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## Nothing to do with medicine?

Ordinary life, stories and beliefs as educational tools for physicians in Antiquity, Middle Ages and Renaissance

In his treatise *On the powers of simple drugs*, Galen (2<sup>nd</sup> cent.) criticizes the “Sophists” method of demonstration based on induction and example. Yet he himself resorts to examples, giving them a prominent place in the demonstrative process.

Rāzī (9<sup>th</sup> cent.) exemplifies causation, diagnosis, therapy, and relation between the patient, his or her milieu and the physician resorting to stories from all kinds of people, inside or outside the medical milieu. Some of them are examples, like the Galenic ones, some others are telling anecdotes providing guidance, especially moral.

Both Galen and Rāzī transform real-life situations into pieces of medical evidence.

However, “real life” is not independent of time and place. In the Renaissance, the humanists had to reconcile their respect for Galen’s medical authority with their own intellectual and social context. Less erudite works aimed at “professionals” engage with religion as part of the readers’ “real life”, without an explicit link to piety.

Our aim is to study a selection of examples and stories in their context. We would like to focus on the transformation of their nature and use in the framework of knowledge transmission and innovation.

Our study is based on:

- two commented editions of Galen’s four treatises *On the differentiae and causes of diseases and symptoms*: by François Valleriote (1504-1580; edition published in Lyon, 1540), a practicing physician who spent almost all his life in Arles (southern France); and by Leonhart Fuchs (1501-1566; edition published in Paris, 1550), born in Tübingen where he spent almost all his life teaching medicine in the university;
- Fuchs’s *Paradoxa medicinae* (Paris, 1555), a work on “errors” committed by the Arabs and the physicians of his time;
- The *Promptuaire des médecines simples* (Tours 1537; Paris 1544) by the French druggist Thibault Lespleigney (1496-1550).
- *Razi’s Spiritual book (Kitāb ṭibb al-ruḥānī), Aphorisms (Fuṣūl), On smallpox and measles, Comprehensive book (Al-Ḥāwī)*.

We will examine: images explaining the human body and its functioning; Galen’s concept of “nature”; the use of Christian concepts/images/stories; *Razi’s moral stories*; and some “trivial” facts simplifying complex contents.

### I. Understanding the human body thanks to images explaining it

- 1) Galen refutes the Atomists’ opinion (K. 6, 839-840): “the body of living creatures<sup>1</sup> is not like the atom (ἄτομος, *insectilis*) of Epicurus or one of the *anarma* (ἄναρμα, *incompacta*, literally “without joints”) of Asclepiades. It is therefore in all aspects composite”. Disease is the disruption of this composition.

Galen’s example: the affection of “a house, made from impassible stones” concerns only their combination; the body is made from sensitive elements, and therefore its affection concerns both the elements *and* the composition.

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<sup>1</sup> Galen, *On diseases and symptoms*, Ian Johnston, Cambridge 2006, 136, translation: “of the

The house represents the living body, the stones its components. This concrete image of real life facilitates the understanding of Galen's critique against the medico-philosophical theory of the atomists.

In his comment, Fuchs provides "an example for the sake of clarity" from Galen's *De elementis* (K. 1, 429-431 = De Lacy V 1,2 72-74): the house made of bricks, stones and timbers and the heap made of wheat, barley, chickpeas and beans. If the components are merely put side by side but remain the same, it is impossible to produce a whole whose qualities are changed; the "sentient" body is something different because it is not the mere product of combination of unchanged components.

The comprehension of these examples seems to Fuchs as obvious as to the Roman reader of the 2<sup>nd</sup> cent. B.C.

- 2) Galen presents the causes of the "cold diseases" and indicates that the right way to preserve the body's internal heat located in the heart (K. 7, 10-13 and 15) is to avoid excess of cold and nourishing, or prevent obstruction of the pharynx and the pores of the skin. Extinction of this heat can be fatal to the "animal".

Galen's examples:

- a flame is immediately extinguished if one pours on it snow/cold water
- an oil lamp is extinguished if exposed to too cold surrounding air, as the one in the "Istros" region in winter
- too much wood extinguishes the fire; too much oil extinguishes the lamp
- a stove cover or a cupping-glass on a flame interrupts the communication with the surrounding air and destroys it because it hinders its respiration
- blocking the openings of a furnace produces the same result

Both Fuchs and Valleriole comment on "Istros": "the famous river of our *Germania* which bathes the Illyricum; its other name is Danube" (Fuchs); "the famous German river whose other name is Danube" (Valleriole). Valleriole also refers to the ancient authors (Pliny [Fuchs mentions Pliny too], Strabo and Solinus) for further information about "Istros", as if this were the central point in Galen's example.

Fuchs explains the Greek word πνιγεύς (literally "what drowns/strangles") thanks to "Phavorinus and the Souda". He often explains terms referring to the Greek-Greek lexicon of Phavorinus (cf. also "according to Phavorinus and Souda" for ἀποκύησις K. 7, 27)<sup>2</sup>, without translating the Greek lemmas.

Fuchs considers obvious the similitude between the flame and the heat in the heart. Yet the extinction of the flame is the result of a deliberate action (one puts/pours something on it), while the obstruction is the result of a dysfunction of the body (nobody does something to destroy the heat): is the Galenic example accurate? Fuchs does not discuss this point.

One can also pose the question of whether an oil lamp or a furnace, the latter used by Romans as a warming-place<sup>3</sup>, are still familiar to the Renaissance reader, and therefore accurate representations of the living body.

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<sup>2</sup> "Phavorinus": Favorino Varino (Guarino Camerino) bishop of Nocera (1450-1537). He compiled a Greek Lexicon first published in Rome, 1523: <https://onb.digital/result/10305AAD>

<sup>3</sup> <https://urlz.fr/m4aB>

- 3) Galen presents the causes of the hot diseases (K. 7, 3-4) and explains how the heat (which is indispensable for life) becomes fire and the fire a destructive element.

Galen's examples:

- wood or stone rubbed together can light a fire
- putrefaction can light a fire: "I myself saw putrefied pigeon's feces kindle into fire"

Valleriolo comments on concentration that increases heat, "what people living in cold places like *Germania* experience in the *vaporaria/hypocausta*".

Fuchs also refers to the "*hypocausta et caldaria nostra*": the possessive adjective implies that baths similar to the Roman ones actually exist in his country (*Germania*). Both Valleriolo and Fuchs are comfortable with the comparison between the body and the Roman *vaporarium/caldarium*. Antiquarianism was quite widespread in some Renaissance milieus, in order to emphasize the positive aspects of ancient culture, including material one: see for instance Girolamo Marcuriale's association with antiquarians in Rome and the illustrations of his work by the artist Pirro Ligorio, which "reconstruct" ancient monuments<sup>4</sup>.

Fuchs mentions the whole story narrated by Galen (*De temperamentis* K. 1, 657-658) about the house in Mysia, which was burnt down because the putrefied pigeon's feces kindled a fire. He casts no doubt about the veracity of this story, which refers to life in Galen's time and place (Asia Minor). It seems obvious to him that his reader can easily transpose this example to his own time and place.

- 4) In his treatise *On smallpox and measles*, Razi resorts to facts everyone may have seen e.g. in a garden or a kitchen, in order to explain how a child suddenly breaks out in spots: the child's blood is compared to the juice of a fruit; a ripe fruit produces gas which bursts out suddenly, like spots on the skin. This example makes it easier for the physician (and the patient) to understand the disease.

## II. The functioning of the human body

Diseases, symptoms and their causes the physician should recognize and heal.

- 1) Galen explains the diseases "arising in a *dyscrasia* of qualities", This may be the result of:
- (a) **too much heat** (K. 6, 849). It is easily detected either in the whole body, or in a particular limb. Galen's examples:
- legs of people walking too long
  - hands of people working too hard, e.g. rowing (ἐρέσσειν) or digging (σκάπτειν)
  - burning sun
  - heat beside a fire (παρὰ πυρὶ θάλψις)

Neither Valleriolo, nor Fuchs comments on the two painful open-air activities.

In Valleriolo's comment on the marches under the sun we find the story of the bishop of Toul (*Tullensis episcopus*) a "distinguished" man of "extraordinary probity", a high profile patient, who has been marching for a long time in scorching heat (*canicula*) without a head cover. Is a bishop supposed to go walking in such circumstances without

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<sup>4</sup> Nancy G. Siraisi, "The Fielding H. Garrison Lecture: Medicine and the Renaissance World of Learning" *BHM* 78, no. 1 (2004), 24-27 [doi:10.1353/bhm.2004.0045](https://doi.org/10.1353/bhm.2004.0045)

protection? Or is the example only mentioned to update Galen's one? Or Valleriole just seized this opportunity to contrast the extremely careful (*summa diligentia*) physician who immediately moistened and refrigerated the patient with the careless bishop?

Razi relates a comparable experience: a nurse confronted him about his capacity to heal a child who had contracted measles. Her doubts were removed thanks to Razi's interest in the child's eyes. As the main risk in case of measles is blindness, Razi was actually a skilled physician, *the* right person to heal the child.

(b) **too much cold** (K. 6, 850). In case of the whole body, Galen gives the example of people walking too long in too cold places: either they died en route, or they reached a lodging house or their home "half dead and frozen" (ἡμιθανεῖς τε καὶ κατεψυγμένοι).

Fuchs relates a story he knew, shifting the focus from a person *walking* to a *prisoner*, i.e. an immobile one, exposed to extreme cold. This "miserable" man was left without clothes or other protection to die in the cold prison because the guard, a "rascal" (*nebulo*), wanted to abuse his wife. Moreover, the judge was "unaware" of the guard's infamy. Fuchs's update of the initial example includes a moral appreciation that complies with the spirit of his times and readers.

2) Galen presents lethal conditions caused by:

(a) "bad appetites of the stomach" (K. 7, 135) such as unquenched thirst. Examples:

- people on a ship, forced to drink sea water
- people bitten by the serpent *dipsas* and reapers intoxicated by wine contaminated by this serpent.

Both Fuchs and Valleriole comment on *dipsas*, relating the detailed story of how Galen tried to find out if this kind of serpent actually exists in Italy: he questioned the "Marsoi", the serpent hunters, whose answer was negative, but he was not sure about that (*De simpl med* K. 12, 316-317).

Because of Galen's incertitude, Valleriole cites other sources (Dioscorides, Nicander, Paulus, Aetius, Lucan) and Niccolò Leoniceno's, *the expert's*, description of the *dipsas*<sup>5</sup>.

Fuchs adds another rural scene, citing Vergil's *Eclogues* (2, 10-11) and relating the "old reapers'" recipe to avoid intoxication if ever the venomous serpent creeps into the vase when they fall asleep: they add wild thyme (*serpyllum*) and other ingredients to their food and wine. Both Valleriole and Fuchs take for granted the examples related to the Roman world as if life remained unchanged. Fuchs does not question the efficacy of the reapers' recipe. The commentators provide no information about the actual existence of the *dipsas* in the 16<sup>th</sup> century France or Germany.

(b) changing qualities of a nutriment (K. 7, 227-228). Galen's example: the lethal "Persian plant" which became edible when transported to Egypt.

Thanks to ancient *Latin* authors, Valleriole explains that the change of qualities depends on the place. He continues with a list of the best regional *Italian* products, even though he lives in Arles and his audience is supposed to know France better than Italy.

According to Fuchs's commentary, this plant is mentioned in Pliny. The actual reference is in Dioscorides (1, 129, 1-6). It is "an Egyptian tree" Galen saw in Alexandria (*De*

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<sup>5</sup> Leoniceno wrote a treatise *On the serpents* (1518).

*alimenterum facultatibus* K. 6, 617). In the *Paradoxa* (Book 1, c. 27) Fuchs confirms that the plant is not “Persian”, but its name, “*Persaia*” can be misleading.

The two commentaries are “static”, while Galen’s example is about moving. In the *Paradoxa*, Fuchs recommends avoiding “exotic” pharmaceutical ingredients and seems not interested in novelties. Such an attitude may be surprising in an era of navigations and discoveries. Fuchs’s authorities are almost exclusively ancient, as if a medical student and scholar needed no other culture. This is the reason why one is quite surprised to find twice in the *Paradoxa* a near-contemporary authority, the Venetian navigator Luis de Cadamosto or Alvise Da Mosto (*Aloysius Cadamustus Venetus Patricius* 1432-1488)<sup>6</sup> author of *Navigaciones*<sup>7</sup>: firstly for the right description of the “blood of the dragon” and secondly for the *saccharon/zuccharon*, the sweet juice of the bamboo Cadamustus saw in the island of Madera.

### III. “Nature”, Christian faith and good behavior

This section examines what one can broadly call “Galen’s beliefs” and how the humanists cope with them, in an era marked by the importance of the Christian religion.

#### 1) Learned commentaries and treatises

(a) According to Galen, nature (φύσις) “does nothing in vain” (K. 6, 856). “We shall be attributing a certain reasoning (λογισμὸν) and purpose (νοῦν) to the nature” (K. 7, 23), because it moves “what is not useful from the important to the unimportant parts” of the body.

Galen’s concept of nature is described in detail in his treatise *On the function of the parts* (*De usu partium* K. 3, 1-939 and 4, 1-366)<sup>8</sup>.

Valleriole opposes nature to the “powerful yet variable”, “perfidious and slippery” *Fortuna* who is always changing justice to injustice<sup>9</sup>. He cites a poem attributed to Vergil<sup>10</sup>, a “condiment” added to “the sacred theory of medicine”, even though it has nothing to do with Galen’s passage.

Valleriole develops the topic of the “sacred” medicine in his speech publicly given in Avignon, a lavish praise of Galen and medicine, which is included in the edition of Galen’s commentary and whose target audience is the city’s authorities. The divine origin of medicine is confirmed by the fact that Jesus proved himself a doctor healing all kinds of people. These healings are not alluded to as “miracles”, because Valleriole aims at underlining their medical character. The physician, who preserves human life, is a

<sup>6</sup> [https://www.treccani.it/enciclopedia/alvise-da-mosto\\_%28Enciclopedia-Italiana%29/](https://www.treccani.it/enciclopedia/alvise-da-mosto_%28Enciclopedia-Italiana%29/) and [https://www.treccani.it/enciclopedia/alvise-da-mosto\\_%28Dizionario-Biografico%29/](https://www.treccani.it/enciclopedia/alvise-da-mosto_%28Dizionario-Biografico%29/) This important Venetian navigator (part of an old family, patricians since 1207) explored the Western Mediterranean starting from Madera, and then the Western coast of Africa (Gambia, Senegal). His travel relation, *Paesi novamente ritrovati et novo mondo da Alberico Vesputio Florentino intitulato*, was first published in Italian in Venice (1507), then translated into Latin (1550), German, French and Portuguese.

<sup>7</sup> This is the Latin translation of Da Mosto’s work cf. <https://urlz.fr/m4ap>

<sup>8</sup> See discussion by Rebecca Fleming: “Emperor and Demiurge” in *Galen and the world of knowledge*, ed. by Christopher Gill, Tim Whitmarsh, John Wilkins, Cambridge, 2009, 59-84.

<sup>9</sup> *O Fortuna potens, tam variabilis*

<sup>10</sup> It continued to circulate in the next century: it is included in *Iconologia Deorum* (Nurnberg, 1680, p. 162), by Joachim Sandrart, German painter and art historian, (1606-1688), director of the Academy of Nurnberg since 1674). Digitized <https://onb.digital/result/10573CD7>

continuator of God who created life. Valleriole's actual purpose is to prompt the authorities to attract skilled doctors to Avignon, to scrupulously follow their prescriptions as they do their religious obligations, and remunerate them well. "Christianizing" medicine helps him to reach his audience.

In the *Paradoxa*, Fuchs thinks that the physician, who, according to Galen, is "a minister of nature", should "observe the movement of nature". He then repeats one of his favorite topics, considering his contemporary physicians incompetent "bandits" who enjoy "a complete impunity". He also criticizes the *principes* who spend their time "drinking and hunting" (*compotationes et venationes*) and the courtiers (*aulici*) who are always "chatting, boasting, making promises, speaking nonsense and lying"<sup>11</sup>.

In Valleriole's commentary on Galen's recommendation (K. 7, 208-209) to eat meals at regular times, one can also find a rejection of the gluttony and intemperance of people spending their time "taking breakfasts, drinking, taking luncheons, afternoon luncheons, dinners, lunches before the main meal, Bacchanalian revels"<sup>12</sup>.

In general, Fuchs and Valleriole adapt Galen's examples to their time when it comes to society. Criticism on their contemporaries' way of life or moral decay provides medical students /scholars with rules of good behavior.

**(b)** According to Razi, we can control desire and keep the spirit "healthy" thanks to education, reflection and strong will. These "spiritual" capacities may also be used advisedly, turning a morally reprehensible situation into something positive. Examples:

- adults are able to control evacuation of liquid or solid excrements from the body; This is not the case of for children or animals .
- one should be able to suppress or control anger; unable to do that, Galen's mother was always slapping people or breaking objects; yet it is a pity that a person who recovered from anger stopped playing with his beard: this amusing habit was pleasant to the prince
- one should not tell lies or boast, like people who relate extravagant stories to attract attention; yet a bizarre story kept the Prince calm and prevented an execution. Saving a life makes the reprehensible attitude actually acceptable.

**2)** A non-learned treatise intended for druggists: the *Promptuaire des médecines simples*, by Thibault Lespleigney<sup>13</sup>.

Lespleigney educates his "brothers apothecaries" who should know the qualities and use of medicinal substances thanks to narratives from the Bible, systematically rewritten. Religion attracts the attention of the reader who may not have read the Bible, but certainly knows the stories because the majority of them are part of the religious education. Who ignores the burial of Jesus (aloe and myrrh) or the visit of the Magi to the Holy Infant (incense and myrrh)? Or the religious use of incense, "a pleasure for God" used to "chase the evil spirits"? Or even the anointment of Jesus' body with nard/spikenard by Saint Magdalene?

Lespleigney does not limit himself to religious examples. He abundantly refers to Greek, Latin and Arabic authors, using the same method of rewriting their texts. He thus creates a common understanding on how professionals should work.

<sup>11</sup> "garriendo, iactando, pollicendo, nugando, mentiendo"

<sup>12</sup> "in ientaculis, compotationibus, prandiis, merendis, coenis, antecoeniis, et comissionibus"

<sup>13</sup> We studied his work in our Scientiae 2018 and 2021 talks.

#### IV. “Trivial” facts

- 1) Galen (K. 7, 229-230) thinks that the cause of the affection (πάθημα) of “what is nourished” is the nutriment, which is in turn “assimilated and changed”. Affection and change do not only depend on the balance of power, i.e. strength over weakness/ a large quantity over a small one, but also on “the passage of time”: prolonged duration of the action of a weak element modifies a strong one. Galen’s examples:
  - sharp iron “is dulled to some degree in cutting the softest flesh” (duration)
  - “stone has some hollow if stuck by a drop of water” (duration)
  - pouring “a *cotyle* of cold water into an *amphora* of boiling water” or “a *cotyle* of boiling water into an *amphora* of cold water” affects both (mixture).

Fuchs comments on the hollowed stone thanks to a Latin and Greek proverb and to Erasmus’ *Adagia* (or *Chiliades* III, III, 3). While Galen’s example is simple, Fuchs’s explanation is a learned reference intended to be shared with learned readers.

Concerning the mixture of cold and hot water, instead of explaining the measures used by Galen (*cotyla/amphora*), Fuchs insists on an error of translation (*cotyla* is not the equivalent of *hemina*) and encourages the reader to read his annotations in Galen’s *De sanitate tuenda*. Indeed, in the 1541 annotated edition of this treatise, there is a detailed explanation of the terms, followed by a comparison between the Greek and Roman volume measures. Yet it would be difficult for the medical scholar/student of Fuchs’s time to understand Galen’s example, unless he were familiar with the ancient measures.

Valleriole refers to Latin authors (Cicero, Horace, and the veterinarian Columella) who are supposed to give a concrete idea of the volumes mentioned by Galen. He also uses a near-contemporary learned reference, Georgius Agricola’s<sup>14</sup>, *De ponderis et mensuris* (1533). Yet this is a treatise on ancient Greek and Roman measures, not on their contemporary equivalents.

- 2) The physician should be able to make a diagnosis thanks to the sounds emitted by the body when a “superfluity” is evacuated (K. 7, 241). One of them can be compared, Galen says, to the sound of the “clarinet” the “tomb singers” (τυμβαῦλαι) play.

Fuchs explains that the “tomb singers” played in the deceased St. Lazarus’ house when Jesus came in to resurrect him. How is the physician supposed to recognize this sound that nobody ever heard and compare it to the one emitted by the body of his patient?

Valleriole, on the contrary, mentions the musical instruments of his time (*nostra musica instrumenta*) and a lively scene: choral songs accompanying the “plebeians” dances in the streets of Montpellier. He thus facilitates the comprehension of the sound.

- 3) The allegedly medicinal substance called “*mumia*”: according to Fuchs’s *Paradoxa*, Razes and Serapion, medieval Arab authors, explain it as a kind of “gore” (*sanies*), a discharge from a dead body mixed with the aloe and myrrh used to coat it.

Fuchs gives no details about the therapeutic use of the “*mumia*”, but insists that in his time it is used as if the Arab authors were right. His contemporaries are stupid and

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<sup>14</sup> Georg Bauer, physician, natural scientist, mineralogist and philologist: Wilhelm Pieper, “Agricola, Georgius” in *Neue Deutsche Biographie* 1 (1953), 98-100 <https://urlz.fr/m4dm>



deceitful. Some of them replace aloe and myrrh, rare and expensive ingredients, with crow's excrements. Some others expose corpses as a kind of public entertainment.

Fuchs re-establishes the "truth": *mumia* is in fact Dioscorides's *pissasphaltos* (*Materia medica* 1, 73-74.). Galen mentions the combined effect of pitch (*pissa*) and asphalt (*De simpl med* K. 11, 520), and recipes of composed medicines<sup>15</sup>. *Pissasphaltos* is a mineral medicinal substance that has nothing to do with "gore". The German term is "Tirschenblut": Georgius Transtetter Collimitius, a physician, cartographer and natural scientist from Innsbruck (1482-1535), sent Fuchs an authentic sample.

Therefore, "people must not regard our shops (*officinae nostrae*) as dens of vultures or cannibals (*anthropophagarum*), where a human substance is sold as a medicine".

This description has a twofold purpose:

- to underline that medical education includes both behavior *and* skill;
- to highlight the error of Razes, Serapion and their followers, which is the source of this "commerce with corpses". This gives Fuchs the opportunity to criticize an actual phenomenon of his time, without posing the question of a probable change in nature and use of substances from Antiquity to Middle Ages and Renaissance.

## Conclusion

The humanists shift the focus of their comments according to what is at stake. And what is at stake depends not only on the theme dealt with in Galen, but also on whether this theme is open to further interpretation, social criticism, or controversy. But the humanists are also men of their age, and the sixteenth century concerns are not the same as those of the Roman age.

Bookish culture stands in the forefront. The humanists disseminate it to students and scholars, but they do not completely neglect reality, including religion. This can be regarded as their particular method to "update" Galen and share medical culture<sup>16</sup>.

Razi takes advantage of all kinds of experience, even the most futile, but remains rooted in his time and place, even in cases of philosophical advice and moral prescriptions. The latter may be compared to the way the humanists "update" Galen, aiming at professional education *and* ethical behavior.

Does medical education transcend time and place? Yes, as far as the Greek sources are concerned. No, as far as scientific and social stances are put forward, in particular the complex relation between the humanists and the Medieval past. The rhetoric of persuasion, including thoughtful engagement with "real life", plays a crucial role for this education, which links past, present and future.

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<sup>15</sup> *De compositione medicamentum secundum locos* K. 13, 320 and *De compositione medicamentum per genera* K. 13, 372, 548, 558, 560, 740, 754.

<sup>16</sup> An overview of medical education/professional formation: Siraisi (2004), 30-36.