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Subtilis, Inutilis

The Jesuit Pedagogy of Ingenuity at La Flèche in the Seventeenth Century

"la philosophie n'est qu'une poesie sophistiquée".[1]

Source. The *Ingenium* Emblem. Image and Commentary

[FIG. 1. 'Ingenium emblem', Antoine de Bourgogne, *Mundi lapis lydius, sive vanitas per veritatem falsi accusata et convicta* (Antwerp: Vve Cnobbaert, 1639), 2-5].

[1] Michel de Montaigne, 'Apologie de Raimond Sebond', (II.12) in *Les Essais,* ed. Marie de Gournay (Paris: Abel L'Angelier, 1595), 223*r*. Edition owned by the Jesuit college of La Flèche. I thank Paul J. Smith and Karl Ennenkel for their invitation to the 'Emblems and the Natural World' conference held at the University of Münster in December 2015, where I presented an early version of this chapter. The research leading to this chapter has received funding from the European Research Council under the European Union's Seventh Framework Programme (FP7/2007-2013)/ERC grant agreement no 617391. I am grateful to Tim Chesters for his careful editing of my prose.

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Vanity: Wit has a sharp edge

Truth: Because it is sharp, it is useless

COMMENTARY

Quam aptae sint humanis usibus Cameracenae, Hollandicae, ac Cortacenses telae, manifestus docet quotidiana necessitas, quam ut quempiam lateat. Eam vero, quam sibi ipsa et colus, & fusus, & lanipendia, & textrix aranea conficit, non minus aperte constat tam inutilem esse, quam subtilem; imò verò ideò maxime inutilem, quia maxime subtilem. Sic nihil verae sapientiae magis inutile, quam Sophistae subtilitas. Ideo invisam Palladi finxere veteres araneam. Ut mucronis ergo, sic ingenii acies sit, non ut fetae; subsistat, ut penetret. Quorundam acumen tenui cuspide frangitur, primoque

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molimine deficit. Validissima etiam, si ad ultimum extenuentur, infirma sunt: sic robur omne tenuitas atterit. Ingenium, ut eae quas diximus telae, si bonis artibus applicabile pretiosa supellex, & utilis; sin minus, ut araneae textum, laboriosa, & futilis,

Quis Sophistarum bella dinumeret? quis inenodabiles nodos? quis veri professionem? quis patrocinium falsi? quis ignorantem scientiam? dum hoc unum certo scire se fatentur quod nihil sciant, ac ne viam quidem scientiae adhuc invenerint? Et verissime quidem. Si enim, juxta unanimem ipsorum consensum, nihil recte scitur, quod non per causas, easque proximas, & efficientes quidem aut finales, rite demonstratur; tales vero attributorum nulli hactenus assignari potuerunt, nisi solis immutabilibus et propriis accidentibus, tamque exiguo numero, ut fere an numerus dici possit ambigam; quis non videt, eos inter ignaros potius quam sapientes esse censendos?

Eorum porro, quae scire perhibentur, nihil non rationibus inter se pugnantibus problematice varium, nihil tam solidum, ut non mox aeque stolidum esse comprobetur. Exemplis, quod loquor, evincerem, nisi propositum brevitatis studium, vel ex nunc alio me vocaret.

Quapropter, ut paucis expediam, genus hoc hominum horologiis conferes, quae dum veri regulam profitentur, ipsamet a vero deviant; & hoc uno semper conveniunt, quod inter se numquam conveniant. De hora certe nemo crebrius ambigit, aut interrogat, quam qui ejusmodi loquaces rotas circumferunt: sic nulli minus sapiunt, quam qui maxime. Et e diverso ignorans non dubitat.

Pejus est, quod subjungo. Raro magni errores, nisi ex magnis ingeniis prodiere. Nullum magnum ingenium sine mixtura dementiae: quidni & nequitiae? Da sane, inquit vulgus, ingenii maxime subtilis artificem, dabo plerumque moribus quam maxime perditis nebulonem.

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Quam perniciosus Reipublicae Catilina fuerit, saepius Cicero prodidit, quam Consularis modestia postulabat: at Crispus illum magna vi animi fuisse ait, sed ingenio malo. Tu an bono sis, nescio: quod ob sensuum fallaciam, caeco; ob rerum omnium incertudinem, erroneo; ob humanae fragilitatis conditionem, periculoso; hoc certo scio.

Habe et hoc corodinis loco. Ingenium quo velocius, eo proprius ruinae, utinam non eternae! Quam id vellent tot illustres animae, quarum nimia subtilitas, caeli claustris infracta, sibi aliisque barathrum referavit!

Daily necessity teaches clearly the usefulness of the sturdy cloth made in Holland, Cambrai and Brabant, which addresses human needs. The cloth that she weaves from her own self -- to itself its own warp, spindle, thread and puff of raw wool -- is obviously as useless as it is fine -- really, all the more useless because it fine. In a similar fashion, nothing is more useless to true wisdom than sophisticated subtlety. Hence the ancients have invented the fable according to which Athena hated the spider. Wit should be acute like the edge of a sword, not like a new mother -- it must hold its position to pierce through. The very blade of any sharp wit, overly sharpened, will chip; even the best arguments become faulty when refined to their limits -- fineness ultimately diminishes strength. Wit, like the cloths just mentioned, when applied to good arts, is a tool both precious and useful, when not, like the spider's woven stuff, it is both laborious and useless.

Who will keep count of the wars of sophists, of their knotty problems that no one can solve? Who shall reckon professions of truth? Defences of falsehood? Who, the ignorant science? So they deemed that they knew that one thing for sure: that they knew nothing; and yet from there they could not find any path to certain knowledge? This is all very true indeed. If, in accordance with the unanimous agreement of that

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same lot, nothing is rightfully known, that has not been properly demonstrated by its causes: proximate ones, and efficient ones at that, or even final ones, truly then none of these can ever be ascribed to any attributes so far, except immutable and proper accidents; and they are in such small number, that I shall even debate whether it can be called a number. Who would not see, that these should be deemed to belong with the ignorant rather than the learned?

In turn, of those things supposedly known, nothing that is not problematically variable, upheld by arguments that contradict each other, nothing so solid that is not soon proven to be stupid. I would adduce examples of what I say, were it not for the fact that my explicit attempt at brevity calls me away from here to there.

For this reason, to put it in a few words, this type of men you shall compare with clocks, which as they utter the rule of truth, they deviate from that very rule; they always keep time individually, while they are never in sync with each other. For sure, no one has more doubt or asks more questions about the hour than those who have made those babbling wheels rotate in this way; thus no one knows less, than those who know most. And the ignorant man is not thrown into doubt by the experience of opposites.

Worst still, what I am adding here. Great errors rarely happen, except when brought forth by great minds. There is no great mind without a touch of madness, why not without wickedness too? Granted for sure, say the plebs, the artifice of the subtle mind; granted even more, most often, the sorry wretch with corrupt habits.

Cicero shows more often than his consular modesty demanded how pernicious Catilina was for the Republic: yet Sallust says he had a formidable strength of soul, but a wicked wit. You, whether your wit is good, I know not: that it is blind because of the falsity of the senses, wrong because of the uncertainty of all things, threatened because of the frailty of the human condition, that for sure I know.

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> Now, here comes the final flourish: the faster the wit, the fitter to its own ruin, if only not an eternal one! How they hope as much, these many brilliant souls, whose excessive subtlety, broken by the bolted doors of heaven, had them, and others with them, sent back to the abyss!

The Ambivalences of the *Ingenium*

Subtle Wit, Useless Wit

This emblem, dedicated to *ingenium*, opens Antoine de Bourgogne's 1639 *Compass of the World*, an emblem book which features in the library of La Flèche, where René Descartes was schooled.[2] In the foreground of an elegant urban prospect, a spider has spun a fine web within the alcove of a classical building, which stands out on the backdrop of the domes and spires of the city churches behind it. The spider's craft exemplifies the ingenious products of one's wit. The first meaning of the term *ingenium* in early modern Latin and polyglot dictionaries is one's inborn nature and temperament; its second meaning, the one explicitly targeted here, identifies the *ingenium* with the cognitive expressions of one such inborn nature, namely, one's wit.[3] The motto of this emblem warns the reader that a subtle wit is a useless one,,even as the motto mounts a rhetorical display of the very thing it denounces: the paronomastic pairs *vanitas* and

[2] Little is known about Antoine de Bourgogne (1593/4-1657); he was canon and archdeacon of the cathedral of Bruges. His *Compass of the World, or Vanity Accused of Falsehood and Condemned by Truth* (*Mundi lapis lydius, sive vanitas per veritatem falsi accusata et convicta*) was first published in Latin in 1639, translated into Dutch as *Des wereldts proef-steen of te de ydelheydt door de waerhyed beschuldight ende overluyght van valscheydt*, ed. and trans. P. Geschier (Antwerp: Cnobbaert, 1643), and re-edited in 1654.

[3] See the entry *ingenium* under *gigno* in Robert Estienne, *Thesaurus linguae latinae* (Paris: Robert Estienne, 1531). On the lexicography of ingenuity, see R. Garrod, A. Marr, J. R. Marcaída and R. Oosterhoff, *Logodaedalus: Word Histories of Ingenuity in Early Modern Europe* (Pittsburg: Pittsburg University Press, forthcoming).

veritas, the rich rhyme between *subtilis* and *inutilis*, and finally the verbal ellipsis that Latin allows, all contribute to the lapidary wit of this epigrammatic maxim. The commentary also demonstrates a playful awareness of the twin dimensions of subtlety as it is initially defined in Giarolamo Cardano's *De subtilitate*: not merely cognitive complexity but also the natural philosophical sense of a tenuousness hardly perceptible by the senses..[4] The emblem defines subtlety as an extreme performance of ingenuity which ultimately renders it inane. Yet as this chapter will show, it also dramatizes the tension between the condemnation of such wit in rhetorical invention, epistemology and the mechanical arts, and its stylistic display; this tension is central to Jesuit pedagogy. This emblem is indeed an ironic, virtuosic firework of satirical wit, which denounces the very means it employs to catch the attention of its readers. In so doing it promotes a pedagogical definition of the *ingenium* as one's malleable nature, that is, as a site of pedagogical, social and theological *docilitas*

Thinking with Images, Reforming One's Nature: The Ingenium in Jesuit Pedagogy

That De Bourgogne's witty emblem should find favour among the Jesuits of La Flèche should come as no surprise: ingenuity was central to Jesuit schooling. As one's inborn nature and temperament, the *ingenium* was the very site of pedagogical exercise and reform for the Jesuits.

Following a long scholastic tradition arching back to Hugh of Saint Victor's *Didadascalion*, the Jesuits assumed a pedagogical understanding of the *ingenium* as

[4] Gerolamo Cardano, *Les Livres de Hierome Cardanus médecin milannois intitulez. De la Subtilité, et subtiles inventions*, trans. Richard Le Blanc (Rouen: Vve du Bosc, 1642), 1. The first edition of the *De subtilitate* dates back to 1550. It was followed by two subsequent editions incorporating amendments by Cardano himself in 1554 and 1560. I am using the French translation listed in the *fonds historique* of the La Flèche library.

one's embodied cognitive abilities, that is, one's mental power to discover and combine data stored in the memory.[5] In his European best-seller, the *Examen de los ingenios para las ciencias* (first edition in 1575, second expurgated and posthumous edition in 1594) the Spanish physician Juan Huarte de San Juan thus describes the *ingenium* as the mental power to manipulate cerebral images stored in the memory -- these images were the archetypes of specific arts and disciplines. The peculiarities of one's own temperament and the nature of one's brain determine one's aptitude for learning and excelling in specific arts and disciplines: thus Hippocrates and Galen were good physicians because they had neatly imprinted in their memory a model of the human body and its workings.[6] Half political treatise on good governance, half medical pamphlet on eugenics, the *Examen* provides a curious medical typology of *ingenia* intended to help parents beget the 'right' children for a harmonious civil society, and to advise the Prince on how to engineer such a society. Its pedagogical potential struck the Jesuits at once; Antonio Possevino provided the first Latin translation of the *Examen* geared toward pedagogy under the title *Cultura ingeniorum* (1603). Three copies of the text -- a 1652 Spanish edition, a 1663 Latin translation and a 1675 French one -- feature

[5] Hugh of Saint Victor, 'Concerning aptitude as related to natural endowment' (Hoc ad naturam ingenio), book 3, ch.7 in *The Didascalicon of Hugh of Saint Victor: A Medieval Guide to the Arts*, trans. J. Taylor (New York: Columbia University Press, 1961), 91.

[6] Huarte de San Juan, *L'Examen des esprits pour les sciences, ou se montrent les differences d'esprit qui se trouvent parmi les hommes...augmenté suivant la dernière impression d'Espagne*, trans. C. Vion D'Alibray, first edn 1650 (Paris: Guignard et fils, 1655), 7-8. The fonds historique of the La Flèche library owns the 1675 edition. For a detailed account of the scholastic sources of the notion of pedagogical *ingenium* and its importance in Descartes' early *Regulae*, see Richard Serjeantson and Raphaële Garrod, 'Introduction' in *Descartes and the Ingenium: Embodied Cognition in Cartesianism* forthcoming.

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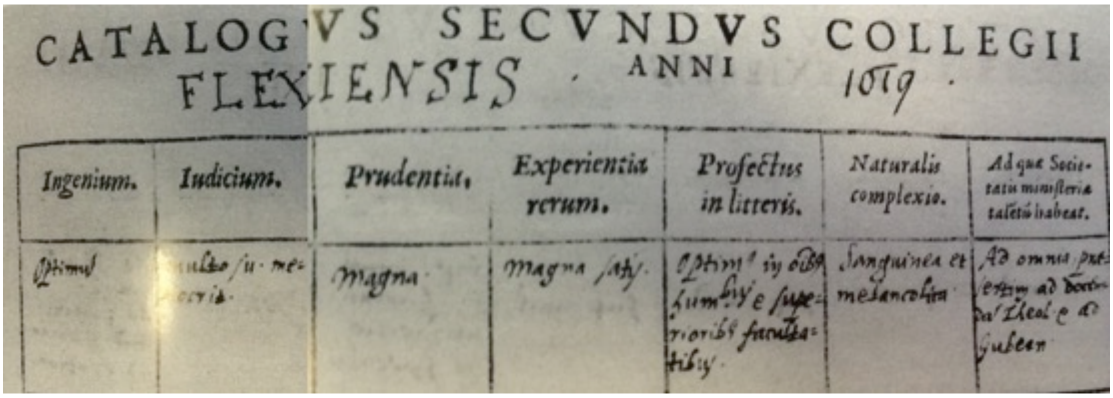
in the library at La Flèche.[7] At the heart of Jesuit pedagogy, one therefore finds the *ingenium* as the ability to generate knowledge out of the manipulation of cerebral representations -- an ability deriving from one's inborn, embodied nature.

Indeed for the Jesuits, one's wit had to be disciplined through teaching, and the very site of that pedagogical disciplining (*docilitas*) was the *ingenium* as one's inborn nature and temperament. Such *ingenium* was not only the site of teachability or 'docility' that the Jesuit targeted in their students, but also that which defined the pedagogical expertise of their teachers. Thus the Jesuits attributed the posts in their colleges on the basis of a fine-grained cognitive and temperamental profiling of their teachers, whose *ingenia* were assessed alongside their judgement, erudition, prudence, experience and complexion, in order to determine the discipline for which they were likely to be best suited [FIG.2]:


CATALOGVS SECVNDVS COLLEGII FLEXIENSIS . ANNI 1619 .

Ingenium.	Iudicium.	Prudentia.	Experientia rerum.	Profectus in litteris.	Naturalis complexio.	Ad quae Societatis ministeria talentum habeat.
Optimum	[illegible]	Magna	Magna satis	Optim[illegible] in [illegible] humanis et superioribus facultatibus	Sanguinea et melancolica	Ad omnia praesertim ad [illegible] Theol. et ad gubern[illegible]

[FIG.2. Pedagogical profiling of the teacher Natalis Deniau at La Flèche in 1619: 'Catalogus secundus of the Collège de La Flèche (1619), ARSI, FRANC. 11, fol.70r',

[7] Antonio Possevino, *Cultura ingeniorum* in *Bibliotheca selecta rationis studiorum,* 2 vols (Venice: Altobellum Salicatium, 1603), I: 1-49. The second Latin translation was the work of the German humanist Joachim Caesar: Huarte de San Juan, *Scrutinium ingeniorum, pro iis qui excellere cupiunt* (Leipzig: Kote, 1622). A revised *Scrutinium* was printed in 1637, which took into account the expurgated Spanish edition of the *Examen* in 1594. The La Flèche library owns a 1663 edition of that revised version (Lena: L. Levenhaus, impr. Samuel Krebs, 1663).

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in Antonella Romano, *La Contre-Réforme Mathématique: Constitution et diffusion d'une culture Jésuite à la Renaissance* (Roma: École française de Rome, 1999)]

Similarly, De Bourgogne's emblem condemns exceptional or paradoxical expressions of subtle wit, and thus promotes the same view of the *ingenium* as one's 'teachable', docile, and commonsensical nature: the emblem is therefore a performance of what a good pedagogy of the *ingenium* should be. In this respect, the *ingenium* emblem and the book from which it is excerpted are paradigmatic of the Jesuit pedagogy of ingenuity, which intended to sharpen one's wit in order to educate one's nature. The *Compass* exercised the former in order to reform the latter.

The whole book emblematizes a much older Petrarchan allegorical dialogue in two parts, the *De remediis utriusque fortunae*, in its choice of a double-motto structure (*Vanitas*/*Veritas*) for all of its emblems.[8] The *De remediis* pits frivolous Joy (*Gaudium*) against vitriolic Wisdom (*Sapientia*). Petrarch's *Gaudium* is translated into De Bourgogne's *vanitas* mottos and its worldly values, and *Sapientia* into the *veritas* mottos. In the first part of the dialogue, *Sapientia* mercilessly undermines *Gaudium's* positive assessment of what constitute a good fortune: ingenuity, glory, wealth, a noble birth etc. Not only does de Bourgogne systematize the dialogic form of the *De remediis* into the striking double-motto structure of the *Compass*, his commentaries for each emblem are creative paraphrases of Petrarchan highlights carefully excerpted from the *De remediis.* Thus, most conceits and epigrams in the text of our emblem are lifted

[8] The La Flèche library owns the 1581 Basel edition of Petrarch's complete works, in which this dialogue features: Francisco Petrarcha, *De remediis utriusque fortunae* in *Operae quae extant omnia*, 4 vols (Basel: Heinrich Peter, 1581), vol 1. This extensive Petrarchan borrowing remains a silent one: Petrarch's name is not mentioned once in the preface.

verbatim from Petrarch's dialogue on the same topic in the *De remediis*, entitled "De ingenio".[9] De Bourgogne retains from his source the punch of epigrammatic wit put to ethical use, and direct the blows towards disciplining the 'inborn nature' of his reader. Readers were required to make sense of the image and its commentary, to unravel its web of ironic analogies and erudite allusions in order to reassess the true value of those criteria which socially define a good nature: the constitutive parts of eloquence (wit, memory and verbal invention) but also physical strength and beauty, or social status and its signs (a good name, noble blood, free birth) all demand such scathing reassessment.[10] Indeed the *Compass* repeatedly points to another scale of 'true' goods ordered according to Christian ends, and in doing so, redefined the norms of 'a good nature'.

This chapter maps the redefinition of ingenuity in De Bourgogne's spider emblem in poetics and rhetoric first, then in logic, epistemology, and mixed mathematics, on the basis of the sources available at La Flèche in the seventeenth century. In doing so, it exposes both a paradoxically ingenious condemnation of subversive wit and, more broadly, the foundation of the Jesuit pedagogy of ingenuity in docility and common sense..

Rhetorical Ingenuity: Invention--Judgement

The first target of De Bourgogne's emblem is rhetorical and poetic ingenuity. As we will see, sharpening one's wit in order to reform one's nature first amounts to an exercise in textual and visual interpretation intended to foster sound judgement rather than subtle

[9] F. Petrarch, "De ingenio", book I, ch.7 in *De remediis utriusque fortunae,* in *Opera quae extant omnia*, 4 vols (Basel: S. Heinrich Peter, 1581), I: 5.

[10] *Ingenium*, *memoria* and *copia*; *robur* and *forma*; *ingenita libertas*, *clarus sanguis*, *bonum nomen*, in Antoine de Bourgogne, *Mundi lapis lydium*, 2-5, 6-9, 10-13, 17-19, 20-22, 26-28, 30-33, 34-36.

invention. The first structural contradiction of this emblem, however, is to encapsulate the condemnation of ingenuity as subtle invention in emblematic form -- the emblem as a genre epitomizes rhetorical and poetic ingenuity in the Jesuit curriculum.

Jesuit Ingenuity and Emblematics

From its inception in the sixteenth century, the genre of the emblem has been defined as witty 'thinking with images'. The twelve emblem books recorded in the La Flèche's *fonds historique* bear testament to the pedagogical vogue the genre enjoyed within the order. Its classics are represented, such as a sixteenth-century edition of Joachim Camerarius's *Centuria* and a heavily annotated seventeenth-century edition of Andrea Alciato's *Emblemata*.[11] Some Jesuit texts are also present, such as René Rapin's 1660 *Pax Themidis cum Musis* and an instance of the neighbouring genre of device collections, Pierre Le Moyne's 1666 *Art des devises*.[12]

As early as Guillaume de la Perrière's 1539 *Théâtre des bons engins*, one of the most influential emblem books of Renaissance France, emblematics have been associated with both the display and exercise of one's *ingenium* as natural wit. La Perrière's title means just that: the spectacle -- *théâtre* -- of the products of his wits -- *engins*.[13] As a rhetorical and poetic exercise, the emblem discloses its maker's ability to weave together pithy conceits in both visual and verbal forms; yet is also demands

[11] Joachim Camerarius, *Symbolorum et emblematum ex re herbaria desumptorum centuria una collecta* ([Leipzig: Philipp Vögelin], 1590); Andrea Alciato, *Emblemata cum commentariis*, ed. Claude Mignault (Paris: Jean Richet, 1602).

[12] René Rapin, *Pax Themidis cum musis* (Paris: Sebastien Cramoisy, 1660); Pierre Le Moyne, *Les Poésies du P. Pierre Le Moyne de la Compagnie de Jesus: suivi de Devises héroïques et morales* (Paris: Augustin Courbé, 1649-1650), and *De l'art des devises, avec diverses recueils de devises du mesme autheur* (Paris: Sebastien Cramoisy, 1666).

[13] Guillaume de La Perrière, *Théâtre des bons engins* (Paris: Denis Janot, n.d (1544). Available at http://www.emblems.arts.gla.ac.uk/french/books.php?id=FLPa.

that its audience exercise their own wit by summoning at once their attention and erudition, in order to make sense of the moral lesson such conceits disclose. The definition of the emblem provided by Nicolas Caussin (1583-1651), a professor of rhetoric at La Flèche and a well-regarded preacher in Paris in the 1630s, bears testament to this relationship between witty rhetorical invention and interpretation by locating the emblem alongside the symbol and the apologue within an ancient tradition of witty wordplay, such as the pun and the enigma: "the witty invention of enigmas, and the subtle games of puns were held in great repute in ancient times".[14] Caussin defines the emblem as "some ingenious symbol, both sweet and suited to a moral topic, consisting of a picture and epigram, usually pointing towards some more eminent doctrine".[15] For Caussin an emblem was a pleasing wit-sharpener which led the students from the learned elucidation of conceits to moral reflection. Making and solving puns, enigmas and emblems therefore featured in Jesuit programmes of studies--it is within this context that we can make sense of Descartes's reference to "childlike" anagrammatic games in the *Regulae ad directionem ingenii*.[16] Seventy years after Caussin, Joseph de Jouvancy, the author of a detailed programme of studies for the classes in grammar, humanities, and rhetoric, the *Ratio discendi and docendi* (1690), locates wordplay in general and emblematics in particular within "polymathy" (*polymathia*), which includes

[14] "Aenigmatum vero solers inventio, griphorumque lusus aculeati, magnam habent antiquitatem commendationem", Nicolas Caussin, *De Symbolica aegyptorum sapientia*, first edn 1618 Paris (Cologne: Johann Kinck, 1623), 2. The *De symbolica aegyptorum sapientia* was Caussin's own textbook on enigmas and emblems; it consists of an eclectic compilation drawing from the hermetic *Hieroglyphica* of Horapollo, the patristic *Stromata* of Clement of Alexandria, and Epiphanus' *Physiologus*, one of the most common bestiaries in the Middle Ages.

[15] "Emblema [...] est enim proprie symbolum aliquod ingeniosum, suave, & moratum, ex pictura et lemmate constans, quo aliqua gravior sententia indicari solet". Caussin, *De symbolica sapientia*, 4.

[16] René Descartes, 'Regula 7' in *Regulae ad directionem ingenii* in *Oeuvres complètes*, ed. C. Adam and P. Tannery, 12 vols (Paris: Léopold Cerf, 1897-1913), X (1908): 391.

diplomacy, numismatics, and the art of making and decyphering puns, enigmas, and emblems.[17] Unlike Caussin, he warns against indulging in polymathy as a potentially sinful expression of curiosity. One could take ingenuity too far; the erudite wit of emblematics needed to be contained within the bounds of counsel and *doxa*.[18] Despite this warning, Jouvancy proceeds with a detailed typology of witty games, and gives precise rhetorical prescriptions for their performance: the student should use an entertaining variety of style, pepper his presentation with a solid dose of erudition, and, if possible, structure it in a way that would allow the quick wits in his audience to guess the answer to his enigma or the meaning of his emblem before he actually reveals it. Jouvancy thus registers both a growing awareness of the potential dangers of witty excesses in the pedagogy of emblematics, and the solid grip the genre holds in the Jesuit classroom as a wit-sharpener. De Bourgogne's spider emblem is characteristic of this ambivalence towards rhetorical and poetic ingenuity.

Redefining Rhetorical Wit

The commentary on the image and its motto makes it clear that the fable underpinning De Bourgogne's emblem is that of Arachne in Ovid's *Metamorphoses*. The commentary first summons a whole set of classical commonplaces on rhetorical ingenuity which all featured in the humanist editions and commentaries of the La Flèche library: Denis Lambin's 1566 edition of Cicero's complete works, the 1582-3 Aldine edition and commentary on Cicero--including the volume of rhetorical treatises, namely the *Brutus (De oratore*), the *Orator*, the *Topica*, and the *Partitiones oratoriae*--, Sebastian

[17] Joseph de Jouvancy, "De polymathia, seu philologia" art.IV in *Ratio discendi et docendi* (Paris: Barbou frères , 1690), 94-100.

[18] Jouvancy, *Ratio*, 94-5.

Gryphius's 1540 edition of Quintilian's *Institutiones oratoriae*, as well as Josse's Bade 1528 commented edition of Quintilian.[19] The same commonplaces also feature widely in the texbooks of the Jesuit order itself, such as Nicolas Caussin's 1619 *Eloquentiae sacrae et humanae parallela.*

In Ovid's fable, Arachne typifies the bad *ingenium*, that is, a boastful, indocile inborn talent. The Lydian maid, an outstanding weaver, refuses to acknowledge that Athena taught her her craft. The outraged goddess summons her to a weaving contest; Arachne's tapestry, which depicts all sorts of Olympian deceits, was a mimetic masterpiece of energetic variety and colour which infuriated Athena so much that she tore it to pieces.[20] Arachne killed herself out of despair, but a repentant Athena turned her into a spider, suspended by a thread and bound to weave out of her own body. Arachne's tale was ideally fitted to discussing the role of one's own nature and wit in poetics–understood both in its etymological sense of the art of making first, and then in the narrower, rhetorical sense of 'writing a good speech, creating a good text': this was a tale about the ability to weave -- *textus* -- and to represent.[21] De Bourgogne's commentary does just that, and makes its spider emblem a symbol of ongoing debates about the nature of rhetorical invention. The masterful exploitation of the etymology of *subtilis* (*sub-tela*, the warp) sustains throughout the simile between weaving and

[19] M. T. Cicero, *In M. Tulii Ciceronis De Rhetorica volumen primum Aldii Mannucii commentarius*, ed. A. Manutius (Venice: A. Manutius, 1583); M. T. Cicero, *M. Tulli Ciceronis Opera omnia*, ed. D. Lambin (Paris: J. DuPuys, 1566); M. F. Quintilian, *Institutiones oratoriae*, ed. S. Gryphius (Lyon: S. Gryphius, 1540); Josse Bade, *Commentarii Io. Badii Ascensii in M. Fabii Quintiliani institutiones oratorias* (Lyon: Josse Bade, 1528), first edn 1516.

[20] P. O. Naso, *Metamorphoses*, trans F. J. Miller, third edn, 6 vols (London: Heinemann, 1977), III: 6: 1-145.

[21] Sylvie Ballestra Puech, *Métamorphoses d'Arachné: l'artiste en araignée dans la littérature occidentale* (Geneva: Droz, 2006); Jean-Alexandre Perras, 'L'Abeille et l'araignée' in *L'Exception exemplaire: inventions et usages du génie (XVIe - XVIIIe siècles)* (Paris: Garnier, 2016), 231-46.

rhetorical invention. De Bourgogne's commentary first contrasts the useful, sturdy cloth of Brabant and Cambrai answering a human need with the useless, subtle lace that the spider, the autarkic spinner and weaver, produces. A lapidary allusion to Arachne ("Athena hated the spider") allows De Bourgogne to shift the focus allegorically from weaving threads to inventing text and, in particular, arguments: the spider web becomes, in a few sentences, the emblem of poor argumentative invention, or sophistry. Another classical commonplace underpins this shift, namely the epigrammatic swipe at the sophist's insubstantial arguments in Diogenes Laertius' life of Ariston of Chios: "Dialectical reasonings, he said, are like spiders' webs, which, though they seem to display some artistic workmanship, are yet of no use".[22] The underlying warp (*subtela*) of the good cloth of Cambrai, the product of industry, is sturdy, whereas the spider lace, the useless product of ingenuity, is fine thread on which nothing else can be woven (*subtilis*). In the seventeenth century, the commentary tradition turned Laertius's view on spider webs into a gloss of Ovid's fable; thus one reads in one La Flèche textbook: "Antoninus Pius used to say that the subtleties of sophists were similar to the spider webs, in which we see much artifice, but from which we derive nothing useful; and that the sophists, that is, those philosophers whose science consists of vain subtleties, were to the wise men what Arachne was to Pallas". [23]

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[22] "Similes autem esse orationes dialecticas dicebat aranearum telis, quae etsi quid artificiosum indicare videantur, inutiles sunt Laertius" Diogenes Laertius, 'Ariston of Chios' in 'Life of Zeno', book 7, in *De Vitis, dogmatibus et apophthegmatibus clarorum philosophorum libri X*, trans. Thomas Albrandino, comm. Isaac Casaubon (Paris: Henri Estienne, 1594), 537, in the La Flèche library. English translation from Diogenes Laertius, *Lives of Eminent Philosophers*, trans. R.D. Hicks, 2 vols, first revised edn 1931 (Cambridge M.A.: Harvard University Press, 2005), II: book VII, ch.2, 161.

[23] "Antonius Pius avoit accoustumé de dire que les finesses des Sophistes estoient semblables aux toiles des Araignées où l'on void beaucoup d'artifice, & d'où l'on tire peu d'utilité; & que les Sophistes, c'est à dire ces Philosophes dont la science consiste en de vaines subtilitez, estoient au regard des sages ce

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In the emblem, the simile of subtle weaving expresses a conceptual foundation of rhetorical accounts of invention, namely the pair *ingenium* (inborn talent)/ *industria* or *excertitatio* (repeated work and practice). Invention as the ability to find both the right subject-matter (*res*) and its right expression (*verba*) was the prerogative of the good *ingenium*. As far as the invention of the *res* of text was concerned, according to Bade (glossing Quintilian), the *ingenium*, fuelled by a good memory, involved the ability to perceive similarities easily.[24] Caussin for his part further defines quick-wittedness (*sollertia*, a quality of the *ingenium*) as innate topical mastery, that is, the ability to draw good arguments from the *loci*: "The tenth source of invention: reason, and quick-wittedness in handling the places of arguments".[25] The simile of subtlety in De Bourgogne's commentary fits both Bade and Caussin's account of ingenious topical invention. When it comes to inventing the right expression (*verba*), the *ingenium* as ability to perceive similarities fuels the making of metaphors. In the La Flèche textbooks, Aristotle discusses metaphor as an instance of diction in the *Poetics* and notes that the ability to coin metaphors is the prerogative of particularly supple *ingenia*, as it cannot be taught.[26] This view fostered pedagogical resistance: thus Beni sends his reader back to Aristotle's *Rhetoric*--where making metaphors is discussed within the context of urbane, witty uses of language alongside neologisms and jokes--and notes

qu'estoit Arachné au regard de Pallas." O. P. Naso, *Les Métamorphoses d'Ovide, traduites en françois par P. Du Ryer avec des explications historiques, morales et politiques sur toutes les fables*, 2nd edn (Paris: De Sommaville, 1665), 133. The 1655 print of this text is at La Flèche.

[24] Bade, *Commentarii*, fol.VIII*v*.

[25] "Decimus fons inventionis: ratio, et solertia in locis", in Nicolas Caussin, *Sacrae et humanae eloquentiae parallela*, 2nd edn (Paris: S. Chappelet, 1619), 137, at La Flèche.

[26] "id quod unum non aliunde quaesitum sit opportet, versatilisque ingenii indolem prae se ferat", Aristotle, *In Aristotelis poeticam commentariis*, double trans. A. de Pazzi and A Riccoboni, comm. Paul Beni (1613), 465 (CXXII).

that the *novator* Francesco Patrizi criticized Aristotle for denying that industry (*industria*, *diligentia*) could allow one to learn how to coin metaphors.[27]

In de Bourgogne's text, subtle rhetorical invention first amounts to argumentative flimsiness and overall weakness of composition (*sub-tela* also means "design"): sophisms are not rhetorically or logically sturdy enough to underpin a truly persuasive speech. In this way De Bourgogne consciously steers away from a standard interpretation of the rhetorical *ingenium* as ability to generate *copia*: he explicitly disregards the generative etymological root of *ingenium* (from *genere*) in demanding not a "pregnant" wit (that of mothers), but one as sharp as a blade. Rather than flaunt one's power to invent pleasing analogies, wit in rhetorical invention should demonstrate one's ability to hold steadily one's argumentative ground. In this process, the sword has replaced the spider as the *analogon* of the rhetorical *ingenium* and glosses an implicit, commonplace qualifier of one's wit as sharp (*acutus* or *acre*)--a qualifier which features, for example, in Caussin's definition of *ingenium* as the intellect, inasmuch as it is particularly sharp and fast (*acre et sollers*).[28] Subtlety results in overly sharpening and therefore chipping the blade of one's argument, similes or metaphors, which end up lacking substance. De Bourgogne's attack on subtle wit in rhetorical invention therefore condemns *la pointe*, the over-refined, obscure and ultimately inane conceit--a condemnation which belongs in a longstanding rhetorical and poetic reflection on the

[27] Beni, *In poeticam commentariis*, 466. The *novator* and critic of Aristotelianism Francesco Patrizi (1529-1597) published a *Discorso della diversità de' furori poetici* (Venice: Giovan. Griffio, 1553), as well as a full treatise on poetics, the *Della poetica* (Ferrara: V. Baldini, 1586).

[28] Caussin, *Parallela*, 104.

danger of metaphorical obscurity and the need for proportion between the two elements that the metaphor collates.[29]

De Bourgogne reassesses rhetorical ingenuity in significant ways. Rather than the effortless, brilliant source of bold arguments and conceits ultimately refined into inanity, the *ingenium* should generate argumentative solidity. Yet the architectonic, variegated simile of subtlety--the spider web, the blade--*is* the argumentative warp on which this whole passage is built, and its persuasive punch owes much to the very ingenious stylistic processes that De Bourgogne condemns: if you ask for a sharp *ingenium*, expect the *pointe* of lapidary conceits. In this strongly prescriptive passage, however, the blade of wit cuts through, helping to choose the right Petrarchan commonplaces and the correct order in which to string them: rather than a performance of copious rhetorical invention, the reader witnesses a display of rhetorical judgment and disposition. Rhetorical wit thus proves a *critical* tool rather than an inventive one, and such critical *ingenium* ought to be disciplined in order to work well. De Bourgogne finally substitutes a pedagogical definition of the *ingenium* as teachable to that of the *ingenium* as outstanding, inborn nature that underpins the *vanitas* of subtle, inventive wit in rhetoric. Talent *can* be taught, nature ought to be disciplined, art is *not useless*: after all, Arachne was merely an ungrateful student, and, in a concluding statement reminiscent of Huarte, "applied to the good arts, the *ingenium* can be a useful tool".

Indeed, in one final surprising reversal in this first section, De Bourgogne opposes *industria* and *labor*: industry helps cultivate one's nature, while the vain quest for subtlety means the toil of racking one's brain to produce sterile conceits. The spider

[29] See, Beni, *Commentarii*, 457-466, and among the moderns, Gerard Vossius, "De metaphoris longe petitis", chapter 8 in Book 4, "De metaphora", in *Commentariorum rhetoricorum, sive, Oratoriarum institutionum libri sex* (Leiden: Jean Maire, 1643), 102-3, at La Flèche.

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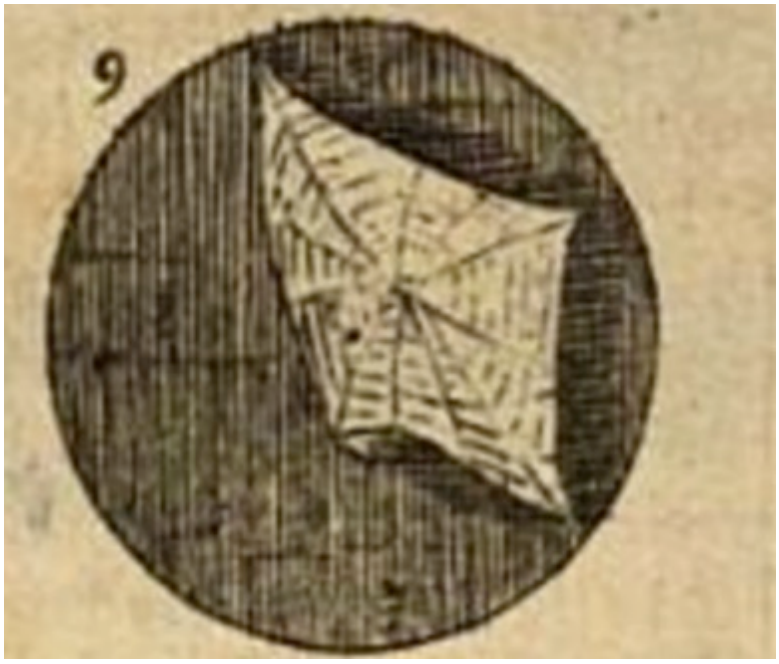
web emblematized both useless toil and conceited subtlety in the subsequent Jesuit emblematic tradition: the two devices featuring it in Claude François Menestrier's *Méthode pour apprendre l'art du blason* are characteristic in this respect. Device 9 echoes Laertius and laconically stigmatizes the excessive subtlety of scholastic dialectic by mocking the disputational method:



[FIG. 2: Device 9: "une toile d'araignée, ita & non, Ouy & non, si e no, Si y no, Ia en Neen, Yes and no, Ya und nein" in Claude François Menestrier *Méthode pour apprendre l'art du blason, ou, la science des nobles par dialogues* (Amsterdam: Daniel de la Feuille, 1695), 8]

Meanwhile device 12 features a torn spider-web that the spider is busy repairing – a perfect instance of endless, useless toil:

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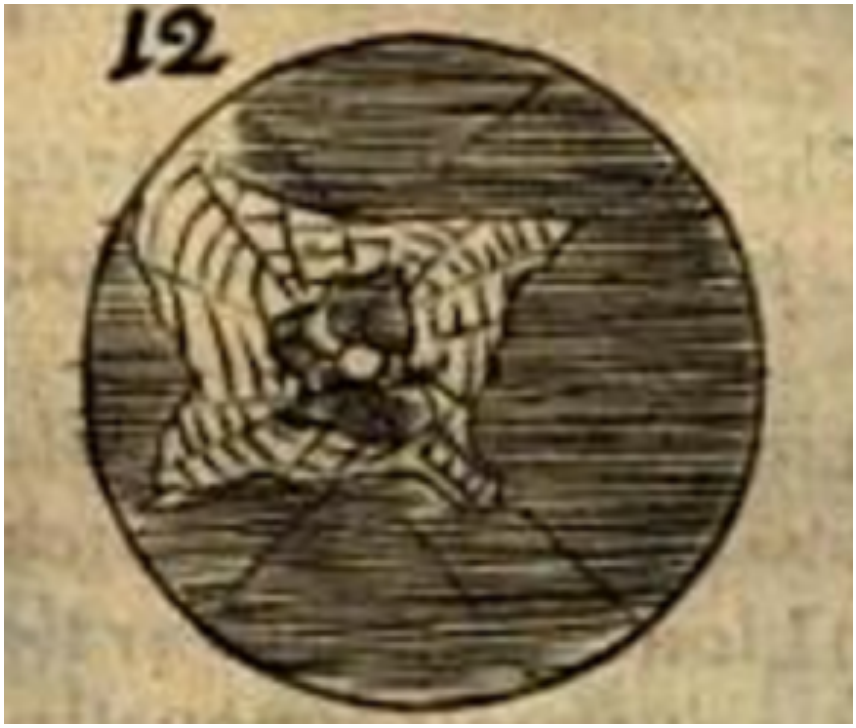

[FIG. 3: "Une Araigne qui travaille à refaire sa toile rompuë, *Interrupta retexam*, je racommode mon travail interrompu, *Raccommod le mie rotte trame,* confietto mi tela, Ick verstelle my gestaeckt werk, I repair my work that was left, Ich verbessere meine gelassene arbeit." in Claude François Menestrier *Méthode pour apprendre l'art du blason, ou, la science des nobles par dialogues* (Amsterdam: Daniel de la Feuille, 1695), 33]

Having condemned subtlety in rhetorical invention as argumentative flimsiness, logical, epistemological and mixed-mathematical ingenuity come under attack in the next section of De Bourgogne's commentary. While the former is condemned as tenuous, the latter are satirized for their pedantic complexity, the spider web becoming emblem of sterile intellectual knottiness..

Philosophical and Mixed-Mathematical Ingenuity: Paradoxes of Ignorant Science, Pedantic Precision

De Bourgogne's next target is the very possibility of devising "solid", or useful arguments in philosophy -- arguments that purport to be non-contradictory, and yield certain knowledge. De Bourgogne thus tears into logical and scientific ingenuity in this second phase of his commentary. His first attack on rhetorical ingenuity as the tenuous fabrication of similes and metaphors aptly ended in a text devoid of metaphors, the conceit of the blade having vanished into gnomic statements. By contrast, a striking image of philosophical discord concludes his vivid, epigrammatic diagnosis of logical and epistemological failure: that of the "babbling wheels" of asynchronic clocks. This classical commonplace, taken from Seneca the Younger's Menippean satire the *Apolocolyntosis* or *Gourdification of Claudius*, also featured in the preface of Petrarch's *De remediis*, alongside the oxymora of the opening set of rhetorical questions: "who will count Sophists's wars? who, the knots of their unsolvable problems?".[30] Borrowed from Petrarch –- himself borrowing from Seneca – thrusts of sharp, satirical style thus open and conclude this second attack.

Structure: Philosophical Commonplaces

In contrast with the composition of the preceding section, rhetorical invention and judgment do not involve excerpting dazzling Petrarchan conceits in order to set them carefully in analytical paraphrase; in this second stage of the commentary, Petrarchan excerpts instead frame this satirical and self-reflexive dramatization of sceptical, anti-

[30] "Horam non possum certam tibi dicere, facilius inter philosophos quam inter horologias conveniet" (What hour it was I cannot certainly tell; philosophers will agree more often than clocks), Lucius Aenneas Seneca, *Apocolocyntosis (The Gourdification of Claudius)*, ed. W. H. Rouse (London: Heinemann, 1913), 2. Lucius Aenneas Seneca, *Annaei Senecae philosophi opera quae exstant omnia a Justo Lipso emendata et Scholiis illustrata* 1st edn 1605 (Antwerp: Balthassar Moreti for Planti, 1632), 606*v*. This edition is at La Flèche. The rhetorical questions as well as the comparison between dissonant clocks and discordant philosophers can be found in Petrarcha, *De remediis*, II: 105.

philosophical commonplaces. In a long variation on the sceptical and patristic paradox of 'ignorant science', the text moves seamlessly from a condemnation of dialectical hair-splitting in disputation (logical ingenuity) to an attack on the possibility of causal, scientific demonstration in natural philosophy in particular, and the quest for apodeictic principles in general (epistemological ingenuity). *Copia*--previously denounced as a product of the verbose ingenuity of a pregnant wit in rhetoric--now takes the form of impossible accountancy: too many sophist wars, too many defences of falsehood to be counted, too few proximate causes and proper accidents to deserve a mention. This underlying mathematical theme comes to the fore in the mixed-mathematical and mechanical simile of philosophical disputes as dissenting clocks: time computation epitomized mixed-mathematical subtlety for the early moderns, whether based on celestial observations and reliant on gnomons and astrolabes or on the mechanics of pendulum clocks and geared escapement clocks. Failed logic, epistemology in need of reform, and a concluding mechanical simile of philosophical dissent connected by a running, mathematical metaphor: the condemnation of ingenuity in this second wave of De Bourgogne's critique highlights the concomitance between the emergence of the culture of ingenuity and that of the "New Science".[31]

From Scepticism to Satire: The Condemnation of Logical and Epistemological Ingenuity

[31] For significant accounts of the importance of ingenuity in the emergence of the New Science, see Ofer Gal and Raz Chen-Morris, *Baroque Science* (Chicago: The University of Chicago Press, 2013). For specific examples, e.g. Francis Bacon, see Dana Jalobeanu, *The Hunt of Pan: Francis Bacon's Art of Experimentation and the Invention of Science* (Bucharest: Zeta Books, 2014); Rhodri Lewis, "Francis Bacon and Ingenuity," *Renaissance Quarterly* 67, no.1 (Spring 2014): 113-163; on Galileo, see Eileen Reeves, *Galileo's Glassworks: The Telescope and the Mirror* (Harvard: Harvard University Press, 2008).

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Dialectic as the epitome of logical subtlety or ingenuity is De Bourgogne's first target. Dialectic assumes consent: it is meant to allow for the confrontations of endoxical views in debate--views shared by all the people, or most of them, or the wise among the people, or most of them.[32] Such sifting through of opinions imperceptibly paves the way to science in that it often leads to the discovery of apodeictic principles; dialectic was therefore commonly called "the road to science".[33] Yet in De Bourgogne's text, dialectic ends in dissent because its scholastic jargon fails to assume a shared, commonsensical use of language; nor can it be the road to truth because it is a sophistical practice whose knotty arguments often fall into absurdity. These sceptical arguments end in satire: pulverised by scepticism, the epistemological content of De Bourgogne's text--its *res*--dissolves into satirical laughter and its witty display of puns, that is, pure *verba*.

Early modern scepticism was indeed well represented in the La Flèche library where, alongside de Bourgogne's emblem book, readers could have accessed a 1557 Basel edition of Pico della Mirandola's complete works, the 1595 edition of Montaigne's *Essais*, whose "Apologie de Raymond Sebond' (II.12) popularized Pyrrhonism in the vernacular, and a 1569 and a 1621 edition of Sextus Empiricu's *Against the Mathematicians* and *Pyrrhonian Hypotyposes.*

[32] Aristotle, *Topica*, I.100b22-24.

[33] The definition of dialectic as either the road to science (through disputation) or the queen of science (because its procedures guarantee logical rigour) are scholastic commonplaces which featured in the scholastic textbooks mentioned by Descartes in his correspondence: René Descartes, *Correspondance* in AT.III (1899): 185. See for example Eustachius a Sancto Paulo, *Summa philosophica quadripartita--summa dialectica* (Paris: C. Chastellain, 1609), 18, which mentions dialectic as the queen of sciences, and among the Coimbra commentators, Pedro da Fonseca, *Institutionum dialecticarum libri octo*, 2nd edn (Cologne: Maternus Cholinus, 1578), 334-36: this chapter dedicated to the dialectical argument and the invention of its middle term points out the overlap between opinion and science, dialectical and demonstrative syllogisms; "probable" opinions may well be proven true through debate.

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Echoed in Laertius's attack against the spider web arguments of sophists, Sextus Empiricus equates sophisms--*sophismata* or fallacies that only bear the appearance of truth--with dialectical reasoning themselves in his *Pyrrhonian Hypotyposes*, and mocks the *useless* absurdities they might lead to: water is black, snow is frozen water, therefore snow is black.[34] Scepticism thus allowed for the identification between sophistry and dialectic, and between false arguments and subtle ones. Such identification fed into Veronese's allegory of dialectic, depicted as Arachne holding a spider web on the ceiling of the 'Sala dell collegio' in Florence:

[FIG 4. Paolo Veronese, *La Dialettica*, (oil on canvas 150 x 220cm), 1575-77 Venice, Ducal Palace, Sala del Collegio].[35]

[34] On sophisms, see Sextus Empiricus, *Adversus mathematicos ...Pyrrhoniarum hypotyposeωn*, trans. Gentian Hervet and Henri Estienne (Paris: Martin Jeune, 1569), 487-8.

[35] I am grateful to Astrid Zenkert for bringing this painting to my attention.

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After dialectic, the epistemological procedures of *scientia* proper--that is, demonstrative, causal knowledge of what is general--are De Bourgogne's second target in this passage, namely the apodictic discovery of principles in any given disciplines, and that of the middle term in the demonstrative syllogism. The discovery of the principles of a given discipline are a matter of intellectual intuition or apprehension in the Aristotelian theory of the demonstration that features in the *Posterior Analytics*;[36] yet the sectarian variety of such first principles and the dissent this variety fuels was a sceptical commonplace.[37] It is within that sceptical tradition that the intuition of such principles is defined not so much as the apprehension of truth, but as witty exercise designed to generate pleasing fabrications. Sextus Empiricus thus equates the most ingenious philosophers with good rhetoricians championing falsehood--echoed in De Bourgogne's "falsi patrocinium"--because their main concern is less the discovery of truth than the rhetorical ability to generate belief (*ad fidem faciendam*) by inventing credible lies or fictions.[38] As Montaigne ironically reminds us in the 'Apologie', the principles of natural philosophy adopted by various philosophical sects--from

[36] Aristotle, *Posterior Analytics*, II.19.100b5-17, repeated in A Sancto Paulo, "Qualia esse debent legitimae demontstrationes principia", *Summa logica,* 226 and in Fonseca, *Institutionum dialecticarum libri octo*, 223.

[37] The first part of Sextus Empiricus's *Adversus mathematicos* amounts to a doxographical survey of the contradictory views on the nature of truth held by Greek philosophical sects from pre-Socratic philosophers to the Hellenistic Stoics. Sextus Empiricus, *Adversus Mathematicos*, 119-184.

[38] "Fortasse ergo in philosophia quoque, ex ii qui quaesierunt veritatem, ii qui sunt quidem maxime intelligentes, eo quod valeant ingenio, videntur esse apti ad persuadendum fidemque faciendam, etiam si falsum defendant" ("it could therefore be that in Philosophy as well, among those who would have been investigating the truth, those who are indeed the most clever, because they have a good *ingenium*, seem to be the best at generating belief, even when they argue in favour of falsehood): Sextus Empiricus, *Adversus mathematicos* (Geneva: Pierre et Jacob Chouet, 1621) 197.

Epicurean atoms to Stoic pneumata-are just such credible fables.[39] Read through this sceptical lens, *scientia* and poetics coalesce: the Ovidian fable of Arachne therefore proves a suitable emblem for scientific discourse too.

(Academic) scepticism itself is swept away in De Bourgogne's Pyrrhonian condemnation of philosophy: surely, the sceptical "I know nothing" offers some sort of certainty and is therefore a path to truth. It is difficult not to hear in this ironic suggestion a satire of the Cartesian method, which does indeed take the sceptical "I know nothing" as it revolutionary epistemological starting-point; the *Discours* had been published the year before De Bourgogne's *Compass*. Yet, rather than the Cartesian, analytical "chains of reasons" modelled on mathematical reasoning, De Bourgogne goes on to denounce the epistemological standards of the Aristotelian demonstration. In a truly demonstrative syllogism, the middle term should express the proximate, efficient or even final cause. The ability to discover quickly the middle term in a demonstration is defined as quick-wittedness (ἀγχίνοια**)** in the *Posterior Analytics*, a term translated by the Latin *ingenium* in scholastic textbooks.[40] Yet such a proximate final or efficient cause often amounts either to a *proprium* (an essential attribute) or even the specific difference (the defining essential attribute) of the subject of the first

[39] See on the question the ironic survey of the endless diversity of natural-philosophical first principles in Greek philosophy in Montaigne, 'Apologie de Raimond Sebond' (II.12) in *Les Essais*, ed. Marie de Gournay (Paris: Abel l'Angelier, 1595), 232*v*-33*r*.

[40] Aristotle, *Posterior Analytics*, I.34, 89b10-11. See also André du Laurens *Historia anatomica humani corporis* (Paris: M. Orry, 1600), 535 which features in the La Flèche library: "Ingenium autem appellat ἀγχίνοια, id est, solertiam, quae definitur 'ευστοχια, id est, inveniendi et conjiciendi promptitudo" (Indeed he calls *ingenium* ἀγχίνοια, that is, quickness of mind, which is defined as 'ευστοχια, that is, speed in discovering and inferring). Du Laurens glosses Niccolò Leoniceno's translation of ἀγχίνοια as *ingenium* in his Latin text of Galen's *Ars parva*, which states that quick-wittedness (*ingenium*) is dependent on subtle brain matter. Galen, *Galeni medicinalis ars Nicolai Leoniceno interprete quae et ars parva dicitur*, trans. N. Leoniceno (Venice: Jacob Pentius de Zeucho, 1508), 6*v*.

premise in the syllogism. In other words, the inferential force of the Aristotelian, causal demonstration often derives from the fact that the middle term makes explicit shared predicates in the definition (genus + specific difference) or, in its absence, the description (which includes the list of essential attributes) of the major and minor terms in the first two premises; that is, the demonstration merely "unpacks" a definition or description. However, De Bourgogne takes stock of the humanist and sceptical critiques of such requirements, also widespread in early modern scholastic textbooks: identifying such specific differences or essential attributes is exceedingly difficult; we only know very few of them.[41] The stringent epistemological requirements defining a good scientific demonstration in scholastic terms mean that such demonstrations are very rare, and true science very limited. De Bourgogne concludes his attack on epistemological forms of ingenuity with a satirical and highly reflexive flourish: epistemology takes itself as its object in the suggested disputation of "whether or not the very small numbers of known *propria* qualifies as a number", which mocks an existing, epistemological type of scholastic disputation.[42]

Their *res* corroded by sceptical laughter, subtle dialectic and ingenious *scientia* end up, once again, as a rhetorical matter of style. Dialectical subtlety equated with

[41] Occurrences of the [genus+specific difference] definition were far and few, as the humanist Rudolph Agricola pointed in his 1515 *De inventione dialectica libri tres*. The impact of such rarity on the true demonstration "propter quid" (by proximate causes) was noted by A Sancto Paulo: "Sunt autem rarissimae eiusmodi demonstrationes, quia accuratae rerum definitiones ut plurimum nos latent." (These sorts of demonstrations are indeed very rare, because precise definitions of things are usually hidden to us), A Sancto Paulo, *Summa logica*, 224. For the sceptical condemnation of the shortcomings of demonstration, see Sextus Empiricus, *Adversus mathematicos*, 228-56.

[42] A Sancto Paulo thus dedicates the first five "preliminary questions" (*quaestiones proemiales*) of the *Summa logica* to establishing the epistemological status of the discipline he is about to expose, such as "Quomodo, seu quot in partes dividenda sit dialectica." (How, or rather, into how many parts should dialectic be divided). A Sancto Paulo, *Summa logica*, 1-9.

sophistical syllogisms had a well-known precedent in Michel de Montaigne's "ham and thirst" sophism, where it is turned into a joke:

> Get rid of those thorny problems of dialectics -- they are excessive: our lives are never amended by them [...]. What will he do when they harass him with some sophistical syllogistic subtlety: bacon makes you drink; Drinking quenches thirst: therefore bacon quenches your thirst? Let him simply laugh at it: it is cleverer to laugh at it than to answer it.[43]

Sceptical laughter easily turns sophistic syllogisms and the jargon of dialecticians into jocular nonsense and puns: Pyrrhonian sceptical arguments quickly land their reader in the realm of satire. The same sceptical and ultimately satirical vein so evident in Montaigne takes the form of the anti-scholastic pun in the opening rhetorical questions – all of which are borrowed from Petrarch's preface to the *De remediis*. The knotty problems that cannot be undone (*inenodabiles nodos*) thus mocks the *enodatio* (elucidation of meaning) section in a scholastic *quaestio*: *enodationes* were meant to clarify the terms of the *quaestio* before delving in the subject-matter proper.[44] In a similar fashion, the sceptical attacks on *scientia* end in pure wordplay. Stylistic brevity in philosophical argument is de Bourgogne's final piece of advice in this section: there is no need to stoop even to the lowest, weakest, most rhetorical form of proof, the

[43] "Ostez toutes ces subtilitez espineuses de la Dialectique, dequoy nostre vie ne se peut amender [...]. que fera-il si on le presse de la subtilité sophistique de quelque syllogisme: le jambon fait boire, le boire desaltere, parquoy le jambon desaltere? Qu'il s'en mocque. Il est plus subtil de s'en moquer que d'y repondre". Michel de Montaigne, 'De l'institution des enfans', I.26 in *Essais*, pp.163-171; translation (with a minor change) from Michel de Montaigne, *The Complete Essays*, trans. by Michael Screetch (Dover: Penguin, 2003), electronic text.

[44] "Enodatio" is thus a well-defined section in the commentary structures of the Coimbra commentaries on Aristotle. See for example the 'enodatio' of the controversy on the nature of the heavens in Aristotle, *Commentarii in quatuor libros De caelo, meteorologicos, parva naturalia*, ed. collegium Conimbricenses, 1st edn 1592 (Cologne: Lazarus Zetner, 1600), 67, which starts by highlighting the polysemy of the words 'immortal' and 'incorruptible'.

example, to bring the whole critique of demonstration home: after all, examples breed *copia*, whereas emblematic satire demands economy of means. Such economy of means finds its perfect expression in the oxymoronic pun "solid science/stupid science", which turns good science (*solidus*) into a crass, or crude one (*stolidus*), since *scientia* merely relies on the trite, obvious unfolding of known definitions. The pun thus offers a witty variation on the longstanding commonplace of ignorant science, a requirement of true faith in the patristic tradition,[45] a condemnation of rationalist claims in the sceptical, philosophical one.[46]

Dissenting Clocks and the Defense of Commonsense: Against Mixed Mathematical Ingenuity

A further satirical commonplace leads De Bourgogne from deriding epistemological ingenuity to mocking mixed-mathermatical subtlety: it is also at this point that the stylistic ingenuity of the text shifts from verbal to visual wordplay, and provides a witty because allusive commentary on the spider emblem. De Bourgogne's initial satirical simile is borrowed from Seneca the Younger's Menippean satire, *The Gourdification of Claudius*: it allows him to mock mixed-mathematical and mechanical ingenuity or subtlety, epitomized in clock-making. "Philosophers will agree more often than clocks"

[45] The paradox thus structures one of Chrysologus' sermons: "there the wise men of the time he made stupid, the observers of the world he taught no to see a thing, the teachers of science he made devoid of science, the enquirers in all things he sent back ignorant." (Hinc sapientes saeculi fecit stultos, speculatores mundi docuit nihil videre, professores scientiae fecit scientiam non habere, inquisitores rerum omnium dimisit ignaros), Petrus Chrysologus, *Sermones*, ed. Jacques-Paul Migne, Patrologia Latina 52 (Paris: Migne, 1845), 0470D.

[46] On this point, Sextus thus turns a paradox into an attack *ad hominem* against Chrysippus the Stoic who stated that "the fool is ignorant of all things": since Chrysippus was, like all dogmatists and human beings, a fool, his statement does not necessary hold and ascertaining a criterion of truth is not possible. See Sextus, *Adversus mathematicos*, 182.

Seneca had said, pointing out that precise time-keeping was even less likely to occur than philosophical consensus.[47] Such likelihood is altogether absent from De Bourgogne's version of the same simile: philosophers, like clockmakers, always stray from the absolute rule of truth they all individually claim to utter, yet on which none of them can agree. A caricatural example of such disagreement about time-keeping features in the La Flèche library: *L'usage de l'un et l'autre astrolabe, particulier et universel...corrigez, augmentez, et remis en meilleur ordre*. Amended by the printer Jacques Moreau, this is the fourth, 1625 edition of the 1545 *L'usaige de l'astrolabe, avec un traicté de la sphere* by Dominique Jacquinot, one of the very first treatises in the vernacular to describe the constitutive parts of the astrolabe and its use. Every single page in the 1625 edition is heavily annotated by Moreau, who relentlessly pinpoints both mistakes made by his predecessor David Robert, who amended the third, 1617 edition of the book, and discrepancies between the 1545 celestial computations of Jacquinot and his own.[48] Time-keeping reliant on the mechanical instantiation of celestial motions had been a paradigm of rationalism since Cicero: in De Bourgogne's commentary, it becomes yet another instance of fruitless pedantic dissent.[49]

[47] See above n.51 for the full text and translation.

[48] Jacquinot's original text was a luxury manuscript made for Catherine de Medicis (Condé library, chateau de Chantilly, Ms 323). See Dominique Jacquinot, *L'usaige de l'astrolabe, avec un traicté de la sphere* (Paris: Jean Barbé, 1545); Dominique Jacquinot, *L'usage de l'astrolabe avec un petit traicté de la sphere...corrigé esclarcy et augmenté ...suivant la reformation du calendrier par David Robert*, ed. David Robert (Paris: Jerome de Marnef, 1617), and Dominique Jacquinot, *L'usage de l'un et l'autre astrolabe, particulier et universel...corrigez, augmentez, et remis en meilleur ordre*, ed. Jean Moreau (Paris: Jean Moreau, 1625).

[49] Cicero, *De natura deorum*, II,38, 101-7.

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In the early modern period, the mechanical arts became the touchstone of ingenuity.[50] Nicolas Caussin thus noted in his rhetoric textbook that good *ingenia* excelled in mechanical arts and techniques, and went on to illustrate his point by listing all sorts of marvels of mechanics and craft -- the automaton turtledove of Architas, the fall of Phaeton engraved on the gemstone of a signet ring, the whole story of Christ's passion finely delineated on one's nails.[51] Chief among witty engineers was Archimedes: his fabled glass copy of all celestial motions was the model against which Angelo Poliziano assessed the ingenious wonder of a clock by Lorenzo della Volpaia which prompted much curiosity in Florence at the end of the fifteenth century.[52] Indeed, the joint early modern development of mixed mathematics and mechanics contributed to making the clockmaker one paradigmatic figure of mechanical wit, as Cardano highlighted in the *De subtilitate*.[53] Cardano thus lists among the wondrous artificial inventions demonstrating subtlety and improving on those of the ancients that of the

[50] See Hélène Verrin, *La gloire des ingénieurs: l'intelligence technique du XVIè au XVIIIè siècles* (Paris: Albin Michel, 1993).

[51] Caussin, *Parallela*, 104. Caussin lifts verbatim this list of ingenious marvels of mechanics and crafts from the book of his fellow Jesuit writer Jacopo Pontano, author of the *Attica bellaria, seu literatorum secundæ mensæ, ad animos ex contentione et lassitudine studiorum lectiunculis exquisitis, jucundis, ac honestis relaxandos*, 3 vols (Augsburg: Andréa Asperger, Johann Hertzroy, 1620 -- 1st edn 1617), III: 72.

[52] Angelo Poliziano, "Letter to Francesco della Casa, 4 August 1484" *Epistolae* IV.8 in *Opera omnia* (Venice: Aldus Manutius, 1498), f.lr-v. For a detailed account of the reception of this mechanical wonder in the Ficinian context, with a transcription and translation of the letter, see Stéphane Toussaint, "Ficino, Archimedes and the Celestial Arts" in *Marsilio Ficino: His Theology, His Philosophy, His Legacy*, ed. M. J. B. Allen, M. Davies and V. Rees (Brill: Leiden - Boston, 2002), 307-26.

[53] In the *De subtilitate*, the clock's pendulum features as an example of double motion (by density and rarity), a clock which marks the hour both with its arm and with a strike is noted as an example of outstanding craftsmanship, and clocks reliant on wheels rather than suspended pendulum are listed as newly discovered instances of subtle arts: Cardano, *Les livres de Cardan, intitulés De la subtilité*, 10a, 185a-b, 390b.

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mechanical clock with its cogwheels.[54] Cardano also reminds us that, as a mixed-mathematical art, the making of time-keeping devices belongs with architecture: the ninth book of the *De architectura* touches on sundials. In the emblem, poised in its niche at the centre of a rectilinear net in the architectural display of this grand urban perspective, the spider evokes a sundial: its signature motif finds a structural echo on the two clock towers in the background. The commentary's development on mechanical and mixed-mathematical subtlety thus invites the reader to exercise his own wit by reading in the emblematic spider a visual metaphor of ingenious time-keeping. This metaphorical reading also punned implicitly on astronomical, technical jargon: in the astrolabe, the *rete*, the last movable disc on top of the astrolabe which represents the main constellations of the zodiac and especially their most radiant stars, was also called "the spider":

[54] Gerolamo Cardano, *Les livres de Hierosme Cardanus médecin Milannois, intitulez de la Subtilité, & subtiles inventions, ensemble les causes occultes et les raisons d'icelles* (Rouen : Veuve Du Bosc, 1642), 387a. This edition features in the La Flèche library.

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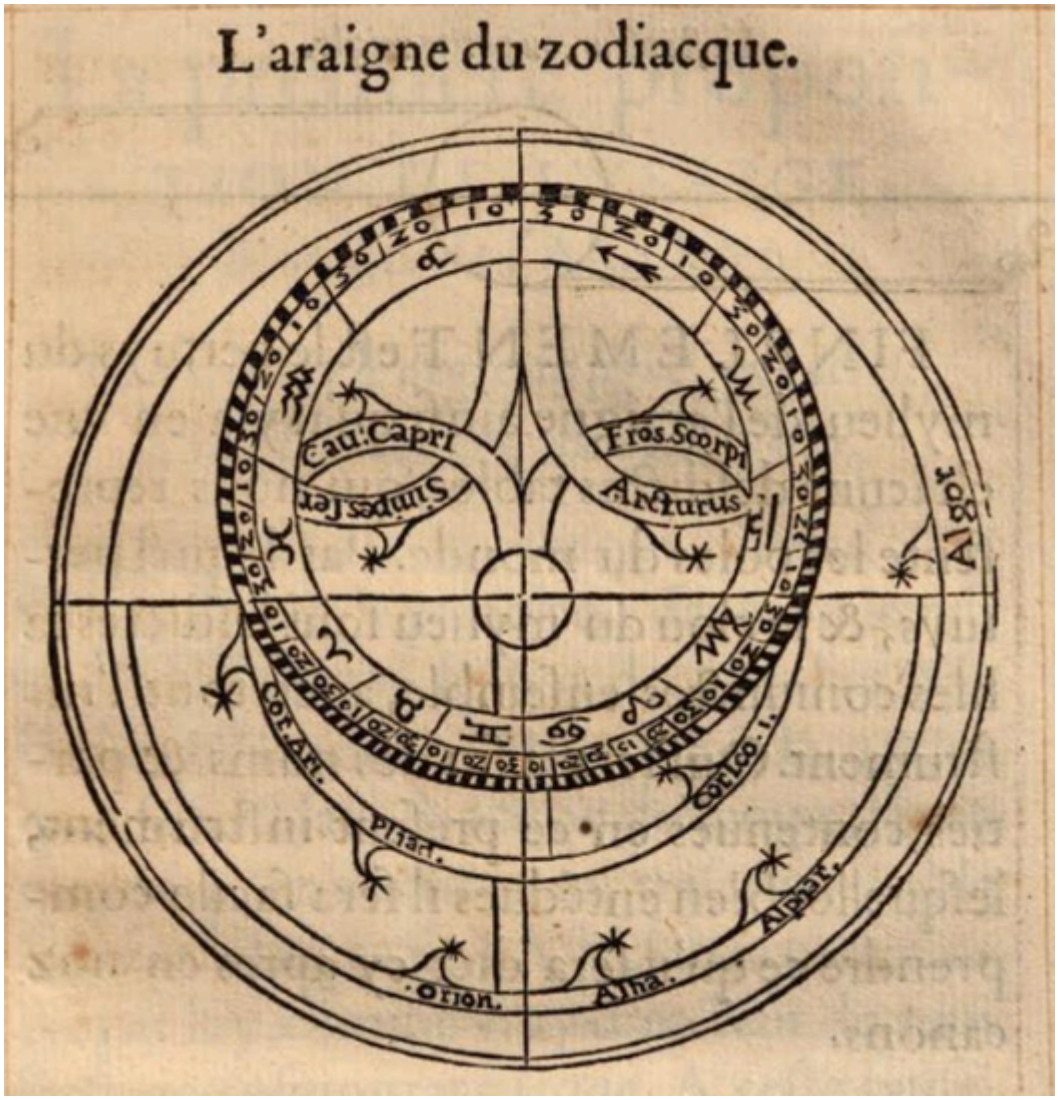

[FIG. 5. 'L'araigne du Zodiaque' in Dominique Jacquinot, *L'usaige de l'astrolabe avec un traicté de la sphere* (Paris: Jean Barbé, 1545), 19.

The similitude between the clock and philosophical disagreement sweeps away, in the same satirical gesture, philosophical and mixed-mathematical ingenuity for their pedantic, rationalist demands, be they impossible criteria for demonstrative truth or the quest for numerical accuracy. Clocks (sundials, astrolabes, but also pendula) thus provide the emblematic spider of *ingenium* with yet another meaning, that of pedantic precision in the mixed-mathematical and mechanical endeavours which characterized the emergence of the "New Science".

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Style and The Commonsensical Discipline of Wit

De Bourgogne's emblem relentlessly castigates ingenuity as subtlety under all its guises, old and new: in rhetorical invention, in scholastic disputations and demonstrations, or in mixed-mathematical computations.

Even as it does so the castigation itself, however, promotes other forms of ingenuity. Ingenuity as a stylistic, witty practice is the most apparent. De Bourgogne's prescriptions are clear. In rhetoric, against the flimsy *copia* of metaphors, favour the sharp, aphoristic conceits of critical judgment: the former is useless brain-racking, the latter is useful in disciplining one's *ingenium*. In dialectic and philosophy, dissolve the complexity of subtle arguments with sceptical laughter: satire as a witty literary genre and compact style shape this moment of the commentary, which defines the ingenious philosopher as a good story-teller, and turns claims to *scientia* into puns. In mixed mathematics, give up on the pedantic quest for precision, and revel in the polysemous visual pun of an emblematic spider spinning not just webs, but clocks.

These stylistic expressions of wit are meant to bring home the central lesson: *ingenium* as wit ought to be disciplined because it is integral to one's *ingenium* as temperament and moral nature. The appropriate expressions of wit which indicate a good temperament are pedagogical docility, sound judgment, and commonsense. Thus in rhetoric, subtle wit (*ingenium*) as the rhetorical ability to craft metaphors is useless and ought to be disciplined by one's nature (*ingenium*) as a docile site of good learning. Similarly, logical, epistemological and mixed-mathematical ingenuity only foster sterile dissent, and ought to be reined in by a collective, endoxal form of knowledge uncluttered by pedantic attempts at precision: the common man demonstrates that he is not puzzled by the experience of contradiction. Good sense, or commonsense--

ingenium as inborn nature, but also collective identity--should silence the excesses of logical, epistemological and mixed-mathematical subtlety--the *ingenium* of scholastics or *novatores* alike.

That such discipline should come about through the ingenious means of witty genres and their related stylistic expressions (the emblem, satire, the conceit, puns) in de Bourgogne's text is a stark reminder that the *ingenium* relates, par excellence, to the invention and manipulation of mental representations. De Bourgogne's emblem is replete with such striking images, be they the architectural vista and spider web of the picture itself, or the conceits and similes which punctuate the text: wit as a chipped blade; philosophers as dissenting clocks; the speed of a mind crashing into the gates of heaven. The *ingenium* in the Huartian and Cartesian sense of the embodied site where the making and manipulation of images takes place, either towards generating knowledge (wit), or towards moral and religious disciplining (inborn nature) is therefore not only the topic of De Bourgogne's lesson, but its very medium. In this respect, the culture of ingenuity and its ambiguities encapsulated in De Bourgogne's emblem offers a new angle on a very old, Aristotelian philosophical view: that there is no thinking without images.[55] That lesson was still very much central to the first methodical attempt of one of La Flèche's pupils, the *Regulae ad directionem ingenii*. of René Descartes.[56]

[55] Aristotle, *On the Soul*, III.7, 431a16.

[56] The *Regulae*, left unfinished, were in all likelihood written in the 1620s. There Descartes defines the *ingenium* as follows "propie autem ingenium appellatur [vis] cum modo ideas in phantasia novas format, modo jam factis incumbit" (this power is properly called ingenium either when it generates new ideas in the phantasy, or when it applies itself to those already made there), René Descartes, *Regulae at directionem ingenii* in AT.X (1908): 416. See Dennis L. Sepper, *Descartes's Imagination: Proportions, Images, and the Activity of Thinking* (Berkeley: University of California Press, 1996).