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THE UNCERTAINTY OF MEDICINE: GALEN ON THE NOTION OF ΤΕΧΝΗ ΣΤΟΧΑΣΤΙΚΗ

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In this article we try to show the Galen's perspective on the epistemological status of medicine, in particular starting from the conceptual category of τέχνη στοχαστική. Even though the qualification of τέχνη στοχαστική attributed to medicine does not have an explicitly negative connotation in Galen's *Corpus*, it does occupy a subordinate position compared with the solidity furnished by the *more geometrico* method, and is almost a *necessary evil* that Galen introduces to justify that fallibility of medicine, which at the same time he himself tries in every way to minimize.

Keywords: Galen – Epistemology – Fallibility

Introduction. The general theoretical issue relating to the epistemological status of medicine can receive unexpected but fertile support from the ancient world. The need to affirm medicine as a "scientific" discipline led the principal ancient physicians to reflect acutely on the methodological and epistemological criteria that could ensure that their discipline overcame the frequent accusations – indirectly reported in several works from *Corpus Hippocraticum* – of structural dilettantism. Undoubtedly one of the most interesting voices in ancient medicine, both for the vastness of his production and for the richness of his reflections, is Galen of Pergamon. Unable to address here as a whole the complex issue of the epistemological status of medicine in Galen, in this article we will limit ourselves to an analysis of the theoretical category of τέχνη στοχαστική. According to Galen, this notion – with some limitations, as we shall see – helped to define medicine as a "scientific" practice, and we think that this conceptual category is still useful in the contemporary debate, at least in furnishing some insight on the epistemological bases of medical practice and theory.

It is important to say from the beginning that Galen's position regarding the general status of medicine varied[1]. Nevertheless, what is interesting for us in this context is to identify the characteristics of medicine considered as a τέχνη στοχαστική and, accordingly, Galen's position regarding the question of the scientific validity of such τέχναι. Hence there will not be a complete analysis of Galen's positions regarding medi-

[1] For a more complete interpretation by Galen of the different forms of medicine, see above all Vegetti (1981) and (1994).

cine.[2] Instead, reference will be made exclusively to those passages in which the connection with the *stochasticity* of medicine is made explicit.

The notion of τέχνη στοχαστική. Before proceeding directly to the analysis of the passages in Galen it is important to look at the meaning of the Greek expression τέχνη στοχαστική. In an attempt to translate it, it is possible to trace at least five different semantic nuances, all interconnected, starting from the LSJ[3]. The first of these is the less metaphorical one, which harks back to the etymology of the term: the verb στοχάζεσθαι is formed by the noun στοχός which originally indicated the *target* (Piazza 2004), and the original meaning of the verb is therefore to *aim*, to *aim at the target*.

The second meaning, the one closest to the basic original one, is very frequently found in the Greek authors. It is to *aim at doing something,* which is a metaphorical semantic nuance highlighting the activity of *(in)tending*.

Just as this second semantic aspect is an extension of the original one, the same can be said of the third, also widespread, that is to say the one that stresses above all the *conative* aspect. We are talking about those uses in which the verb can be translated with expressions such as *to attempt* or *to try*. The derivation from the preceding meanings is rather clear: *aiming at the target*, like *aiming at doing something*, implies an attempt without any guarantee of success.

Nevertheless, both in the first meaning of *aiming at the target*, and in the immediately consequent ones of *aiming at doing* and *trying to do*, not wholly explicit is the epistemological meaning that characterizes the common translation of the verb στοχάζεσθαι as *to conjecture* and, accordingly, of the adjective στοχαστικός as *conjectural.* Trying to do something, aiming at doing something, imply the need to make a hypothesis, in a sense *imagining* and *working out* a pathway to follow in order to hit the target aimed at or to bring to a conclusion that which one is trying to reach. In other words, one has, precisely, to *conjecture* (Allen 1994).

A reconstruction of this type also allows us to clarify a fifth aspect concerning the meaning of the verb στοχάζεσθαι and that, in a sense, is negatively opposed to conjecturing. It is the idea of *approximation*, which is intrinsically connected to conjectural activity, but which seems to underline a lackness of stability, rigor, method.

In order to understand why the Greeks elaborated the category of τέχνη στοχαστική and in which sense Galen used it, we must first consider that in their conceptual dictionary the category of τέχνη already existed[4]. It apparently represented an adequate resource for covering the theoretical field constituted by human activities, typically aiming at realization of a product. Medicine is an emblematic case of this particular type of

[2] On this general topic see Frede (1981) and the Van Nuffelen (2014), in particular on the relationship between medicine and divination according to Galen.

[3] Liddell, Scott, Jones and Mckenzie 1996.

[4] The difficulty of translating the term *techne* with one showing equivalent semantic richness authorizes us, we believe, to leave the Greek word untranslated most of the time. See Isnardi Parente (1961) and (1966) for more details.

disciplines that are constantly exposed to the risk of failure, without this necessarily viewed as caused by the τεχνίτης. The relationship between error and failure is at the origin of the category of τέχνη στοχαστική, in the sense that it serves to justify and account for the failures of such disciplines. The category of τέχνη στοχαστική is a sort of compromise that allows such disciplines not to be considered mere practice without, nevertheless, being deemed infallible.

Medicine as a τέχνη στοχαστική. The adjective στοχαστικός, the verb στοχάζεσθαι and their derivatives are very frequent in Galen's work. It is possible to trace around 240 occurrences distributed in a more or less homogeneous way in the whole *Corpus*. In Galen, the problem of *stochasticity* (with all the nuances described above) is closely connected to the problem of the attribution to medicine of the category of τέχνη or, more precisely, to the relationship between the concept of τέχνη and that of επιστήμη. It may be useful to see how this issue is addressed in a work whose attribution to Galen is not entirely certain, the *Introductio seu medicus.* Although Isnardi Parente (1961), for example, considers it an authentic work, it is likely that it was written about a century before Galen's *Corpus*.[5] In any event, it is a work that is highly 'Galenic' in formulation and content.

The part of the work that is most interesting from our point of view is the fifth chapter, whose title already appears indicative: Εἰ ἐπιστήμη ἡ ἰατρικὴ, ἢ τέχνη, *Whether medicine is a science or an art.* It is a chapter that from many points of view is linked to the work entitled Τέχνη ἰατρικὴ, certainly written by Galen, and one that in some respects furnishes even more interesting insights regarding the relationship between τέχνη, επιστήμη and *stochasticity*. In order to better understand the issue it may be useful to consider the context. The chapter opens by examining the opinions of preceding physicians regarding the status of medicine, particularly the position of Herasistratus[6] and that of the *methodic* physicians.[7] Already at the beginning of this chapter the adjectives επιστημονικόν and στοχαστικόν are introduced and contrasted:

Some of the logikoi, among whom Erasistratos, believed that medicine possesses, on one hand, something scientific (επιστημονικόν), like aetiology and physiology and, on the other hand, something conjectural (στοχαστικόν), like therapeutics and semiotics. The Methodics, instead, call it science, (επιστήμη) altogether. Both have lost sight of the truth and this is true above all of the methodics (XIV, 684,11-17).[8]

[5] The authenticity of this work, at first considered early among Galen's genuine works, was challenged during the Renaissance. It is considered a very important point of reference for historians of medicine, in particular for the methodological and epistemological issues but also for the reconstruction of the medical schools since Hippocrates. For more details see the edition edited by C. Petit in 2009 for *Les Belles Lettres*.

[6] A celebrated physician of the third century B.C. and an outstanding member of the Rationalist school of medicine.

[7] For details on the dispute between the medical schools of antiquity, see Frede (1982).

[8] All the translations are mine unless indicated differently.

In light of what has been said, understanding what the author means when he speaks of *stochasticity* of medicine is possible on the condition that we understand which meaning is expressed by the term επιστήμη, which is explicitly the opposite. The definition of επιστήμη comes immediately after the passage just quoted:

In fact, επιστήμη is a stable, sure and unchangeable knowledge by reason (XIV, 684,17-18).

But, according to the author, this type of knowledge not only cannot belong totally to medicine, but, even more in general, cannot completely belong to men. Hence the impossibility of medicine being a science as a whole does not necessarily prove to be a negative fact since the whole sphere of human knowledge is neither certain nor infallible. The general framework, therefore, is that of "accentuated scepticism regarding knowledge of absolute certainty, so that [...] επιστήμη itself seems to be reduced to a limited concept" (Isnardi Parente 1961: 263-264). On the other hand, precisely on the basis of these considerations, the author does not totally set medicine in the opposite sphere, that is to say that of conjecture (το στοχαστικόν), seen in the lowest sense as mere hypothesizing without any method. At the same time, he gives great importance precisely to the element of conjecture, trying to minimize its negative aspects as much as possible, since they would not be worthy of a τέχνη.

To cut the theoretical knot regarding the position of medicine between *being* στοχαστική and *being επιστημονική*, the author resorts to the category of τέχνη as that which is best suited to defining its epistemological status. Appropriately, seeing the ambiguity by which the term has always been surrounded, in this case, as for the equally problematic term επιστήμη, a very clear definition is given:

Therefore, medicine should probably be called a τέχνη. A τέχνη, indeed, is a systematic set of perceptions and thoughts, tested on the basis of quality and quantity, tending towards a useful goal for life (XIV, 685, 3-5).

This definition is perfectly suited to medicine, which is a set of principles regarding man and aimed at safeguarding him and maintaining him in good health (Boudon-Millot 2003). Precisely the issue relating to the necessity of a τέχνη, in order to be such, to tend towards a useful goal, causes attention to shift to the issue that most interests us, namely classification of the different types of τέχναι, and reflection on the possibility of error as constitutive for some, and as accidental for others. According to the author of *Introductio seu medicus*, there are two different types of τέχναι:

1. those that always reach the goal they aim at, such as, for example, the art of the carpenter, that of the shipbuilder or that of the architect;

2. those that "miss their goal, seen as a purpose, or that do not always , but *for the most part* (ως επί το πολύ) attain it, also called *conjectural* (στοχαστικαί). Among these there is medicine (ἰατρικὴ), rhetoric, the ship captain's art and archery" (XIV, 685,15-686,1). In such τέχναι, obviously, the risk of failure is always present.

Lastly, the conclusion of the chapter makes reference to another distinction, transversal to this one, between those arts that aim to reach their goal in the present (e.g., the

art of dance or all musical arts) and those that are projected towards future attainment (e.g., medicine and architecture). The explicit distinction made by the author provides interesting insight. First, there is the observation – not an obvious one – that in this phase of Greek thought a clear-cut division exists between two different types of τέχναι, with no line of continuity between them and with no apparent doubts about the category in which to place the different τέχναι.

Another element to be stressed is the opposition between αεί and ως επί το πολύ, between the category of *always* and that of *for the most part.* Contrasting *for the most part* and *always* makes it possible to distinguish the τέχναι στοχαστικαί from those that are ουκ στοχαστικαί, but also – and above all – to ensure the status of τέχνη for disciplines that are fallible but that *regularly* are successful. The notion of *for the most part* was one of the most important theoretical tools of Aristotelian thought, and it seems to be clear that Galen uses this notion according to the Aristotelian definition[9]. Attempting to summarize the technical definition of *for the most part* described in the Aristotelian framework, we could say that it represents one of the types of the contingent, precisely that type that distinguishes itself from the chance or from the indefinite, or from the accidental (which represent the other type of contingent) and, obviously, from what is always or what is necessary or what is common to all of the cases (which represent, instead, the opposite pole to the whole contingent). Let us read, for example, what Aristotle says in *Topics*:

Some things occur of necessity, others for the most part (ως επί το πολύ), others however it may chance; […] For if a necessary event has been asserted to occur for the most part (ως επί το πολύ), clearly the speaker has denied an attribute to be universal which is universal, and so has made a mistake: and so he has if he has declared the for the most part (ως επί το πολύ) attribute to be necessary: for then he declares it to belong universally when it does not so belong. […] For the contrary of a for the most part (ως επί το πολύ) attribute is always a comparatively rare attribute (*Topics*, 112b 1-12).

In other words, we could say that according to Aristotle, what happens *for the most part* is what happens not by necessity or chance, but according to a rule that admits exceptions. In this sense, there is a clear relationship between the τέχναι στοχαστικαί[10] and the notion of *for the most part*, a relationship explicited in *Introductio seu medicus* (XIV, 685,15-686,1): a τέχνη is στοχαστική precisely because the application of its rules cannot guarantuee *always* the success, but just *for the most part*.

This question is partially connected with another one, concerning the criterion according to which the disciplines are inserted in the two classes described above. We have activities like the craft of the blacksmith, of the shipbuilder or the architect, in which error is possible, but only in cases in which the rules prescribed by the τέχνη have not been

[9] On the Aristotelian notion of *for the most part* see Di Piazza (2011) and its bibliography.

[10] As opposed to what happens in Galen, in Aristotle we do not find the expression "τέχνη στοχαστική", because every *techne*, in a sense, has an element of *stochasticity* (Di Piazza 2011: 73).

respected, so there is the certainty that when this occurs, surely it will be the fault of the τεχνίτης and not of the τέχνη itself. If it is true that the author renders explicit the substantial difference between τέχναι that are στοχαστικαί and τέχναι that are not (the constitutive possibility of error vs. certainty of success) it is also true that he leaves unexpressed what is the most interesting part and, in some respects, the most problematic: what causes some τέχναι to be ουκ στοχαστικαί? In other words, why is the shipbuilder or the architect, in given conditions, surely successful, while the physician or the rhetorician is not?

If we try to find the common element of potentially *infallible* disciplines, we will likely see that what makes them such in the author's eyes is the fact that these τεχνίται work with numbers and measures, which does not happen with the physician or the rhetorician. Given that all τεχνίται have to apply general rules to individual cases, those who have to do with what is measurable or, more in general, countable, have the advantage of being able to make reference to something fixed and unchangeable. The basic idea would therefore seem to be what Plato had expressed in *Philebus*,[11] namely that the distinction between τέχναι στοχαστικαί and others revolves around the possibility of measuring, weighing and counting rather than around the basis of the nature of the subject dealt with. In this connection, what does it mean, in the author's eyes, to say that the architect cannot fail? It means that if he applies in an algorithmic way the rules that his art prescribes, then there can be no error.

Measurability is a topic that is worth looking into[12]. Precisely on the subject of the possibility of measuring, quantifying or, in general, numbering, Galen considers the problem of whether in medicine there can be scope for such activities. The fact is that if this were possible for medicine, precisely in light of what has been said, a still greater degree of stability could be attributed to it. Galen's position on this topic, however, is anything but univocal, considering that in his work there seems to alternate a marked interest in the possibility of quantification and a polemic attitude towards "a metrological-mathematical formulation of medical science" (Grimaudo 1998: 78). This issue concerning the appropriateness or otherwise of using numbers, weights and measures in medicine interweaves with the other issue that is central for us, namely the opposition between the επιστημονικόν *soul* of medicine, which is the bearer of *akribeia*, rigourness, and the στοχαστικόν *soul*, which is at the basis of conjecture. There are some passages in which Galen shows the impossibility of eliminating the στοχαστικόν element (Chiaradonna 2008: 14), and one of the reasons is that it is impossible for the physician to establish exactly the quantities (of food or of medicines) that must be prescribed for the patient. We find this, for example, in the following passage from the *De curandi ratione per venae sectionem*:

Nothing shows so clearly that the medical art is in practice a matter of guesswork (στοχαστικόν) as the question of the amount of each remedy. We often know exactly that the time for administering food or drink, whether cold or hot, is at hand; we cannot be

[11] Di Piazza (2011: 25-26).

[12] For more details on this topic see Grimaudo (1998) and Lloyd (2005).

sure, however, of how much we ought to give. It is the same with purgatives; we sometimes know for certain that a drug purging yellow bile, black bile, phlegm or serous superfluities should be given to the patient; yet we do not know with any certainty the amount that should be administered (XI, 285:10-286,1, transl. by P. Brain).

The *De curandi ratione per venae sectionem* is a late work by Galen, a sort of handbook written at the request of his colleagues, on the topic of bloodletting. As often happens in Galen's works, it is interesting that among several theoretical and practical instructions for applying bloodletting, halfway through the book, our author offers some methodological and epistemological clarifications. In the specific case this clarification concerns the quantification of the treatment to be prescribed. According to Galen, the most emblematic case ("Nothing shows so clearly that…") is that in which the *stochastic* nature of medicine clearly emerges[13]. This problem of quantification is strictly connected to the more general problem of the application of medical rules to specific cases: medical art can tell us *which* foods or medicine to administer, but it cannot specify the *amount* in the different and heterogeneous particular cases. And exactly for this reason, medicine, when it deals with the application of the rule, is *stochastic*: it is "a matter of guesswork" that is not foreseeable *a priori* and, therefore, is always fallible.

In the *De methodo medendi* this issue is clearly addressed. This is one of the longest and the most important works by Galen, principally because it is one of the texts in which, in addition to practical precepts in the application of the medical art, we find abundant theoretical reflections on the epistemological status of medicine itself. More precisely, the importance of the στοχαστικόν element is addressed exactly at those points where Galen tries to clarify the distinction between the general nature of illness and the treatment of a particular patient[14] (Ierodiakonou 1995 and Ierodiakonou and Vandenbroucke 1996). In this case, the το επιστημονικόν-το στοχαστικόν distinction is worked out once again within the differentiation between the possibility of universal theorems and the need for concrete medical practice: the general nature of illness should be diagnosed with a certain and rigorous method, while the therapy of the individual patient can only follow a στοχαστικόν or conjectural pathway. The reason for this difference in method is explained by the differences that illnesses exhibit from one patient to another, so that, even though it is possible to identify its common general features, the course of the illness itself and the response to therapy are closely linked to individual cases[15]. Accordingly, even of the best of physicians it cannot be said that he has precise knowledge of all the factors that influence his practice in the case of a particular patient, though we certainly expect him to understand in general terms the nature of the illness, and to treat the patient on the

[13] We find this connection between the necessity of stochastic guesswork and the quantification of remedies also in a long passage from *Ad Glauconem de medendi methodo* (XI, 31,1-32,3) See Grimaudo (1996).

[14] For example X, 206,3-6; X, 653,11-14; X, 860,9-13.

[15] On the stochastic nature of medicine in the phase of the application of the general theorems, though with different nuances, see also Vegetti (1981), Hankinson (1991) and Chiaradonna (2008).

basis of skilled and reasonable conjectures (Ierodiakonou 1995, 482).

Hence, once again, where we move from the general to the particular plane, from pure theory to concrete medical activity, medicine is rediscovered to be τέχνη στοχαστική, and the activity of the στοχάζεσθαι imposes itself as the only possible mode of action. In *De methodo medendi* this idea of the *scientificity* of universal theorems, and the *conjectural nature* of particular therapeutic applications – which also insistently reappears in other works by Galen[16] – is linked to the distinction between the different parts of medicine. As mentioned, there is an alternating prevalence of the επιστημονικόν aspect or the στοχαστικόν aspect, according to the functions of medicine. In this light, it has been confirmed that a rigorous scientific method can be applied to physiology, or to the study of the functions of the organs of the human body, while in other parts of medicine, such as prognosis or recourse to therapeutics, to conjecture is indispensable. Thus the fact that the possibility of error is nested in practical and concrete action for patient care but not in working out medical theory, together with the attempt to *make conjecture technical*, would allow medicine to maintain its *technical* status.

An intriguing notion: the στοχασμός τεχνικός. As mentioned before, the central issue linked to the epistemological status of medicine (Can a discipline that sometimes fails in the attainment of its objective be defined as a τέχνη, without the presumed τεχνίτης necessarily being held responsible?) is found in numerous other works by Galen. Once more the answer revolves around the relationship between the concept of τέχνη and that of *stochasticity*, but sometimes this comes about through an original notion, that of στοχασμός τεχνικός, in which an interesting and innovative relationship between the two terms is constructed (Boudon-Millot 2003).

Specifically, the main work concerning this notion is the *De locis affectis* – one of the most important works on diagnosis (Fortuna 2001) – and the context is that in which it is necessary to distinguish between practically certain diagnoses (e.g., an inflammation following an evident trauma) and diagnoses that, precisely because they are not directly referable to explicit traumatic episodes, are partly entrusted to conjecture, and more precisely to a particular type of conjecture:

We use what everyone usually calls technical conjecture (στοχασμός τεχνικός), which occupies an intermediary place between exact knowledge and total ignorance (VIII, 14,9-12).

Hence we no longer have τέχνη στοχαστική, i.e., conjectural art, but rather a στοχασμός τεχνικός – a conjecture made through the notions established by the τέχνη. This kind of conjecture does not have the exactness of the επιστήμη, but precisely because it is realized according to the *technical* rules it is scientific as well. The recourse

[16] *De sanitate tuenda* (VI, 360, 14-361,3), the previously mentioned *De crisibus* (IX, 712,12-15), *De compositione medicamentorum secundum locos* (XII, 452,3-7; XII, 546,3-9) or again *De curandi ratione per venae sectionem* (XI, 285,10-12; XI, 293,13-17) etc.

to it is necessary, for example – as we read in *De locis affectis* – when a diagnosis is more difficult to make:

I therefore sought, first of all, in which way it is necessary to diagnose diseases, and I found that some of these have a scientific diagnosis, while others fall under the so-called technical conjecture, and therefore they also are for the most part correct. This is in fact the capacity of the technical conjecture (VIII, 145).

In a sense it is possible to distinguish two types of diagnosis depending on the degree of conjecture that we need: one that sees the prevalence of the scientific element and one that, seeing the absence of certain signs, is dominated by the conjectural element (and this is decidedly the most frequent type of diagnosis, according to *De sanitate tuenda*, VI, 365). But not every conjecture is a good conjecture, because the τέχνη itself provides the procedures on which to build a good conjecture, a "technical" conjecture, indeed.[17] The possibility of distinguishing technical conjectures from non-technical conjectures allows Galen to consider conjecture an essential and totally scientific tool of the medical art, which can *for the most part* achieve successful results (Fortuna 2001: 295 and Chiaradonna 2008: 22). It is then clear that medicine is not always necessarily a conjectural discipline, and that only in some cases does rigor have to give way to hypothetical reasoning (Fortuna 2001). Medicine seems to move along two pathways, one strongly scientific (the το επιστημονικόν) and the more conjectural (the το στοχαστικόν), seen as a necessary and inevitable recourse in situations in which there is no scope for επιστήμη.

However, the question that cannot be avoided, and that proves central for Galen, concerns which characteristics the στοχασμός τεχνικός has. In Galen, who also aimed at a medicine that was *more geometrico* (Chiaradonna 2008), and characterized by infallibility, does the recourse to conjecture not invalidate the *technical* status of medicine? So is it a τέχνη στοχαστική, or a τέχνη that uses στοχασμός τεχνικός, a τέχνη on a lower level than others? Or does it have the same scientific dignity? It is evident that in the very use of the adjective τεχνικός alongside the term στοχασμός there is an intention on Galen's part to clarify his position of defence of the epistemological status of medicine, even in conditions of uncertainty. The recourse to τέχνη as a specification of conjecture leaves no doubts. Galen is convinced that it is possible to distinguish a technical conjecture from a non-technical one, and he furnishes the tools for it, particularly, in the final part of one of his most famous works, *De constitutione artis medicae ad Patrophilum liber*, specifically in the part devoted to prognosis (I, 289, 1-295, 15).

After complaining about the tendency, widespread in his time, for patients to entrust themselves entirely to physicians' prognoses without in the least reflecting on the possible truthfulness of them, Galen affirms the need to abide by some very precise rules in formulating a prognosis, that is to say in the formation of a στοχασμός τεχνικός:

[17] See the passage from *In Hippocratis de victu acutorum commenaria*: "Making technical conjectures (στοχάζεσθαι τεχνικῶς) is proper to that man who has learned the potentialities of everything that concerns the *techne*, has memorized them, and industriously practised them" (XV, 585, 7-10).

It is necessary, first of all, in the case of a prognosis, that there should be some facts that will certainty be verified in the future. Hence it is necessary to investigate how many and what the facts of this type are. The fact is that not everything that has to do with the sick man has a necessary existence (I, 289,18-290,5).

Among the elements that occur in an unnecessary way and nevertheless are involved in modifying the course of the illness, Galen cites, for example, noises made by neighbours or dogs barking, things that can prevent the patient from sleeping, but also may not have any effect on him or her. In cases like these, Galen says, conjecture is not technical, in the sense that it will only be possible to hypothesize something uncertain or, more exactly, not even probable. Only when the physician can start at least from a "fixed and certain form, like Archimedes lowering his lever, […] it is possible for him to establish a prognosis" (Boudon-Millot 2003: 295). But the discovery of a fixed point from which to start, or, more exactly, the conviction that what he starts from is sure knowledge that can thus give rise to a valid conjecture, is only possible through observations that are as meticulous as possible, and inquiries that are as detailed as possible (Ballester 1994). Or, as Galen says elsewhere, "anyone who wants to work out a prognosis precisely has to consider the nature of every sign precisely, so as to make the prognosis on the basis of the potentialities of each of them" (*De crisibus libri*, IX, 607,12-608,1). In other words, a direct approach of the physician to the patient is fundamental. It is necessary for the physician to act in concrete practice to be able to know, each time, whether the prognosis, and therefore the conjecture that is behind it, is valid. It is in these cases, therefore, that is to say when the rules of the art are followed, that στοχασμός can be defined τεχνικός.

Conclusions. Though with the limits inevitably connected to this position, Galen's perspective is interesting above all for the intention that informs it, namely to give the greatest possible scientific dignity to conjecture and, accordingly, to medicine as an emblematic example of τέχνη στοχαστική.

It can be concluded that even though the qualification of τέχνη στοχαστική attributed to medicine does not have an explicitly negative connotation in Galen's *Corpus*, it does occupy a subordinate position compared with the solidity furnished by the *more geometrico* method, and is almost a *necessary evil* that Galen introduces to justify that fallibility of medicine, which at the same time he himself tries in every way to minimize.

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