.

The spectacular dimension of the experiments with magnets is underlined by the use of music (a Mannerist recreation typical of Italian courts) to accompany some experiments:

*How iron will be made leap (saltet) upon a Table, no Loadstone [sic] being seen.*  
[...] I can so place two stones, that one of the needles shall go upon the head, the other upon the point; and sometimes one shall turn, then both at once, or they shall dance orderly, and move when any [flute] musick is playd on (*ad tibiae sonum*). And this is a pretty sight to shew your friends, that cannot but admire it (Della Porta 1658, 202; my emphasis).

For readers familiar with the literature of secrets, the use of the verb *saltare* (to dance, to jump) refers to a recurrent type of experiment in which a small object (a ring, a loaf of bread) moves on its own, which is widely found in medieval manuscripts (see Da Silva Baptista 2023). The famous *Dificio de*

<sup>15</sup> Prevost 1584, 45r: “ce qui sera trouver beau ce jeu, c’est [...] quand apres vous avoir veu faire cecy, on ne le saura faire après vous”. On Prevost, see Rioult 2024.

<sup>16</sup> Galasso 2007, 67; 1593, 25: “guastate subito le tre file di carte che nesciuno lo saperà fare”.

*ricette* (1529) described how to “far saltar uno anello per la casa.”<sup>17</sup> The trick interested scholars. Gabriele Falloppio (+1562) echoed those who “faciunt bagatellas” and used a “praestigiatorum annulus” (illusionist ring), a hollow ring filled with mercury that jumps out on its own when heated.<sup>18</sup> Della Porta was well acquainted with the literature of secrets. For example, the levitation of an empty egg filled with dew described in the first edition of *Magiae naturalis* (1558, II, 14) is a classic of illusionist secrets (see Vercelino da Fogo [ca. 1510], no. 9). While the courtiers entertained themselves with his trick rings, Wecker also reported in his *De secretis* (1582) that he had seen a Venetian juggler (*Histrione*) make a ring dance (*saltat*) in a glass, to the sound of a tambourine (thanks to a “subtilis capillus”) (see Wecker 1592, 950). As Kodera put it, “Della Porta certainly shared more in common with the *saltimbanchi* in the piazza than he himself would have willingly admitted.”<sup>19</sup> So, in my opinion, Della Porta (and his audience) could not have been unaware of the animation tricks. He therefore proposed an alternative version based on the magnet, which was a way of playing with the *a priori* knowledge of his “initiated” spectators, by substituting an unexpected artifice (magnet) for an expected stratagem (mercury, hair).

Mannerist art was built on a complicity—better still, an intelligence—between the artist and his audience. This audience of *intenditore* (connoisseurs, initiates), reflecting the stakes of distinction in the courts, was built in opposition to the profane and coarse public. This opposition is typified by the playwright Girolamo Razzi in the pair “nobilissime donne” (most noble ladies) and “donniciole” (ignorant women).<sup>20</sup> The *donniciole* serve as a figure of repulsion, but also as a target for pranks and tricks, as Luca Pacioli had already demonstrated a century earlier when describing tricks as intended to “amaze idiots [...] This will seem like a miracle, especially to women (*donniciole*) who know nothing” (Pacioli 1496, 238v, III, 6). This opposition also runs through the work of Della Porta, for whom the *donniciola* (lat. *muliercula*) is a symbol of credulity. Although less marked than in Pacioli’s work, this dynamic of defiance is also present in the Neapolitan’s work, which puts his friends’ “solertia” (Della Porta 1589, 270, XVII, 12) (ability to discover causes) to the test. In my view, spectacular experiences are therefore the site of a meta-spectacle, where those who have understood (the *intenditori*) can play on those who remain “stupidi”. The difference in knowledge is not limited to the relationship between the performer and the spectators, but actually extends to all the participants, creating a split double audience. It is precisely this spirit that Wecker describes in relation to a “Jocus Necromanticus” staged in Bologna (c.1560) by the physician Andrea Bianchi to mock a lover with a

<sup>17</sup> *Opera nvova intitolata dificio de ricette* 1529, 11.

<sup>18</sup> See Falloppio 1566, 703. See also Wecker 1582, 944.

<sup>19</sup> Kodera 2012, 22. See also Della Porta 1658, 37: “Dog that will do tricks and feats” (II, 7).

<sup>20</sup> See Razzi 1563, 8. Spelling variants of “donniciola” have been standardised.

talking skull: the laymen are frightened while the initiates are amused (see Wecker 1592, 949–50). This trick is also explained in illusionist chapbooks (Fig. 2). Magical motifs—because of their extreme nature—are the most effective way of distinguishing the gullible.



Figure 2 – L’Escot, *L’Alexis Firmaco*, 8. <[https://commons.wikimedia.org/wiki/File:Firmaco\\_-\\_talking\\_head.png](https://commons.wikimedia.org/wiki/File:Firmaco_-_talking_head.png)> (Public domain).

##### 5. Della Porta, Critic: Simulated Magic Between Demystification and Fascination

Although the frame for these experiments—particularly with magnets—is more wonderful than magical, the fact remains that “many that were ignorant of the business, thought it was done by the help of the Devil” (Della Porta 1589, 136; 1658, 199) (VII, 17). While Della Porta works towards the naturalisation and emancipation of magic from the demonic realm (see Verardi 2018b, 13–37), he frequently uses forms and themes inherited from magical traditions. This ambiguous articulation corresponds to one of the possible definitions of illusionism: “simulated magic” (Lassaigne 1851, 2; Robert-Houdin 1868, iii), or recreational magic.

The section on magnets is enriched by a long description of an artificial divination mechanism (VII, 29), under the heading of “ludicra” (entertaining games, “merry conceits”):

*How a man of wood may row a little Boat; and some other merry conceits (ludicra).*

The fraud (*doli / inganni*) here is notable; for women (*mulieres / donneciuole*) shall see a man of wood rowing a little boat well waxed, in a large vessel full of

water, and they can counterfeit hereby, as impostors (*impostores / ingannatori*) do divination by water. The fraud is thus began [*sic*]: the vessel is filled with water, a little ship of Wax is put into it, or else of wood; in the middle sits a little man of wood [...]: let him have oars in his hands, and under his feet a piece of iron. Let the Alphabet be made on the brim of the vessel, round about: wherefore a woman coming to enquire of some doubtful matter, the little man of wood, as if he would give a true answer, will row to those letters that may signifie the answer: for he that holds the Loadstone in his hand, under the Table, can draw the boat which way he will, and so will answer by joyning these letters together. Or put a boy of cork into a glass viol, with a broad mouth, that turns himself about the needle equally balanced; and about the glass vessel, make the Alphabet, that the man turning round about may give answers (Della Porta 1589, 140; 1611, 323; 1658, 204).

Della Porta adds an alphabet to the trick of the magnetised boat described by Cardano (see Cardano 1550, 188). He endows a simple curiosity with a divinatory framework, making it a real showpiece. Although Della Porta presents this trick as being in use among the charlatans of his time, it is also part of an ancient tradition of hydromancy or dactyliomancy. In fact, the use of a round basin with the letters of the Greek alphabet on its rim is attested as early as the third century (see Chuvin 2004, 252–55). In his *Res gestae*, first published in 1533, Ammianus Marcellinus (c. 330–395) describes this system of dactyliomancy in detail (see Ammien Marcellin 1533, 258–59). The purified officiant holds over the basin a ring at the end of a thread, which points successively to letters, thus providing an answer to the question posed.

The legacy of this trick is significant. In 1641, the great scholar Athanasius Kircher extended this work by describing and illustrating the operation of similar magnetic instruments (Fig. 3) in his *Magnes sive De arte magnetica* (see Kircher 1641, 344, 373, 392). By this time, oracular (magnetic) games were being incorporated into cabinets of curiosities, as evidenced by the inventory of Manfredo Settala's seventeenth-century cabinet (Fig. 4): "Magnetic joke (*scherzo*), for guessing (*indovinare*) whether girls will willingly become nuns, and for many other gallantries, since we make the lizard stop wherever we want."<sup>21</sup> Alongside this device are a magnetic siren (Fig. 5) and a magnetic fish.<sup>22</sup> More generally, Della Porta's proposed scenario would make this experiment an important milestone in the history of eighteenth-century recreational physics, in the form of an ingenious mermaid or swan (see Huber 2007; Guillemain and Taillefer, 2013, 39–41).

<sup>21</sup> "[Inventory of Settala's Cabinet of Art and Curiosities]", 43r: "Schermo magnetico, per indovinare se le figlie vanno à monaca volentieri, et per molto altre galanterie, poiche si fà fermar la lucerta dove si vuolesse."

<sup>22</sup> "[Inventory of Settala's Cabinet of Art and Curiosities]", 46r and 50r.

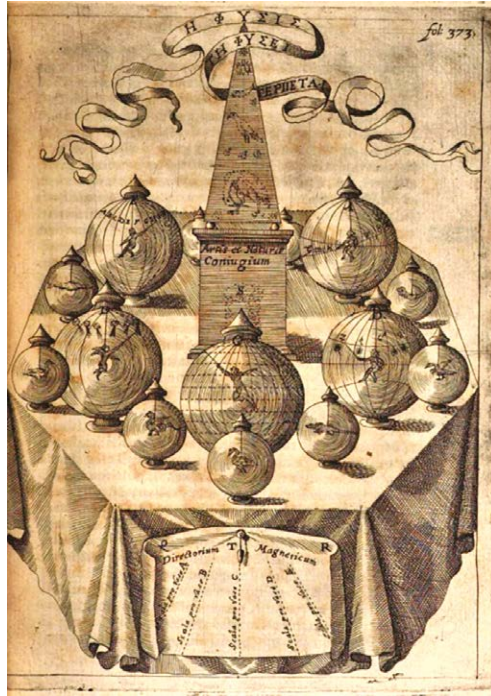


Figure 3 – Kircher, *Magne*, 1673. <[https://archive.org/details/bub\\_gb\\_nK1DAAAACAAJ/mode/2up](https://archive.org/details/bub_gb_nK1DAAAACAAJ/mode/2up)> (Public domain).



Figure 4 – ‘Scherzo magnetico’, in ‘[Inventory of Settala’s Cabinet of Art and Curiosities]’, 43r. <[https://commons.wikimedia.org/wiki/File:Scherzo\\_magnetico.png](https://commons.wikimedia.org/wiki/File:Scherzo_magnetico.png)> (Public domain).



Figure 5 – ‘Sirena che con la calamita si fa muovere’, in ‘[Inventory of Settala’s Cabinet of Art and Curiosities]’, 46r. <[https://commons.wikimedia.org/wiki/File:Sirena\\_magnetica.png](https://commons.wikimedia.org/wiki/File:Sirena_magnetica.png)> (Public domain).

Cautious since his troubles with the Inquisition (1570–1580s), Della Porta favoured the form of demystification to expose the “frauds” of false magicians (*impostores*). Just as he had denounced false divinations (VII, 29), he devotes a chapter (XX, 8) to the jugglers and charlatans who claim to be magicians:

*To discover Frauds (dolos / inganni) whereby Impostors (impostores / ingannatori) working by Natural means, pretend that they do them by conjuration (magia / essere maghi).*

Now will I open Cheats and Impostors, whereby Jugglers (*circulatores*) and Impostors, who fain themselves to be Cu[n]jurers (*Nicromanticos / Negromanti*), and thereby delude fools, knaves, and simple women (*mulierculas / donnicciule*) (Della Porta 1589, 300; 1658, 405).

Della Porta’s approach was very close to that of his contemporary, the French illusionist Prevost, who strongly condemned jugglers who used “this terrible and bad word of Magic” (Prevost 1584, 4v). Both were trying to purge illusionism and the science of wonders of their crude and popular magical component. This was also the preoccupation of Bernardino Baldi (1589), who fought for the social legitimisation of mechanics and challenged the Renaissance association between the mechanic and the charlatan—which he compared to the relationship between “*magia naturalis*” and the infamous “*magica*”—by defending the possibility of an honest and pleasant *inganno* (See Baldi 1589, 11r–12v).

Through Wecker (1580), Prevost (1584), Scot (1584) and Della Porta (1589), the 1580s saw a vast undertaking to theorise and legitimise illusionism (and natural

magic) as recreational knowledge for amateurs from good society. The demystification of tricks was often accompanied by an invitation to reproduce them. This is probably why the engraver Cornelius Nicolas Schurtz, in the frontispiece to Book XX of a late German edition of *Natural Magic* (1680), depicts a *bateleur* with his three cups and his *gibecièrè*, while divine hands shake a *gibecièrè* that pours a set of recreational instruments from the sky (Fig. 6) (see Della Porta 1680, vol. II, lib. XX, plate).

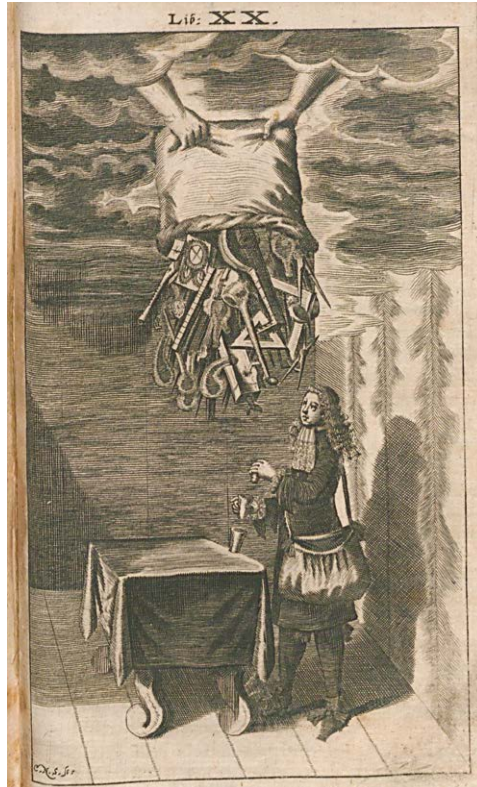


Figure 6 – Engraving of C[ornelius] N[icolas] S[churtz], in Della Porta, *Haus-Kunst-und Wunder-Buch*, vol. 2, plate ‘Lib. XX’. <<http://dx.doi.org/10.25673/opendata2-32431>> (Public domain).

Even in this critical chapter, Della Porta can't help praising these “*ludicra subtilitas*” (“entertaining subtleties”), such as “that three Schroles of Paper not touched, shall change their places.”<sup>23</sup> Once again, Della Porta reports that this little trick was used for divinatory purposes. If no other source attests to this,

<sup>23</sup> Della Porta 1589, 300; 1658, 406. This already appears in “*De Mechanicis quibusdam experimentis*” (II, 4) of the first edition (but without the reference to pseudo-Aristotle), see Della Porta 1558, 70 (II, 14).

the same cannot be said of the following experiment, which consists of making a piece of paper or a coin move or rise thanks to an ear of oats (see Della Porta 1658, 406), a classic trick already described as divinatory in the *Secretum philosophorum* (see Goulding 2006a, 150).

Following in the footsteps of medieval naturalist critics of magic (William of Auvergne, Roger Bacon, Nicole Oresme) (see Rioult 2021), and the polemical mobilisation of illusionism as a weapon of scholarly anti-magical discourse, particularly reformed (Calvin, Lavater, Wier, etc.) (see Rioult 2018), Della Porta rallies to the critique of the efficacy of the power of “characters” (Della Porta 1658, 407–8) and magic signs. In particular, Della Porta exposes the illusionary trick of piercing a chicken’s head without killing it (XX, 8) (see Della Porta 1589, 301), probably taken from Cardano or Wier.<sup>24</sup> This *topos* of anti-magical demonological literature clearly marks Della Porta’s place in the movement of “demagification of the world” (*Entzauberung der Welt*) that took place in the sixteenth century, against a backdrop of religious polemic (see Rioult 2018). Natural magic and illusionism were asserted against the inanity of ceremonial magic, by denouncing the illusions of jugglers and charlatans.

Indeed, Della Porta also associates this “arte prestigiatoria che illude e prestringe gli occhi, e fan vedere una cosa per l’altra” with charlatans, as evidenced in his play *L’Astrologo* (II, 3).<sup>25</sup> Even more interestingly, the scholar associates this art with the influence of the moon, thus reviving the symbolic block of the children of the moon, of which the *bateleur*—depicted as a cups and balls player—was one of the archetypal figures at the end of the fifteenth century (see Rioult 2018, 171–77). However, while he scoffed at the “prestigious art” of charlatans, Della Porta was nonetheless fascinated by the production of illusory images.

## 6. Della Porta, Phantasmagoria Showman: Fantastic Illusions Between Optics and Prestigious *Experimenta*

Mirrors, because they manifest the versatility and artificiality of images, play an important role in Mannerist thought, exemplified by Parmigianino’s self-portrait with a convex mirror.<sup>26</sup> Freed from the natural referential, artists gave free rein to their *ingegno*, which crystallised in *congetti*, images as fantastical as they were artificial, intended to amaze and entertain (notably grotesques, emblems and *imprese*, etc.).<sup>27</sup> This is precisely what Della Porta claims in his introduction to the section devoted to wonderful optics (lib. XVII):

<sup>24</sup> See Cardano 1557, 622 (XVI, 91); Wier, 1563, 361. This trick is older, see Pacioli 1496, 247rv.

<sup>25</sup> On *L’Astrologo*, see Verardi 2018a, 15–30; Leta 2021.

<sup>26</sup> See Parmigianino, *Self-portrait in a Convex Mirror*, c.1524, oil on convex panel, 24.4 cm diameter (Vienna, Kunsthistorisches Museum).

<sup>27</sup> See Morel 2001, 45. Proof of this proximity is Della Porta’s treatment of *imprese* in the autograph manuscript ms. IX (Naples, archives of the Accademia dei Lincei), see Della Porta 2013, XII; Clubb 1965, 184.

For these shine amongst Geometrical instruments, for Ingenuity, Wonder, and Profit: For what could be invented more ingeniously (*ingeniosius*), then that certain experiments (*experimenta*) should follow the imaginary conceits of the mind (*animi conceptionibus*) [...] what could seem more wonderful, then that by reciprocal strokes of reflexion, Images should appear outwardly, hanging in the Air, and yet neither the visible Object nor the Glass seen? that they may seem not to be the repercussion of the Glasses, but Spirits of vain Phantasms (*spectra & praestigia*)? (Della Porta 1589, 259; 1658, 355).

Once again, the emphasis is on the possibility of “magicising” phenomena, masking their actual causes. Della Porta is fully committed to the creation of illusions (XVII, 2). A game (*ludos*) enables him to show his guests “how a thing may appear multiplied. [...] that they cannot discern the truth”<sup>28</sup> (XVII, 10), but also “how we may see in a Chamber things that are not” (Della Porta 1589, 270; 1611, 649–50; 1658, 370) (XVII, 12). Pure phenomena, presences without substance, images are part of an illusionist ontology. Here again, Della Porta follows in the tradition of medieval secrecy, since a significant part of the *Secretum philosophorum* (the most complete medieval treatise incorporating illusionist tricks) presented various experiments with mirrors, partly inspired by Roger Bacon’s *Perspectiva* (see Goulding 2006a).

While the plastic arts were obsessed at the time with the animation (*moto*) of *fixed* figures, Della Porta actually created *living* images. His use of the *camera obscura* as a pre-cinematographic device is particularly striking:

*How in a Chamber you may see Hunting, Battles of Enemies, and other delusions (praestigia).* (XVII, 6)

Now for a conclusion [of the *camera obscura* chapter] I will add that, then [*sic*] which nothing can be more pleasant for great men, and Scholars, and ingenious persons to behold (*visu iucundius*); That in a dark Chamber by white sheets objected, one may see as clearly and perspicuously, as if they were before his eyes, Huntings, Banquets, Armies of Enemies, Plays, and all things else that one desireth. Let there be over against that Chamber, where you desire to represent these things, some spacious Plain, where the Sun can freely shine: Upon that you shall set Trees in Order, also Woods, Mountains, Rivers, and Animals, that are really so, or made by Art, of Wood, or some other matter. You must frame little children in them, as we use to bring them in when Comedies are Acted [...] Let there be Horns, Cornets, Trumpets sounded: [...] that they cannot tell whether they be true or delusions (*nesciant an vera, an praestigia sint*): Swords drawn will glister in at the hole, that they will make people almost afraid. I have often shewed this kind of Spectacle to my friends, who much admired it, and took pleasure to see such a deceit (*illusione gaudentibus*); and I could hardly by natural reasons, and reasons from the Opticks remove them from their opinion, when I had discovered the secret (*artificio aperto*) (Della Porta 1589, 266; 1658, 364).

<sup>28</sup> Della Porta 1589, 270; 1658, 369. Already mentioned in Della Porta 1558, 145 (IV, 4).

The themes Della Porta staged were not chosen at random. The illusions he described follow in the tradition of medieval “prestigious”<sup>29</sup> *experimenta*, consisting of illusory apparitions of castles, banquets, celestial armies, etc. (see Loomis 1958; Kieckhefer 1998). These prestiges became *topoi* in sixteenth-century demonological literature and fed the imagination of scholars. However, unlike prestigious lamps (based on occult properties or “characters”) (see Grévin and Véronèse 2004), the actual causes of the imagery had to be concealed. As a good illusionist, Della Porta applies the advice of the *Mēkhaniká problēmata* of pseudo-Aristotle. In Della Porta, we see how magic, theatre, optics and illusionism come together to create a powerful experience that survives even disclosure.

Fear is never far from wonder. In a similar vein,

in a tempestuous night the Image of any thing (*imago cuiusuis simulachri*) may be represented hanging in the middle of the Chamber, that will terrify the beholders [...] especially if the Artificer be ingenious (Della Porta, *Natural Magick*, 365) (XVII, 7).

These illusions are linked to the tradition of magic lamps and prestigious *experimenta* (See Goulding, 2006b; 2019). Frequent in the literature of secrets, they feature prominently in the first edition of *Magiae naturalis* (II, 17 and 18, eleven entries), but are reduced in the second edition (XX, 9, two entries). Already denounced by Prevost (1584, 50r), Della Porta, in turn, noted the ineffectiveness of most of them. In the *Taumatologia*, he proposes to recreate a lamp that shows snakes running on walls “but not in the way written by Albertus and other liars” (Della Porta 2013, 5). Illusions using the *camera obscura* are an effective substitute for these medieval techniques of magical image production. Breaking with the rules of strict Renaissance perspective dedicated to the faithful reproduction of reality, Della Porta puts technique at the service of the production of fantastic (in Comanini’s sense) and marvellous images that question the viewer and open up a Mannerist playground.

## 7. Conclusion

Analysing Della Porta through the prism of illusionism effectively highlights the tensions intrinsic to his singular approach to natural magic and secrets. Oriented towards the fabrication of wonders, natural magic enlists the services of illusionism, in the form of *mēkhanē* (cunning, trickery). From an epistemological point of view, the integration of artificial secrecy into the Plotinian magical tradition helps to forge the modern conception of natural magic. This discreet but effective presence transforms experiments into shows and games for friends. Viewed through the prism of illusionism and Mannerism, Della Porta’s natural

<sup>29</sup> I prefer “prestigious” to “illusionist” (as used by Kieckhefer) in order to make a clear distinction between a fantasised magical textual tradition and an actual technique for producing illusions.

magic cannot be thought of in terms of a strictly scientific, utilitarian and objective genealogy. Playing with the literature of secrets, not only as a reservoir of recipes but also as formal inspiration (particularly in the case of the prestigious *experimenta*), Della Porta fully integrates the viewer's subjectivity into his experiments. The broader socio-aesthetic paradigm of Mannerism, as an aesthetic of wonder and technique, dissolves the opposition between science and art in the Cinquecento. Knowledge circulated between disciplines, as evidenced by Della Porta's influence on the Mannerist theorist Giovan Paolo Lomazzo (see Klein in Lomazzo 1974, 483), and vice versa (see Verardi 2022, 97).

More broadly, the history of illusionism during this period is marked by the proliferation of illusionist pamphlets of secrets, the emergence of an amateur practice, as well as that of professional courtier artists famous throughout Europe (e.g. Hieronimo Scotto and Abramo Colorni) (see Rampini 2020; Toaff 2010). The strong elective affinities between illusionism and Mannerism lead us to hypothesise the existence of a "Mannerist illusionism"<sup>30</sup> (as a specific aesthetic paradigm of illusionism, preceding that of the recreational science that took hold in the seventeenth and eighteenth centuries). The illusionist secrets exposed by Della Porta are precisely at the crossroads of the Mannerist triad: a technical and intellectual *virtuosità*, intended to *meravigliare* his friends with a *gioco*.

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<sup>30</sup> For an initial sketch, see Rioult 2023b. The present study is part of our research project "Performing Wonder: Illusionism between Art, Science and Magic in Early Modern Europe" (FNRS/ULB, 2023–2026).

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