

# Method in Galen

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## ABSTRACT

I have discussed the four methods of ancient philosophy namely demonstration, division, resolution, and composition. But first, I glance at logic, which «discovers the principles of medical treatment». Method in pathology discovers «the affected parts of the body» and nosology, «the symptoms of diseases and their causes». In therapeutics, method «discovers drugs appropriate to specific diseases». The leader in all things pertaining to method is Hippocrates.

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Despite awareness of the importance of μέθοδος in Galen, «a thorough investigation of his methodology is still lacking» (1); as Jonathan Barnes points out, «a serious answer to the question of method would require long labours and a large volume» (2). The present paper does not aim to be comprehensive: many of Galen's statements on method are perfunctory or banal, and can safely be ignored. I plan to concentrate on the really crucial passages relating *inter alia* to the four methods of ancient philosophy, viz. demonstration, division, resolution and composition. Galen's main work on these subjects is lost: the *De demonstratione*. It has been partially reconstructed

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(1) TEMKIN, Owsei (1973). *Galenism; rise and decline of a medical philosophy*, Ithaca, Cornell Univ. Press, p. 28, who then provides a brief outline of Galen's views on method (pp. 28-30).

(2) BARNES, Jonathan (1991). Galen on logic and therapy. In: Kudlien, Fridolf; Durling, Richard (eds.). *Galen's Method of Healing. Proceedings of the 1982 Galen symposium*, Leiden, E.J. Brill, p. 80.

by Iwan von Müller (3) from references scattered throughout Galen's vast oeuvre. It included a discussion of scientific method (4).

First, we must emphasise the heuristic role of logic which discovers the principles of medical treatment [*Meth. med.* X p. 764.15-16 K.]. In pathology, too, there exists a method by using which one can discover the affected parts of the body [*Loc. aff.* VIII p. 120.10-11 K.]. This method discovers also the symptoms of diseases [*An in arter. sang. cont.* IV p. 728.17-18 K.] and their causes [*De symptom. caus.* VII p. 102.5-6 K.]. It is a guide to whole organs [*De morb. diff.* VI p. 879.18-880.1 K.]. It enables us to study the functions of the body (5), their use [*Meth. med.* X p. 398.8-10 K.] and their powers (6). We must judge each drug according to the methods often discussed by Galen [*De simpl. med. temp. et fac.* XI p. 641.8-9]. Drugs are compounded methodically (7), but no dogmatic physician has yet written in an articulate manner about the compounding of drugs [*De comp. med. per gen.* XIII p. 463.12-14 K.].

Galen has much to say on the so-called «demonstrative method» [*De const. art. med. ad Patrophil.* I p. 266.7 K.]. He refers to those not exercised in apodeictic methods, and thus not provided with a criterion of truth and error (8). One must adopt the premises supplied by the scientific method, and examine and judge them in the light of sense-perception [*De plac. Hipp. et Plat.* CMG V 4,1,2, p. 148.2-4]. It is the peculiar property of scientific method to employ scientific premises (λήμματα) [*ibidem*, p. 430.6-7]. Galen speaks in the same work of those who neither know what scientific method is, nor practise it [*ibidem*, p. 432.8-9, 28]. In *De usu partium* he refers to those uninitiated (βεβήλους) into scientific method (9). Elsewhere he

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- (3) MÜLLER, Iwan von (1895). Über Galens Werk von wissenschaftlichen Beweis. *Abh. d. Berliner Akad. d. Wiss.*, 20, 403-478.
- (4) *De plac. Hipp. et Plat.* CMG V, 4, 1, 2, p. 102.26; *De simpl. med. temp. et fac.* XI 632.4-8; *De sect.* Scr. Min. III, p. 33.13].
- (5) *De usu part.* I p. 12.20-23 Helmr.; cf. *ibid.* 457.9-10.
- (6) *De comp. med. per gen.* XIII p. 861.2-3 K.; cf. *Meth. med.* X p. 962.2-3 K.; *In Hipp. Epid.* VI comment. CMG V 10, 2, 2, p. 341.28-29, al.
- (7) *De comp. med. per gen.* XIII p. 29.7, cf. 334.11-14.
- (8) *De diff. resp.* VII 833.13-15 K.; cf. *De simpl. med. temp. et fac.* XII p. 3.11 K.
- (9) *De usu part.* I p. 196.10 Helmr.; cf. *De pecc. dign.* CMG V 4, 1, 1; 44.23-24; *De simpl. med. temp. et fac.* XI 465.3.

mentions the previous literature on the subject [*De pecc dign.* CMG V 4,1,1 p. 46.1-2]. He also notes that Hippocrates was the first physician to find the correct method(s) (10). Galen will adopt the methods he handed down to posterity (11). He speaks elsewhere of the «Hippocratic and true method» of curing hollow wounds [*Meth. med.* X p. 173.17-18 K.], and of those who welcome the «Hippocratic method» [*ibidem*, p. 309.17-18]. Hippocrates is our leader in all things pertaining to method [*ibidem*, p. 346.15-16]. Hippocrates and Plato's methods are to be imitated by Galen (12). Hippocrates handed down the elements of the method of the (medical) art (13), when he enuntiated the principle that «contraries cure contraries». Plato is to be admired not only for discussing method, albeit briefly, but also for exercising it [*De plac. Hipp. et Plat.* CMG V 4,1,2 p. 602.7-9]. Plato advised us to discover the nature of the soul according to the methods Hippocrates had used to investigate the body. A moot question was which Hippocratic book Plato had praised for its author's method [*In Hipp. de nat. hom. comment.* CMG V 9,1 19.5-6 cf. *ibidem*, p. 55.14-15]. Plato discussed method in his *Philebus* (15).

Second in importance after scientific demonstration or proof comes the method of division (ἡ της διαίρέσεως μέθοδος ἢ διαίρετική (16) μέθοδος) (17). Plato discussed the methods of division (18) and composition (ἡ συνθετική μέθοδος) [*De Plac. Hipp. et Plat.* CMG V 4,1,2, p. 568.2-3]. As Philipp De Lacy has written: «this method... tells us how to pass by division from the first and most general class through the intermediate differentiae to units that no longer admit of division» (19). As applied to medicine, divisive and

(10) *De morb. temp.* VII p. 438.16-17 K.; cf. *In Hipp. De victu acut. comment.* CMG V 9, 1 p. 122.6-7; *In Hipp. Epid. VI comment.* CMG V 10, 2, 2 p. 272.3-4.

(11) *De usu part. I*, 15.19-20 Helmr.; cf. *De san. tuenda* CMG V 4, 2 p. 137.11-12.

(12) *De plac. Hipp. et Plat.* CMG V 4, 1, 2, p. 336.31-32, cf. 584.20-21.

(13) *De Plac. Hipp. et Plat.* CMG V 4, 1, 2 p. 516.19].

(14) *Meth. med.* X p. 14.6-7 K.; cf. *In Hipp. de nat. hom. comment.* CMG V 9, 1 p. 54.9-10.

(15) *Meth. med.* X p. 26.4-5 K.; cf. *De plac. Hipp. et Plat.* CMG V 4, 1, 2, p. 582.31-32.

(16) *De morb. diff.* VI p. 847.5-6 K.

(17) *De diff. resp.* VII p. 895.5-6 K.; *Meth. med.* X p. 26.2-3 K.

(18) *De loc. aff.* VIII 736.1-5 K.; cf. *De Plac. Hipp. et Plat.* CMG V, 4, 1, 2, p. 566.10-12

(19) DE LACY, Phillip (1966). Plato and the Method of the Arts. In: Wallach, Luitpold (ed.) *In the Classical Tradition: Literary and Historical Studies in Honor of Harry Caplan*, Ithaca, Cornell Univ. Press, p. 123.

compository methods enable us to determine the multitude of differentiae in the pulse [*De dign. puls.* VIII pp. 601.2-4,10,12-13; 602.1 K.].

Galen has much to say on logical method. Without it neither Theophrastus nor Aristotle would have written anything [*An in arter. sang. cont.* IV p. 729.6-8 K.]. Ignorance is due to lack of exercise in logical method (20). The latter is an adjunct to experience [*De dign. puls.* VIII p. 857.12-15 K.]. Herophilus teaches experience rather than logical method (21). Logical method, as Galen's disciples know, contributes greatly to the discovery of drugs. He who discovers drugs according to logical method comes to the search of (the patient's) diathesis [*De comp. med. secundum loc.* XIII p. 128.14-15 K.]. If logic finds the compound medicines, experience tests their virtue [*De comp. med. per gen.* XIII p. 376.2-25 K.]. One cannot compound medicines without logical method [*ibidem*, p. 706.18-19 K.]. Logical methods are contrasted with irrational experiment [*Meth. med.* X p. 31.1 K.]. One must train oneself in logical method, in order to know how many diseases there are [*Quod opt. med. sit etiam phil.* Scr. Min. II p. 6.10-13.].

Galen says comparatively little about resolution (ἡ ἀναλυτικὴ μέθοδος) [*De dign. pecc.* CMG V 4,1,1 pp. 59.4-5; 55.14]. Analysis or resolution teaches us how to construct e.g. a *clepsydra* or sundial, and success or failure is clearly proved by results [*ibidem*, p. 59.25-26]. Some philosophers spoke of analysis, as an ascent through intermediates to the first criterion [*ibidem*, p. 54.10-11, 24-25]. Such a method is employed in geometry, arithmetic, and astronomical calculations [*ibidem*, p. 47.12-14].

Synthesis and analysis are combined at *De animi cuiuslibet peccatorum dignotione et curatione* [CMG V 4,1,1 p. 55.8, 15 ff.]. Galen says little too about composition, but probably discussed it in his now lost book *De Demonstratione*. There is a glancing reference to συνθετικὴ μέθοδος at *De placitis Hippocratis et Platonis* [CMG V 4,1,2 p. 568.2-3] (23).

(20) *De symp. caus.* VII p. 280.10-11 K.; *Meth. med.* X p. 916.7-8 K.; *De simpl. med. temp. et fac.* XII p. 5.1, al K.

(21) *De praes. ex puls.* IX p. 278.9-10 K.; cf. STADEN, Heinrich von (1989). *Herophilus. The Art of Medicine in Early Alexandria*, Cambridge, Cambridge U.P., p. 126.

(22) *De comp. med. secundum loc.* XII p. 894.9-895.1 K.; cf. *De comp. med. per gen.* XIII p. 594.14-15 K.

(23) Cf. *De plac. Hipp. et Plat.* CMG V 4, 1, 2 p. 102.26-28; MÜLLER, Iwan von (1895) *op.*

Therapeutic method is discussed repeatedly, especially, of course, in Galen's *Methodus medendi*. Testing the therapeutic method, the physician will discover the places affected together with the patient's *diathesis* [*De loc. aff.* VIII 64.1-3 K.]. Crucial is the rule that all unnatural states are cured by their contraries [*Meth. med.* X p.768.6-8 K.]. Besides the *Methodus medendi* there are frequent references to therapeutic method also in Galen's pharmacological treatises (24).

Finally, we should mention universal (καθόλου) methods (25). Such universal methods do not suffice for accurate knowledge [*Meth. med.* X p. 608.14-15 K.]. One should be trained in particulars [*ibidem*, p. 628.12-13, 16-17; 629.5-6]. The problem remained how to apply universal methods to particular cases. Constant practise is required (26). One must train throughout life. But one is secure in the knowledge that finding something methodically is better than relying on naked experience [*Meth. med.* X p. 183.10-11 K.]

«For rhetoricians, too, it is not enough to learn the method for dividing every case, but to the knowledge of method they add practise also. I would wish therefore that the man who claims to be scientific first tell me the method he employs for his scientific demonstrations and then show how he has been trained in it» [*De plac. Hipp. et Plat.* CMG V 4,1,2 p. 112.28-32].

I hope not to have duplicated unduly the fine study on logic and medicine by Professor Jonathan Barnes. My remarks are primarily meant to stimulate scientists to study ancient methodologies.

ὁδός (LSJ III.3) = *method, system*. ὁδός is frequently used in connection with heuristic, e.g. κοινὴ δ'ἀμφοτέροις ὁδος τῆς εὐρέσεως (28). Hippocrates

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*cit. fn.* 3). See also the brief reference to Plato at *De plac. Hipp. et Plat.* CMG V 4, 1, 2 p. 568.2-3.

(24) *E.g. Meth. med. ad Glaucon.* XI p. 358.15-16; 376.4; 572.7-9; *De comp. med. secundum loc.* XII p. 614.8-9.

(25) *De loc. aff.* VIII p. 216.9-10 K.; *Meth. med.* X p. 322.15 K.

(26) *Cf. De loc. aff.* VIII p. 123.11-18, *De const. art. med. ad Patrophil.* I p. 245.1-2, 5-6 K.

(27) *Op. cit. fn.* 2, pp. 50-102.

(28) *De san. tuenda*, CMG V 4, 2, p. 3.9; *cf. De plac. Hipp. et Plat.* CMG V 4, 1, 2, p. 182.20-22; *De diff. resp.* VII pp. 909.2; 912.1-2 K.; *De loc. aff.* VIII pp. 8.3-4; 146.8-9; 147.11-13; 148.3-4 K.; *De dign. puls.* p. 786.10-11 K.; *De praes. ex puls.* IX p. 223.3-5 K.; *Meth. med.* X p. 1010.16 K.; *Meth. med. ad Glaucon.* XI p. 159.9-10 K.; *In Hipp. De victu acut.*

was the first to use the «right way» (29) Galen mentions «the logical way» ὁδος = μέθοδος throughout (30).

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- comment.* CMG V 9, 1 p. 159.9; *In Hipp. Progn. comment.* CMG V 9, 2, p. 343.27-28; *In Hipp. Epid. III comment.* CMG V 10, 1, p. 19.7-8; *De consuet.* Scr.min. II p, 116.11-12, *al.*
- (29) *Meth. med.* X pp. 117.17-18; 118.3-4; 632.4, *al K.*
- (30) *De loc. aff.* VIII p. 158.7-8 and *De comp. med. per gen.* XIII p. 888.5. Galen speaks of this way of Hippocrates [*Meth. med.* p. 172.2-3].