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The Licensing Function of Galenic Anatomical Procedures, Text and Practice

Text 1. Galen, *Anatomical Procedures* (AA II 223-4),

But if you grow confident through reading only, without being accustomed to the sight of the bones of apes, you will not actually take in nor will you retain the memory of the skeleton of a man if you see it unexpectedly. For, the recollection of perceptible phenomena requires frequent association. And for this reason also we recognize those very people whom we often encounter, but we pass by someone seen once or twice after a while has passed, neither recognizing him at all nor even recalling what he looked like before... For it is necessary to see each of the parts in advance, with no rush, in order to recognize what is seen suddenly, preferably in human subjects but if not, at least in animal subjects fairly similar to a human being.¹

I. Epideixis and Anatomical Demonstration

Text 2. Galen, *Anatomical Procedures* (AA II 669),

It is possible for you to do the same thing even if at some point, on your own, you examine the sort of thing that happens to the animal after the nerves are interrupted in this way [i.e., by ligation]. But for making this demonstration (ἐπιδεικνυμένῳ), it is better to prepare a thread placed under all these nerves without having tied [them]. For, in this way, when the animal is struck it lets out a howl, then after tightly binding the nerves with the threads it suddenly becomes voiceless.

Terms

Epideixis (ἐπίδειξις) is a generic demonstration. When it is distinguished from *apodeixis*, it picks out performative elements of the demonstration.

Apodeixis (ἀπόδειξις) is, for our purposes, a technical term. A demonstration is an *apodeixis* when its conclusions follows logically (and deductively) from more basic truths.

Text 3. Galen, *Anatomical Procedures* (AA II 669-70),

[The procedure] takes the audience's breath away, as it seems amazing [to them] that phonation is destroyed when tiny nerves in the midriff are ligated. Make sure that in these sorts of demonstrations (ἐπιδείξεις) your assistants are numerous in order that the loops may be set around all the nerves quickly. If you don't want to release them again, constrict [the nerves] however you like. But, if you also want to release [them] all at once to show the animal crying out again, so the audience is even more amazed, slide rings on the loops and constrict them gingerly... And for the animal to cry out suddenly constrict it just enough, as the nerves are crushed when they are constricted too tightly by the loops surrounding them...

Text 4. Galen, *Anatomical Procedures* (AA II 690),

And you have all seen me demonstrate all of these sorts of things on pigs, in particular, often in private and in public (ιδίᾳ τε καὶ δημοσίᾳ), since an ape is no advantage at all in these sorts of anatomical demonstrations and the spectacle is odious.

¹ All translations are my own unless otherwise mentioned. The Greek text of *Anatomical Procedures* is Garofalo (1991) *Procedimenti Anatomici* (Milan).

Text 5. Galen, *Anatomical Procedures* (AA IX.11.18).

I say, then, that for this purpose you must procure either a pig or a goat, in order to combine two requirements. In the first place, you avoid seeing the displeasing expression of the ape when it is being vivisected. The other reason is that the animal on which the dissection takes place should cry out with a really loud voice, a thing one does not find with apes (trans. Duckworth).

II. Medical Debate as a Public Agon

Text 6. Galen, *On whether Blood is Naturally Contained in the Arteries* (Art.Sang. IV 717).

Although I had supposed that they [sc. his opponents] would offer no rebuttal to these [refutations] and that they would come to understand the things that they had formerly misunderstood, they show no willingness to do so; rather, just as in wrestling rank amateurs cling to the neck[s] of those who have thrown them and do not let them stand up, since sometimes they don't realize that their back[s] are lying on the ground, likewise these [opponents], as they are ignorant of the falls in arguments, don't allow [me] to be free while they pull out some trick or another, always new, ducking and dodging until anyone would leave, disgusted and exasperated at their shamelessness compounded with their ignorance.

Text 7. Galen, *On the Power of Cleansing Drugs* (Purg.Med.Fac. XI 332).

At once he seemed to his fellow Bacchantes as the kind of man who spoke well and they began applauding him while he made his exit, leaving me behind, clearly knowing, I figure, that he was about to be refuted. **On the following day I gave a book to his entourage, in which was a refutation of the things he had so unexpectedly claimed in this way. And that man was never again as convincing to them since he was at a loss as to how to answer its challenges, which I wrote in the book as follows, "Yesterday you ducked our debate, making like a competitor snatching at the crown and fleeing before even competing, but today you won't escape my refutation; seeing as this little book, which has fallen into the hands of your entourage, will follow you. For its argument is something no less for them than for you..."**

Text 8. Galen, *On My Own Books* (Lib.Prop. XIX 14).

And once while I was speaking on the works of the ancient physicians in public, the [treatise] of Erasistratus *On Bringing Up Blood* was proposed (προβληθέντος) to me and a stylus was placed in it according to custom; and as it pointed to that part of the book in which he deprecates venesection, I said more against him [i.e. Erasistratus] in order that I might upset that self-styled Erasistratean Martialus.

Text 9. Galen, *On Recognizing the Best Physician* (Opt.Med.Cogn. 9 4-7 = CMG Suppl.Or.IV, 103,10-105,19).

Once I attended a public gathering where men had met to test the knowledge of physicians. I performed many anatomical demonstrations before the spectators: I made an incision in the abdomen of an ape and exposed its intestines: then I called upon the physicians who were present to replace them back (in position) and to make the necessary abdominal sutures- but none of them dared to do this. We ourselves then treated the ape displaying our skill, manual training, and dexterity. Furthermore we deliberately severed many large veins thus allowing the blood to run freely and called upon the Elders of the physicians to provide treatment but they had nothing to offer. We then provided treatment, making it clear to the intellectuals who were present that (physicians) who possess skills like mine should be in charge of the wounded. That man was delighted when he put me in charge of the wounded- and was the first to entrust me with their care (trans. Iskandar).

Text 10. Galen, *Anatomical Procedures* (AA II 226),

... it is necessary that when performing a public display (ἐπιδεικνόντα) you prepare to expose and to show the part, which has been put before you (τὸ προβληθὲν), as quickly as possible in a variety of ways, in this and some other presentation, as I will teach you.

III. Phonation and its Significance

Text 11. Galen, *On Prognosis* (*Praen.* XIV 626),

I will remind you of the doctors and philosophers who were present at my debate (ἀγῶνα) against the Stoics and Peripatetics and some others along with them, first going over how it began in detail so that if you want to distribute this text to anyone worthy of sharing in these types of arguments, he may know the progression of the things that happened and [so that] you may not spend all of your free time explaining the number of things done by me through the works of my medical practice, both the dissections and the arguments pursuant to them, when I was refuting invidious doctors and philosophers.

Text 12. Galen, *On Prognosis* (*Praen.* XIV 628-9),

When I heard these things [i.e. Alexander's question on the reliability of the senses] I departed leaving them behind with only a word, namely that I was fooled when I supposed that I hadn't come into the presence of some podunk Pyrrhonists (ἀγροικοπυρρωνεῖους). Otherwise, I wouldn't have come at all.

Text 13. Galen, *On Prognosis* (*Praen.* XIV 629),

And after I left, the others reprimanded Alexander; and Adrian and Demetrios, invariably ill-disposed toward his excessive love of argument (τὴν φιλονεικίαν), had a credible pretext to rebuke him vehemently. And when this was made known to all of the scholars, so many as were in the city of Rome at the time, and to Severus, Paulus, and Barbarus, they all rebuked him vehemently and demanded that the anatomical demonstrations take place with them present, once they had gathered together everyone else however many were well known in medicine and philosophy.

IV. The Ureter/Bladder Connection and its Significance

Text 14. Galen, *On the Natural Faculties* (*Nat.Fac.* II 34-5),

[T]hus their sectarian vain-glory is an evil that is difficult to rub off, hard to wash out in these men especially, and more difficult to heal than any lesion. At any rate, one of the sophists of our day, trained sufficiently in eristic arguments and in other arguments too and clever at speaking, if anyone ever was, got into words with me about these matters... "For," he said, "on any day it is clear to see that any bladders, if one were to fill them up with liquid or air, then after tying off the neck squeeze them on every side, will in no way let anything out but keep everything completely inside themselves. And if in fact there were any substantive and perceptible pathways passing into them from the kidneys, so the liquid would be wholly expelled through those [pathways] when the [bladders] are squeezed just as it passed into them." Saying these things and others of this sort, rounding them off abruptly with an unflinching and clear voice, he departed...

1. Galen, AA II 223-4, εἰ δ' ἀναγνώσει μόνη θαρρόησεις, ἄνευ τοῦ προεθισθῆναι τῆ θέα τῶν πιθηκείων ὀστέων, οὐκ ἂν οὔτε κατανοήσῃς ἀκριβῶς ἀνθρώπου σκελετὸν ἐξαίφνης ἰδὼν, οὔτε μνημονεύσῃς. ἢ γὰρ τοι τῶν αἰσθητῶν πραγμάτων μνήμη συνεχοῦς ὁμιλίας δεῖται· καὶ διὰ τοῦτο καὶ αὐτῶν τῶν ἀνθρώπων ἐκείνους τάχιστα γνωρίζομεν, οἷς πολλάκις συνεγενόμεθα, τὸν δ' ἅπαξ ἢ δις ὀφθέντα διὰ χρόνου πλείονος θεασάμενοι πάλιν παρερχόμεθα, μήτε γνωρίζοντες ὅλως, μήτε ἀναμνησκόμενοι τῆς ἔμπροσθεν θέας... ὁράσθαι γὰρ χρὴ πρότερον ἐπὶ πολλῆς σχολῆς ἕκαστον τῶν μοριῶν, ἴν' ἐξαίφνης ὀφθῆν γνωρισθῆ, μάλιστα μὲν ἐπ' ἀνθρώπων αὐτῶν· εἰ δὲ μὴ, ἀλλ' ἐπὶ ζῶων παραπλησίων ἀνθρώπων.

2. Galen, AA II 669, ταῦτὸ μὲν οὖν σοι πράττειν ἔξεστι, κἄν μόνος ἐπὶ σαυτοῦ ποτ' ἐξετάξης, ὁποῖόν τι πάσχει τὸ ζῶον ἐπὶ τοῖς νεύροις οὕτω διαληφθεῖσιν. ἐπιδεικνυμένῳ δὲ βέλτιόν ἐστιν αὐτῷ παρεσκευάσθαι τοῖς νεύροις ἅπασι λίνον ὑποβεβλημένον ἄνευ τοῦ δεδέσθαι· κέκραγε γὰρ οὕτω παιόμενον, εἴτ' ἐξαίφνης ἄφωνον γινόμενον ἐπὶ τῷ σφιγχθῆναι τοῖς λίνοις...

3. Galen, AA II 669-70, ...τοὺς θεατὰς ἐκπλήττει· θαυμαστὸν γὰρ εἶναι δοκεῖ, νεύρων μικρῶν κατὰ τὸ μετάφρενον βροχισθέντων, ἀπόλλυσθαι τὴν φωνήν. ἔστωσαν δὲ πλείονες οἱ ὑπηρετούμενοί σοι κατὰ τὰς τοιαύτας ἐπιδείξεις, ἵνα ταχέως ἅπασι τοῖς νεύροις οἱ βρόχοι περιβληθῶσιν. ἐὰν μὲν οὖν μηκέτι λύειν ἐθέλῃς αὐτούς, ὅπως ἂν ἦ σοι φίλον, οὕτως σφίγγε. βουλόμενος δὲ εὐθέως λύσαι, καὶ δείξαι φωνοῦν αὐθις τὸ ζῶον, (οὕτω γὰρ μᾶλλον οἱ θεαταὶ θαυμάζουσι.) ἀγκύλας τε κατὰ τοὺς βρόχους ἐπίβαλλε καὶ μετρίως σφίγγε... πρὸς δὲ τὸ φωνῆσαι τὸ ζῶον αὐτίκα τὸ μετρίως ἐσφίγγθαι, τὰ γὰρ σφοδρότερον ὑπὸ τῶν περιβληθέντων βρόχων σφιγθέντα νεύρα...

4. Galen, AA II 690, ἐφ' ὧν δὲ μάλιστα πάντα τὰ τοιαῦτα δεικνύντα με ἐθεάσασθε πολλάκις ἰδίᾳ τε καὶ δημοσίᾳ, διὰ τὸ μήτε πλέον ἔχειν τι πίθηκον ἐν ταῖς τοιαύταις ἀνατομαῖς, εἰδεχθῆς τ' εἶναι τὸ θέαμα.

5. Galen, Anatomical Procedures (AA IX.11.18)²

6. Galen, Art.Sang. IV 717, Πρὸς ταῦτ' ἐγὼ μὲν φόβην αὐτούς μήτ' ἀντιλέξιν μηδὲν μαθήσεσθαι τε τὰ κακῶς ἐγνωσμένα. οὐ μὴν ἐθέλουσί γε, ἀλλ' ὥσπερ οἱ παντελῶς ἰδιῶται παλαισμάτων οὐ γνωρίζοντες κείμενον ἐπὶ γῆς ἐνίοτε τὸν νῶτον αὐτῶν ἔχονται τραχήλου τῶν καταβαλόντων οὐδ' ἐπιτρέποντες ἀναστῆναι, τὸν αὐτὸν τρόπον καὶ οὗτοι ἀμαθεῖς ὄντες τῶν ἐν τοῖς λόγοις πτωμάτων οὐκ ἐπιτρέπουσιν ἀπαλλάττεσθαι καινὰς τινὰς αἰεὶ στροφὰς στρεφόμενοι καὶ παντοίως λυγιζόμενοι μέχρι τοῦ μισήσαντά τινα τὴν τ' ἀναισχυντίαν ἅμα καὶ τὴν ἀμαθίαν αὐτῶν ἀποδυσπετήσαντα χωρισθῆναι.

7. Galen, Purg.Med.Fac. XI 332, παραχρήμα μὲν οὖν ἔδοξε τοῖς θιασώταις ὁ τοιοῦτος εὐὶ λέγειν καὶ πάντες ἐπεβῶν αὐτῷ καὶ δρόμῳ πολλῷ καταλιπὼν ἡμᾶς ἀπηλλάττετο γινώσκων, οἶμαι, βεβαίως, ὅτι μένων ἐξελεγχθήσεται. **δοθέντος μέντοι κατὰ τὴν ὑστεραίαν ὑφ' ἡμῶν τοῖς χορευταῖς αὐτοῦ βιβλίου τινός, ἐν ᾧ τῶν οὕτως ἐξαίφνης ἀποτετολμημένων ἦν ἔλεγχος, οὐκέτ' οὐδέποτ' αὐτοῖς ἐκείνος ἔθ' ὁμοίως ἦν πιθανὸς ἀπορῶν διαλύσασθαι τὰ προβεβλημένα. ταυτὶ γὰρ ἐνεγέγραπτο τῷ βιβλίῳ· χθὲς μὲν ἀπέδρας τὸν λόγον ὁμοίον τι ποιήσας ἀγωνιστῆ τὸν στέφανον ἀρπάσαντι καὶ φυγόντι πρὶν ἀγωνίσασθαι, τήμερον δ' οὐκ ἐκφεύξῃ τὸν ἔλεγχον· ἀκολουθήσει γὰρ σοι τουτὶ τὸ βιβλίδιον εἰς τὰς χεῖρας ἐμπροσθὲν τῶν ἀμφὶ σε χορευτῶν· οὐδὲ γὰρ ἥττόν τι πρὸς ἐκείνους ὁ λόγος ἐστὶν ἢ πρὸς σε...**

² The later books of *Anatomical Procedures* survive only in Arabic. I include the reference but do not include the Arabic for this text and the others on the handout.

8. Galen, *Lib.Prop. XIX 14*, καὶ λέγων γέ ποτ' εἰς τὰ τῶν ἰατρῶν τῶν παλαιῶν βιβλία δημοσίᾳ προβληθέντος μοι τοῦ περὶ αἵματος ἀναγωγῆς Ἐρασιστράτου καὶ γραφείου καταπαγέντος εἰς αὐτὸ κατὰ τὸ ἔθος, εἶτα δειχθέντος ἐπ' ἐκείνο τὸ μέρος τοῦ βιβλίου, καθ' ὃ τὴν φλεβοτομίαν παραιτεῖται, πλείω πρὸς αὐτὸν εἶπον, ὅπως λυπήσασαι τὸν Μαρτιάλιον Ἐρασιστράτειον εἶναι προσποιούμενον.

9. Galen, *On Recognizing the Best Physician (Opt.Med.Cogn. 9 4-7 = CMG Suppl.Or.IV, 103,10-105,19)*

10. Galen, *AA II 226*, ἄλλως δ' ἐπιδεικνύντα παρασκευάσαι χρὴ τὸ προβληθὲν ὑπ' αὐτοῦ μόριον ὅτι τάχιστα γυμνώσαι τε καὶ δεῖξαι πολυειδέστερον, ἄλλοτε κατ' ἄλλην ἐπιβολὴν, ὡς διδάξω.

11. Galen, *Praen. XIV 626*, τῶν δὲ κατὰ τὸν πρὸς τοὺς Στωϊκοὺς τε καὶ Περιπατητικοὺς ἀγῶνα παρόντων καὶ ἄλλων τινῶν ἅμ' αὐτοῖς ἰατρῶν τε καὶ φιλοσόφων, ἀναμνήσω σε πρότερον ὅθεν ἤρξατο διελθὼν ἴν' εἰ καὶ τινῶν τῶν ἀξίων κοινωνίας τοιούτων λόγων ἐθελήσῃς μεταδοῦναι τουτὶ τὸ γράμμα, τὴν ἀκολουθίαν ἅπασαν ἴδιοι τῶν γενομένων· καὶ μὴ διὰ παντὸς ἀσχολίαν ἔχῃς αὐτὸς διηγούμενος ὅσα διὰ τε τῶν ἔργων τῆς ἰατρικῆς τέχνης ἀνατομῶν τε καὶ τῶν ἐπ' αὐταῖς λόγων ἐπράχθη μοι τοὺς φθονεροὺς ἰατροὺς τε καὶ φιλοσόφους ἐλέγχοντι.

12. Galen, *Praen. XIV 628-9*, ἀκούσας δ' ἐγὼ ταῦτα, καταλιπὼν αὐτοὺς ἐχωρίσθην ἐν μόνον φθηγξάμενος, ὡς ἐσφάλην οἰόμενος οὐκ εἰς τοὺς ἀγροικοπυ<ρ>ων<ε>ίους ἤκειν, ἢ οὐκ ἂν ἀφικνεῖσθαι.

13. Galen, *Praen. XIV 629*, ἐμοῦ δὲ χωρισθέντος οἱ τ' ἄλλοι τοῦ Ἀλεξάνδρου κατέγνωσαν ὅ τ' Ἀδριανὸς καὶ ὁ Δημήτριος, ἐχθρῶς αἰεὶ διακείμενοι πρὸς τὴν φιλονεικίαν αὐτοῦ, πιθανὴν ἀφορμὴν εἶχον ἐπιτιμῆσαι σφοδρῶς. ἐπεὶ δὲ καὶ τοῖς φιλολόγοις ἅπασιν, ὅσοι κατὰ τὴν τῶν Ῥωμαίων πόλιν ἦσαν, ἐγνώσθη τοῦτο καὶ τῷ Σεβήρῳ καὶ τῷ Παύλῳ καὶ τῷ Βαρβάρῳ, πάντες οὖν σφοδρῶς ἐπετίμησαν αὐτῷ καὶ παρόντων ἑαυτῶν ἠξίωσαν γενέσθαι τὰς ἀνατομὰς, ἀθροίσαντες εἰς <τ>αὐτὸ τοὺς ἄλλους ἅπαντας, ὅσοι κατὰ τὴν ἰατρικὴν τε καὶ φιλοσοφίαν ἦσαν ἐνδοξοί.

14. Galen, *Nat.Fac. II 34-5*, ...οὕτως ἄρα δυσασπόμενον τι κακὸν ἐστὶν ἢ περὶ τὰς αἰρέσεις φιλοτιμία καὶ δυσέκνιπτον ἐν τοῖς μάλιστα καὶ ψώρας ἀπάσης δυσιατότερον. τῶν γοῦν καθ' ἡμᾶς τις σοφιστῶν τά τ' ἄλλα καὶ περὶ τοὺς ἐριστικὸς λόγους ἰκανῶς συγκεκρισθεὶς καὶ δεινὸς εἰπεῖν, εἶπερ τις ἄλλος, ἀφικόμενος ἐμοί ποθ' ὑπὲρ τούτων εἰς λόγους... ἐναργῶς γὰρ ὁσημέραι θεωρεῖσθαι τὰς κύστες ἀπάσας, εἴ τις αὐτὰς ἐμπλήσειεν ὕδατος ἢ ἀέρος, εἶτα δήσας τὸν τράχηλον πέξοι πανταχόθεν, οὐδαμόθεν μεθίεισας οὐδέν, ἀλλ' ἀκριβῶς ἅπαν ἐντὸς ἑαυτῶν στεγούσας. καίτοι γ' εἶπερ ἦσαν τινες ἐκ τῶν νεφρῶν εἰς αὐτὰς ἤκοντες αἰσθητοὶ καὶ μεγάλοι πόροι, πάντως ἂν, ἔφη, δι' ἐκείνων, ὥσπερ εἰσῆι τὸ ὑγρὸν εἰς αὐτάς, οὕτω καὶ θλιβόντων ἐξεκρίνετο. ταῦτα καὶ τὰ τοιαῦτ' εἰπὼν ἐξαίφνης ἀπαιίστω καὶ σαφεῖ τῷ στόματι τελευτῶν ἀναπηδήσας ἀπῆει...

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