

On Auctoritates and Method in Spanish Medical Humanism: The Case of *Examen de ingenios para las ciencias*

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INFORMACIÓN ART.

Recibido 5 marzo 2016
Aceptado 30 mayo 2016

Keywords
history of differential psychology,
medical humanism,
auctoritates,
Renaissance,
method

Palabras Clave
historia de la psicología diferencial,
humanismo médico,
auctoritates,
Renacimiento,
método

ABSTRACT

Juan Huarte de San Juan's treatise *Examen de ingenios para las ciencias* (1575) aims (1) to explain the factors that make a man excel in one science yet render him incapable of another, (2) to discover the number and differences of human wits, and the arts and sciences that correspond to each, and (3) to illustrate the way that all this can be known. Whereas Huarte takes the conceptual Hippocratic-galenic framework as his starting point, he acknowledges that tradition proves insufficient to achieve the goals he has set himself, and thus ponders the best alternative method of succeeding in his enterprise. After an overview of the ancient authorities acclaimed by Spanish medical authors in the sixteenth-century, particularly within the current of medical humanism that prevailed at the University of Alcalá, Huarte's home university, it will be seen how Huarte criticises such authorities and emphasises the novelty of his own project.

Sobre auctoritates y método en el humanismo médico en España: el caso de *Examen de ingenios para las ciencias*

RESUMEN

El tratado de Juan Huarte de San Juan *Examen de ingenios para las ciencias* (1575) tiene entre sus objetivos fundamentales (1) explicar los factores que hacen que un hombre destaque en el estudio de una ciencia (y, sin embargo, sea inhábil en otra), (2) identificar los tipos de ingenios humanos, y las artes y ciencias que a cada uno de ellos le son propias, y (3) ilustrar el método por el cual todo esto puede averiguarse. Si bien el marco conceptual de partida es el hipocrático-galénico, Huarte admite que limitarse a seguir la tradición es insuficiente para conseguir sus objetivos, y que es preciso utilizar un método diferente en su empresa. Tras una revisión de las autoridades más reconocidas por los autores médicos del siglo XVI en España, particularmente dentro de la corriente del humanismo médico entonces dominante en la Universidad de Alcalá, alma mater de Huarte, se verá cómo Huarte critica a dichas autoridades y enfatiza la novedad de su propia obra.

Introduction

"All that which Galen writeth in this his book is the ground-plot of this my treatise" (Huarte 2014, p.99), affirms Juan Huarte de San Juan at the beginning of the *Examen de ingenios para las ciencias* (1575).¹ From Galen, Huarte takes foundational inspiration to describe the

differences of wit, the doctrine of the temperament, the nature of the brain, and the influence of temperament upon character and aptitude. Galen, who saw himself as the true interpreter of Hippocrates, presented his doctrine as the culmination of the Hippocratic tradition, one which amended his predecessor's inaccuracies and faults. Like Hippocrates, Galen believed that human health depended on an

¹Richard Carew's translation, published for the first time in London in 1594, was the first translation of the *Examen de ingenios* into English. All quotations to Huarte's text are to the 2014 edition of Carew's rendering.

equilibrium between the four humours (blood, yellow bile, black bile and phlegm; in themselves the result of a mix, in different proportions, of the four basic elements) and *pneuma*, a subtle material component of the blood responsible for many bodily processes. The concept of humour developed by Galen systematises various previous theories, and reduces them to the form in which they would be transmitted throughout the Middle Ages and the Renaissance.² Galen's notions lead to the formulation of a typology of temperaments dependent on the predominance of one specific humour; Galen in effect differentiates nine general temperaments: a temperate one (with the four humours in equilibrium), and eight intemperate ones. These typological differences are passed on to medieval culture essentially through the *Isagoge* of Hunayn Ibn Ishaq/Johannitius, and the *Canon* of Avicenna, and are still sufficiently current in the sixteenth century that about a third of all the quotations in the *Examen de ingenios* are taken either from Galen or from the *Corpus hippocraticum* (García Vega 1991).³ Not coincidentally, Galen and the *Corpus hippocraticum* constitute two of the intellectual pillars in the training of physicians at the University of Alcalá, Huarte's *alma mater* and, in his student years, a centre of medical humanism in Spain. Furthermore, Aristotle's works on physics, particularly *De anima*, *De memoria et reminiscencia*, *De partibus animalium* and *Problemas*, are extensively quoted by Huarte, whereas he refers to Plato and Cicero less frequently, and not at all to Avicenna or any other Arabic author.⁴

The pages that follow provide an account of, firstly, the defining traits of medical humanism in Spain in the sixteenth century, and the educational *milieu* that surrounds Huarte during his medical training at the University of Alcalá. The focus here is on those authors recognised as medical authorities by Huarte's teachers (Fernando de Mena, Cristóbal de Vega and Francisco Valles, among others) and their contemporaries, and their work in translating, editing and commenting on the ancient texts to update them and achieve a better understanding of them. Secondly, Huarte's approach to the authors he hails as authorities, his use of tradition and his efforts to update it in the *Examen de ingenios*, will be discussed. In this regard, his concerns for the proper method for natural philosophy come to the fore in his work; in fact, to his mind, one of his most valuable contributions is the very method he devises, which in addition explains to a considerable extent the differences between his proposals and those of the authorities he cites. Huarte's open and often strong disagreement with authorities such as Aristotle or Galen, his emphasis on the centrality of observation of nature for the correct understanding thereof, and on the development of his own method of analysis, sustain his repeated claims as to the novelty of his treatise.

Authorities and medical humanism in Spain

The medical Renaissance in Spain has traditionally been understood to comprise the years between the unification of the kingdoms of Castile and Aragon in 1479, and the death of Philip II in 1598. Within this period, the sixteenth century appears as a golden age for Spanish medicine, one somewhat marred by the Counter-Reformation turn of

Philip II's cultural policy, allegedly taken to protect Spain from religious heterodoxy (Granjel 1980).⁵ Many imperial physicians of the central decades of the sixteenth century studied and practised throughout Europe (particularly in Italy and France), developed interests in fields other than medicine, and engaged actively in the renewing process of the critical reception of classical works characteristic of the Renaissance. These humanist physicians initiated the process which did away with the Arabic tradition in medicine by vehemently criticising those who worked with classical doctrines as transmitted through inaccurate medieval translations. Pedro Jaime Esteve, Miguel Juan Pascual and Miguel Jerónimo Ledesma, from the University of Valencia, are among the reformers. Ledesma, who had studied arts and medicine at Alcalá, managed to make humanism the dominant current of thought in Valencian medicine during the middle decades of the century: he taught in Valencia from 1531 until his death in 1547, and in those years held the Chair of Greek and introduced the original Galenic and Hippocratic texts in teaching. Renewers at Alcalá include Rodrigo de Reinoso, trained in Italy, and Andrés Laguna, probably the most renowned representative of all the imperial physicians and a European man at heart (Pérez Fernández, 2012), having studied at Salamanca, Paris and Bologna, and written various and diverse works (Lahiff, 2012).

Renaissance humanism coexisted with an Arabized scholasticism of medieval origins in the first half of the sixteenth century. The latter emerged in the Latin medieval universities from the assimilation of Greek, Hellenistic and Arabic scientific knowledge from translations into Arabic. On the other hand, Renaissance humanism tried to retrieve the original texts from classical antiquity, working directly from them to carry out the delicate task of producing philologically sound editions and translations, so as to avoid the inconsistencies and errors of the medieval texts. In the first third of the sixteenth century, the form of Arabized Galenism inherited from the Middle Ages, sustained mainly through the Latin translation of Avicenna's *Canon* and propagated by physicians such as Gaspar Torrella and Francisco López de Villalobos, prevailed. The followers of this trend did not in general have direct knowledge of the works of the great Arabic authorities, but relied instead on twelfth and thirteenth-century Latin translations produced in cities of the Iberian Peninsula such as Toledo. In the 1530s, the followers of the humanist current began to confront the advocates of Arabized Galenism in the most influential centres of study. By the middle of the century, medical humanists, led by physicians who had studied in Italy and France, succeeded in their criticism of the doctrines transmitted through inexact medieval renderings and interpretations. Alcalá and Valencia became the major centres of medical humanism in Spain. At Alcalá, Rodrigo de Reinoso opposed scholars such as Diego de León, loyal to the Avicenna tradition, in the process of establishing humanist Galenism. With Reinoso, Avicenna's *Canon* no longer had pre-eminence in the curriculum over Hippocrates and Galen, and by the middle of the century the teaching of the *Canon* was relegated to a bare minimum. As G. Siraisi explains:

The detractors of the *Canon* tended to focus upon Avicenna's supposed inadequacy as an interpreter of Greek medical

² In addition to the theories drawn from the Hippocratic tradition, Galen was an experimentalist. His physiological research is wide-ranging (from blood irrigation to differentiated functions of motor and sensorial nerves). Also, he dissected animals to observe anatomy, essentially muscles and bones, and demonstrated that arteries carried blood and not air, as was previously thought. Galen moreover underlined the importance of an appropriate diet to treat and prevent diseases, and to produce healthy and intelligent children.

³ García Vega (1991) discusses Huarte's influences, compiles and counts all the quotations that appear in the *Examen de ingenios*, and groups them into authors and works in order to analyse them in detail.

⁴ Serés (1989) reviews the major sources of Huarte's work: Hippocrates, Galen, Plato, Aristotle.

⁵ In the decade of the 1550s, Seville and Valladolid were under suspicion of being centres of Protestantism in Spain. From these signs of heresy, ideological repression followed. In 1559 the first index of forbidden and expurgated books is published under the orders of the General Inquisitor Fernando de Valdés. On 22 November of that year, Philip II issues a law banning Spaniards from the kingdom of Castile from studying and teaching abroad (with only a few exceptions), and decrees that those who are at the time studying or teaching abroad should return to Spain within four months. Although initially the decree only affected the territories under the kingdom of Castile, it was made effective in those of the Crown of Aragon from 1568. Disobedience of this decree would result in deprivation of one's possessions in Spain and perpetual banishment; ecclesiastical men would be treated as foreigners and deprived of their possessions.

thought, claiming either that he had distorted and misrepresented Galen or that he was merely Galen's ape who need no longer be read in an age in which the full range of Galen's work was becoming available (1985, p.22).⁶

Humanistic Galenism was at the roots of the Vesalian movement, and of a new manifestation of Galenism known as Hippocratic Galenism (López Piñero and Bujosa 1978). With the displacement of the late medieval Galenism by the new humanistic Galenism, based on, among others, the Galenic treatise *De anatomicis administrationibus*, the anatomical knowledge inherited from the Middle Ages (and studied in Spain essentially, though not exclusively, through Avicenna's *Canon*) was also uprooted. At Alcalá, the main centre in Spain for humanist Galenism, the work of Avicenna was no longer part of the readings by 1565. Instead, Fernando de Mena, Cristóbal de Vega and Francisco Valles advocated the introduction of the genuine texts of Galen and the most important books of the *Corpus hippocraticum*, which they translated directly from the Greek and enriched with scholarly commentaries. Although Valles did not question Galen and the validity of his teachings, he made Hippocrates the leading model of theoretical knowledge and practice for physicians. In other words, he engaged in Hippocratic Galenism by approaching Hippocratic texts following the assumptions of humanism, and by taking the Hippocratic system as the model for clinical observation.

The zeal of the Renaissance to fully recover the knowledge of Antiquity went hand in hand with a willingness to revise and reformulate classical doctrines.⁷ Humanist physicians demonstrated a devotion to the classical past, which was considered exemplary, and a reverence for Hippocrates and Galen, together with a desire to apply sound philological methods to the editing and interpretation of texts in order to maintain the purity and integrity of the sources. The rigorous study of the sources is indeed what caused humanist physicians to disagree with them, as well as the idea that observation and experience are as necessary for the work of the physician as knowledge of the theory. The *auctoritates* were thus questioned by their revisers, and their theories revisited or challenged. It was, for instance, a humanist approach to Galenic texts which brought about the Vesalian reform, based on the idea that anatomical knowledge should be founded on the dissection of human corpses.

The University of Valencia, with a long tradition in the teaching of anatomy, was the site of the most important anatomical school of sixteenth-century Spain, and after 1547 it became an active centre of Vesalian anatomical knowledge. From Valencia, the new anatomy spread to Salamanca, Alcalá and the rest of the country. This was partly owing to the fact that, while "the regular practice of the dissection of human corpses became widespread in [the territories of the crown of] Aragon throughout the fourteenth and fifteenth centuries" (López Piñero 1979, p.46), in Castile it was not until the mid-sixteenth century that autopsies on human corpses were practised at universities and hospitals. Spanish physicians, with exceptions such as Daza Chacón, did not take full advantage of Vesalius's stay in Spain between 1559 and 1564 as physician to Philip II (Montero Cartelle 1989). Surprisingly enough, Vesalius's presence in Spain did not appear to affect the Vesalian turn in the country, partly because Vesalius

(...) lived at the Court and not in the university centers, where his anatomical theories were taught and his followers and admirers were to be found»; furthermore, in Madrid «he was to suffer the professional jealousy aroused by his scientific fame and the great esteem in which he was held by the monarch, in addition to the hostility the Flemish aroused among the Spanish courtiers during the reign of Charles I (López Piñero, 1979, p.46).⁸

Fernando de Mena, Cristóbal de Vega and Francisco Valles, professors at Alcalá during Huarte's university years there (1553-1559), left an imprint on Huarte. Mena was physician to the Prince Don Carlos and King Philip II, and his work as a translator and commentator of Galen (published between 1553 and 1558) was remarkable. Cristóbal de Vega, also a translator of Galen and Hippocrates, succeeded Reinoso at Alcalá, and left the university in 1557 to serve the Prince Don Carlos; his *Opera omnia* was published in 1576 and 1587 in Lyon. Francisco Valles, often called the Spanish Galen, left Alcalá in 1572 to work for Philip II; he too was a translator of Galen and Hippocrates, and a prolific author. In 1551 Valles published his influential commentary on Galen *Claudii Galeni pergameni de locis patientibus, libri sex*, and in 1556 his *Controversiarum et philosopharum, libri decem*, in which he proposed the deductive method of the medical sciences that Huarte also defended in his own work. These physicians, representative of the humanistic approach to medicine, understood the texts by Hippocrates as landmarks of medical theory and practice, and did not question the authority of Galen.⁹ Their writings reflect the fact that their personal experience as clinicians also became a criterion for the critical assessment of the medical tradition. Huarte likewise acknowledges the legacy of Hippocrates's writings as the basis for medicine, yet the *Examen de ingenios* stems from personal observation, which he uses to revise the conceptual hippocratic-galenic framework that in general he does adopt.

Authorities and method in the *Examen de ingenios*

As the author of the *Examen de ingenios*, Huarte describes himself not only as a physician but also a natural philosopher, and the *Examen de ingenios* as a treatise in natural philosophy. By natural philosophy Huarte refers to a discipline that

contemplates the entire world, including not only the structure of the universe and the properties of creatures such as animals, plants and minerals, but also the human being itself and its position within the cosmic order. Its scope also covers such fundamental issues as the nature of God and of the human soul, which the ancients generally treated in the framework of *physica* or *physiologia*, i.e., the study of nature. (Hirai, 2011 p.2)

At the end of *De respiratione*, within *Parva Naturalia*, Aristotle had already remarked that "health and disease" are "the business not only of the physician but also of the natural philosopher". According to Aristotle, *up to a point* the activities of the physician and the natural philosopher "have the same scope; for those physicians who have subtle and inquiring minds have something to say about natural science, and claim to derive their principles therefrom, and the most

⁶ Since the middle of the thirteenth century, sections of the *Canon* were part of university curricula, and in sixteenth and seventeenth-century European medical schools Avicenna remained an authority: between "1500 and 1647 at least sixty editions of the complete or partial text of the Canon were printed [in Latin]. [...] In the great majority of cases, their context was the study of the *Canon* in western European, and especially Italian, university faculties of medicine" (Siraisi, 1985, p.17). For more on medical humanism at Alcalá and Valencia in the sixteenth century, see, respectively Martín Ferreira (1995) and Santamaría Hernández (2003).

⁷ Criticism of classical knowledge had also existed during the Middle Ages: the intellectual crisis of the fourteenth century, and the nominalist movement, for instance, had called into doubt the traditional conception of the scientific method and its relations with philosophy and religion.

⁸ For more on the history of anatomy in early modern Spain, see Skaarup (2015).

⁹ In total there were twenty-three translators and commentators of Hippocrates in sixteenth-century Spain. Fifteen of them held chairs at universities, three were surgeons, another three practicing physicians, and two were 'accidental commentators' (Serveto and García López). Of the university professors, three were from the University of Coimbra, a further three (the best regarded ones) from Alcalá (Vega, Valles and Mena), three from the University of Salamanca, one from the University of Zaragoza, and two from the University of Valencia; two practised in Italy and one in Bordeaux, and at least six of them had Jewish origins (Santander Rodríguez, 1971).

accomplished of those who deal with natural science tend to conclude with medical principles" (Aristotle 1986, 480 b pp.22-31). In fact, it was Aristotle's *libri naturales* (*Physics*, *De generatione et corruptione*, *De anima* and *Parva naturalia*, among them) that constituted the main texts for studies on natural philosophy (*philosophia naturalis*), also known as natural science (*scientia naturalis*). The traditional assumption was "that natural philosophy prepares one for medical studies" (Schmitt, 1985 p.12). In the sixteenth century, natural philosophy and medicine were sister disciplines: if natural philosophy was understood "as an essential preparation for medicine",

medicine was viewed not only as an art but also as a science with both speculative and practical branches, which required an underpinning in the study of nature. One consequence of this requirement was that courses in philosophy came to be taught mainly by physicians, and even *physica*, the classical term for natural philosophy, took on the connotation of 'physic' as used in medical practice. (Wallace, 1988 p.231)

In this manner, and considering that in sixteenth-century universities natural philosophy "was primarily, though not exclusively, ancillary to medicine" (Bylebyl, 1979 p.337), it is no surprise that Huarte would claim the title of natural philosopher for himself. Indeed, in the Renaissance, many natural philosophers "were medically educated humanists or humanistically trained physicians" (Hirai, 2011 p.3).¹⁰

As a natural philosopher Huarte questions tradition, as well as common opinion, through the power of the understanding; after all, "natural philosophy appertaineth to the understanding" (p. 184). By means of the understanding, Huarte dismantles false opinions and myths handed down from generation to generation, these often involving pseudo-religious explanations. Unlike vulgar philosophers and the common people, he does not explain the dynamics of nature by resorting to God, even if he acknowledges God as the first cause of all that exists. Rather, he analyses nature according to the set of natural laws that he believes God devised for nature and that can be apprehended through the understanding. To the systematic application of these laws God appears to have trusted the running of the natural world. Nature, thus, is not "a universal cause endowed with a jurisdiction severed from God", but "a name of the order and concert which God hath bestowed in the frame of the world to the end that the necessary effects might follow for the preservation thereof" (p. 95). What natural philosophers do is attempt "to understand the ordinary causes that every effect may hold" (p. 96); to this end they study "the discourse and order which God placed that day when He created the world so to contemplate and understand in what sort, and upon what cause, He would that things should succeed" (p. 96). Inevitably, thus it is that "natural philosophers laugh at such as say 'this is God's doing' without assigning the order and discourse of the particular causes whence they may spring" (p. 96). Vulgar philosophers, by contrast, "make them believe who know little that God or the devil are authors of the prodigious and strange effects of whose natural cause they have no knowledge and understanding" (p. 117). In this manner, even if God is ultimately accountable for everything ("at last we come to end in God, by whose virtue all the agents of the world do work"), that which pertains to the realm of nature should be studied by drawing on natural laws only: "there are some effects which must be imputed to God immediately (as are those which come besides the order of nature) and others by the way of means, reckoning first as a mean the causes which are ordained to that end" (p. 296).

Natural laws are discernible to natural philosophers through observation, deep study, and the application of their understanding. Huarte thus aims to discover the order and reason of God's causes for specific ends, and distinguishes a realm of first and second causes.

God is the first cause, and natural order, even if ultimately presided over by God himself, is autonomous and obeys (save in exceptional cases such as miracles) natural laws. Natural philosophy, then, is the discipline that studies the second causes that operate in nature, and this distinction between first and second causes ought to be born in mind when discussing human nature. After all, the study of human nature implies studying second causes: "Only the first men which the world possessed [...] were made by God, but the rest were born answerable to the discourse of the second causes" (pp. 107-108). Huarte laments that "The ignorant vulgar seeing a man of great wit and readiness, straightways assign God to be the author thereof, and look no further", and by so doing they "cover their ignorance with a kind of warrantise, and in sort that none may reprehend or gainsay the same" because "they affirm that all befalls as God will, and that nothing succeeds which springs not from his divine pleasure" (p. 92). Huarte illustrates this by means of the story of a gardener who asks a natural philosopher and a grammarian why, when farming the land, he never manages to grow what he intends, whereas herbs that he had not planted grew abundantly:

The grammarian answered this grew from the divine providence, and was so ordained through the good government of the world. At which answer, the natural philosopher laughed, seeing he reduced this to God, because he knew not the discourse of natural causes, nor in what sort they proceeded to their effects. (p. 92)

The natural philosopher knows that "the knowledge and solution of things which spring from the divine providence (as are the works supernatural) appertain to the metaphysics (whom we now term divines) but this question propounded by the gardener is natural, and appertaineth to the jurisdiction of the natural philosophers" (p. 93). The common people make God directly accountable for phenomena which can only be understood through knowledge of the rules and laws of nature. For Huarte it is clear that "the vulgar, who know not the particular causes of any effect, answereth better and with more truth as touching the universal cause, which is God, than to say some other unfitting thing" (p. 93), and so, when "seeing themselves recovered from sickness [...] say, it was God who healed them, and that if His will were not, little had the good diligence of the physician availed" (p. 93).

Huarte does not question the truth of miracles as described in the Bible, and sees the hand of God in them: "there are effects which must be reduced to God immediately (as miracles)" (p. 95). On this matter he affirms

that works above nature and wonderful are done by God to show those who know it not that He is omnipotent, and that He serves Himself of them as an argument to prove His doctrine, and that this necessity once ceasing, He never doth it more (p. 95).¹¹

Explaining miracles does not fall within the competence of natural philosophers, and even if certain issues might be easier to explain by calling them miracles or regarding them as the result of the direct intervention of God, these often have natural causes. For instance, the fact that some people have insight into the future is not due to *divine revelation*, but has instead a simple natural cause, that "the

¹¹ Most of the quotations in the *Examen de ingenios* are taken from the Bible, with thirty two out of the seventy two books of the Bible either mentioned or quoted (García Vega, 1991, p.119). From the Bible Huarte draws examples of pathologies and of characters that embody the outward physical signs and manifestations of a particularly prevalent humour, and that behave according to their specific temperament. In general from the Scriptures come well-known stories and archetypal figures that serve to illustrate the timelessness and general applicability of the *Examen de ingenios*'s often abstract claims. In addition, the Bible may function as a means of legitimising Huarte's views in the eyes of a Catholic readership that included the Inquisition, and to make his theories sound more familiar and less extravagant.

¹⁰ For more on natural philosophy and medicine in the Renaissance, see Barona (1993), who devotes a chapter to Huarte.

brain is excessively heated”, and consequently the imagination is exacerbated “through the inequality of the natural heat” (p. 115). In this regard Huarte affirms that “as there are men superior to others in remembering things past, and others in knowing the present, so there are also many who partake a more natural hability for imagining of what shall come to pass” (p. 118).

In their study of second causes, natural philosophers ought to consider not only the opinions of past authorities, but also observe nature closely. In other words, natural philosophers should not blindly follow the writings of the past, but must observe nature to reach their own conclusions, and even if the teachings of renowned authors are of help and guidance, they should not be treated as revealed truth. The fact that Galen, Aristotle and Plato are among the major authorities for Huarte by no means implies that he fully agrees with them on every subject. Whenever he considers them to be partially or indeed wholly wrong, he openly expresses his disagreement. For instance, regarding Plato’s views on the attainment of knowledge, he states: “This opinion is false, and I much marvel that Plato being so great a philosopher could not render the reason of man’s wisdom” (p. 111). Some of his divergences with philosophers of Antiquity follow from the evolution of studies on human anatomy. This explains, for example, why Huarte finds it impossible to agree with Aristotle on matters related to the human brain: “[Aristotle] swarved from reason, for if he had opened some man’s head, and viewed the quantity of his brain, he should have found that two horses together had not so much brain as that one man” (p. 102).

Huarte disagrees with Aristotle on topics as varied as the latter’s distinction between remembrance and memory: “In sort, that Aristotle in this doctrine was somewhat out of the way” (p. 142). In addition, he remarks that “Aristotle knew not the cause whereon was founded the enmity which the understanding hath with the memory” (p. 128). Huarte takes up Aristotle’s interest in the question of why physicians who are proficient in the theory of medicine are nonetheless unfit for medical practice: “Of this effect Aristotle procured to render a reason but could not find it out” (p. 208). Even Galen faced difficulties on this point, “for he could not hit the cause whence it comes to pass that few persons profit in physic” (p. 210), while Huarte does manage to provide an answer to the question. Particularly when Galen’s theories exceed the realm of natural philosophy and cross over into metaphysics, Huarte finds fault within them:

The error of Galen consisteth in that he would verify by the principles of natural philosophy whether the reasonable soul, issuing out of the body, do forthwith die or not, this being a question which appertaineth to another superior science (p. 149).

Notably different from the theories of Hippocrates and Galen are those of Huarte on human reproduction. Neither of the two authorities, Huarte affirms, could explain how to distinguish a fertile person from one unlikely or completely unable to beget offspring: “touching all this, they uttered very little and that not with such distinction as was behooful”; as a result, Huarte deems it “necessary to begin the art even from his principles” (p. 279). When explaining how it can be that foolish parents may have wise children, Huarte again stresses that his manner of thinking is entirely new: “For that this manner of philosophizing never heretofore came to light, it was not possible that all the natural philosophers could shape an answer to this problem” (p. 291). Thus, what appears to be new in Huarte, and what he identifies as genuinely his own thinking, is the «manner of philosophizing», that is, the method. As far as theories on human reproduction are concerned, Huarte disagrees with Aristotle on several points, including Aristotle’s denial that “man and woman incur no infirmity or death by retaining of seed” (p. 277)—which Huarte, as Galen before him, claims to be true—and Aristotle’s belief that the female seed is passive and purely limited to functions of nourishment, contrasting with the much more complex notions on generation put forward by Huarte in his final

chapter “In what manner parents may beget wise children and of a wit fit for learning” (p. 275 *et seqq.*). Huarte instead postulates that, in the formation of a new human being, it is at times the male seed that prevails, but on other occasions it is the female seed. Generally, in matters of reproduction, Huarte states that “Aristotle shaped a very untowardly answer” (p. 306). Counter-arguing an “unsound opinion of Aristotle” (p. 308) often means fighting assumptions customarily taken to be true; this Huarte does with strong conviction, for an opinion that is wrong is in Huarte’s “conceit a stark leasing and very mockery though it be grounded on the opinion of Aristotle” (p. 308).

Thus, Huarte gives preeminence to personal experience over the authority of the great thinkers of the past: the argument of authority is not enough by itself, and support needs to be drawn from direct observation of nature. In his own words, “experience beareth more sway than reason, and reason more than authority” (p. 193). In natural philosophy, the key to knowledge of the natural order lies in the observation of nature. Even if he relies on theories in circulation since Antiquity, Huarte disagrees with them, rejects them and puts forward his own when he thinks it is he, and not the authority, who is right. The *Examen de ingenios* is presented by its author as a work that discusses aspects previously neglected by natural philosophers or dealt with insufficient rigour by them, but never as a compilation, summary or compendium of tradition. Rather, Huarte announces the *Examen de ingenios* as a groundbreaking project, a work that sheds light on matters formerly unknown and that expands previous knowledge. If he takes tradition into account and relies on the teachings of ancient authorities, he concurrently revises their postulates and envisages going beyond tradition to improve the general understanding of man’s natural abilities:

All the ancient philosophers found by experience that where nature doth not dispose a man to knowledge, it falleth out a superfluous labour to toil in the rules of art. But none hath clearly and distinctly delivered what that nature is which maketh a man able for one science, and uncapable of another, nor how many differences of wits there are found in mankind, nor what arts or sciences do answer each in particular, nor by what tokens this may be known, which is the thing that most importeth. (pp. 76-77)

This is precisely the goal: to distinctly deliver what makes a man capable of one science yet not of another, to discover the number and differences of wits, the arts and sciences that correspond to each, and, above all, to illustrate the way in which all this can be studied and known. Tradition proves insufficient to achieve these aims, and the question as to the best method to succeed in this enterprise thus emerges. Such concerns with the proper method for the analysis and classification of nature give structure to the thought of a generation of humanists, from Juan Luis Vives to Sir Francis Bacon, attracted by science and philosophy alike (Serés 1989).¹² Huarte repeatedly stresses the novelty of his project: he promises readers “three conclusions very true, albeit for their novelty they are worthy of great marvel” (p. 78), and presents himself as a pioneer launching a phenomenally complex undertaking. He thus asks readers to forgive his errors and faults, for these are but those of an explorer advancing in *terra incognita*, investigating the essential principles of an intricate field of study:

The first inventor performeth very much if he discover some notable principles, to the end that such as come after may with this seed take an occasion to amplify the art, and to bring it into that estimation and account which is due thereunto. Aristotle, alluding hereunto, sayth that the errors of those who first began to handle matters of philosophy are to be

¹² See also (Garrido Palazón, 1999), who discusses the philosophical birth of the modern scientific method. For more on method in Vives and Bacon see, respectively, Casini (2008) and Henry (2002). More general works on the scientific method in the Renaissance are Blake (1960) and Di Liscia (1997).

held in great reverence, for it proving a matter so difficult to devise new things, and so easy to add unto that which hath been already spoken and treated of, the defects of the first deserve not (by this reason) to be much reprov'd, neither he who addeth ought meriteth any great commendation. (p. 81)

There is no identification on the part of Huarte with any followers, heirs or compilers: his self-portrait is that of the discoverer, the forerunner, a new type of natural philosopher—one who nonetheless quotes Aristotle to sustain his position as such. His labour is to provide the answers that the ancient philosophers did not provide:

It is an opinion very common and ordinary amongst the ancient philosophers to say that nature is she who makes a man of ability to learn, and that art with her precepts and rules gives a facility thereunto, but then use and experience, which he reaps of particular things, makes him mighty in working. Yet none of them ever showed in particular what thing this nature was, nor in what rank of causes it ought to be placed. (p. 92)

Huarte claims to follow Galen and that he is in fact completing Galen's partially true theories. Hence, when he states that "all that which Galen writeth in this his book [*Quod animi mores corporis temperaturam insequantur*, That Character Follows Bodily Temperament] is the ground-plot of this my treatise", he quickly adds: "albeit he declares not in particular the differences of the abilities which are in men, neither as touching the sciences which every one requires in particular" (p. 99). Heraclitus and Vegetius are similarly deficient:

But no philosopher as yet wist to give to every difference of wit determinately that which was his. Heraclitus said: 'A dry brightness makes a most wise mind', by which sentence he gives us to understand that dryness is the cause why a man becomes very wise, but he declares not in what kind of knowledge. (p. 124)

[...]

Vegetius could never attain to the notice what manner of wisdom this is, neither could plot down with what difference of wit he ought to be endowed who taketh charge in war. Neither do I ought marvel thereat, for the manner of philosophy whereon this dependeth was not then devised. (p. 228)

The implication of that last sentence is that "the manner of philosophy whereon" that question depends is devised by none other than Huarte himself. Interestingly, while he quotes a variety of classical sources, he does not mention any contemporary authors, even in passing. Nowhere in the *Examen de ingenios* is there mention, for instance, of Francisco Valles, not even his *Controversiarum medicarum et philosophicarum libri decem* (1556), published when Huarte was still studying at Alcalá, or his later *De sacra philosophia, liber singularis* (1587). Yet, these works must have influenced Huarte (Granjel, 1988). Long is the list of contemporary works that may have been read by Huarte, including Luis Lobera de Ávila's *Banquete de nobles caballeros* (1530), Alonso López de Corella's *Secretos de filosofía y medicina* (1539), Pedro Mexía's *Silva de varia lección* (1542), Alonso de Fuentes's *Summa de philosophia natural* (1547), and Pedro Mercado's *Diálogos de filosofía natural y moral* (1563).¹³ Perhaps the absence of references to the work of his contemporaries is a cunning strategy that sought,

firstly, to ensure maximum prominence for the novelty of his own treatise, and, secondly, to prevent any other living author from being considered a competing authority in the field.

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¹³ Contemporary works outside the field of medicine and natural philosophy that may have influenced Huarte are not mentioned in the *Examen de ingenios* either. These include Juan Luis Vives and Pedro Simón Abril's works on pedagogy, Gómez Pereira's discussions on the nature of human intelligence in *Antoniana margarita* (1554), and Rodrigo Sánchez de Arévalo and Nebrija's works, part of the new pedagogical movement in Spain at the time (Mallart 1952; Mora 1977; Read 1981). For more on the medical and scholarly context surrounding the *Examen de ingenios*, see Iriarte (1948) and Arrizabalaga (2003). For information on Huarte's criticism of the university system of his time, see (Peset 2000).

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