Ancient doctors' literacies and the digital edition of papyri of medical content*

Nicola Reggiani

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In her seminal article about "Doctors' literacy and papyri of medical content" (2010), Ann E. Hanson showed how the multifarious evidence provided by the Greek papyri from Egypt bears witness to a widespread medical literacy in the Graeco-Roman world. This term—"medical literacy"—is used to encompass a wide range of personalities, comprising both specialized physicians and learned laymen with specific interests in medicine and related topics, and points to the ability of reading, understanding and producing a written text dealing with medical subjects. In this contribution, I wish to develop her overview, showing that ancient medical writings on papyrus are in fact characterized by multiple 'literacies' that can be better understood through the categories of transtextuality and better represented (and studied) in their complexity with the digital infrastructure of multitext.

First of all, we can highlight at least three categories of' 'authors' of medicine-related texts, that is possessing a certain degree of 'medical literacy': (a) *academically trained physicians*, endowed with wide cultural horizons and authors of the main reference works in medical literature (Galen above all, then e.g. the leaders of the ancient medical schools, authors of treatises on their own); (b) *practicing physicians*, educated both from the formers' treatises (and the derived handbooks) and from their own experience. They do not author literary works but nonetheless often prove very skilful and well-trained, such as the two doctors of P.Mert. I 12 (AD 58, August 29th), who maintain a written correspondence discussing pharmacological issues,[1] and the Egyptian *iatroklystes* of P.Lond. I 43 = UPZ I 148 (II century BC), who "employed in his practice a Greek interpreter, a man familiar with the Egyptian script, presumably to communicate with indigenous assistants and Greek-speaking patients alike"[2] (c) *learned laymen*, not scholarly trained but possessing some degree of medical knowledge, such as the Psenpaapis of O.Claud. II 220 (ca. AD 137–145), who asks his brother Gemellus to go to the doctor to get some saffron and to send it to him, because he did not receive the medicinal *kollyria*.[3] It seems apparent that Psenpaapis—clearly an Egyptian character—is willing to reproduce the eye-salve by himself.[4]

This overall scenery of medical literacy can be further declined from the broader sociological point of view, where the (plural) concept of 'literacies' has been recently developed to refer to "text-oriented events embedded in particular sociocultural contexts,"[5] stressing for example the *use* of reading/writing abilities, as well as communication strategies. This fits particularly well the situation of 'medical literacy', since the relevant papyrological sources—of the most diverse typologies and formats, spreading from literary treatises to practical handbooks, from didactic manuals to collections of recipes, from official reports to private letters mentioning medical topics, chronologically ranging from the III century BC to the VII AD[6] —show a complex degree of textuality that can be described through the concept of transtextuality as investigated by

Gérard Genette since the Eighties. Transtextuality defines all the various possible relationships among texts ("all that sets the text in relationship, whether obvious or concealed, with other texts"[7]) and encompasses five subcategories that are sketched as follows:[8]

- *Intertextuality* is the relation between parallel text, in the form e.g. of quotation or allusion.
- *Paratextuality* is the relation between one text and what surrounds the main body of the text (e.g. titles, headings, and—we may add—graphical devices).
- *Metatextuality* is the explicit or implicit critical commentary of one text on another text.
- *Hypotextuality/hypertextuality* is the relation between a text and a preceding hypotext that is transformed, modified, elaborated or extended.
- *Architextuality* is the designation of a text as a part of a genre or genres.

Focusing now on the cultural products of ancient 'medical literacy', while bearing in mind the preceding scheme, we can outline the following main stages of *use* of reading/writing abilities and communications strategies, i.e. what is sociologically defined as 'literacies':

- *Written scholarship*, producing 'literary' treatises. The importance of the written text for ancient medical knowledge is stressed as earlier as in the Hippocratic corpus: "I consider the ability to evaluate correctly what has been written as an important part of the art," says the author of the *Epidemics*, stressing however its instrumentality: "He who has knowledge of it and knows how to use it will not commit, in my opinion, serious errors in the professional practice" (*Epid*. III 16 K. = III 10, 7 ff. L.).[9] Papyrus witnesses of written treatises spread throughout the Hellenistic and Roman times, attesting to both known and unknown ancient medical scholarship.[10]
- *Written teaching*, performed by compilers producing manuals and handbooks, borrowing from elaborate treatises or other technical books (see below) and influencing, in turn, the following literature.[11]
- *Oral teaching*, producing *hypomnemata* (notes) later expanded in book format. In the introduction to the treatise *On his own books*, Galen himself explains how in the context of the oral lesson one used to take written notes, thence moving to the publication of memoranda that would become the *hypomnemata* of the lessons heard.[12] Orality also influenced the proper treatises.[13]
- *Personal practice*, producing annotations of various types. For instance *Iatrika grammateia*, "medical writings" on tablets (*pinakia*),[14] refer to the use of writing down the doctors' personal annotations or clinical files in order to keep medical archives.[15] Some Hippocratic treatises (e.g. the *Epidemics*) exhibit a listthirddt fig1 here]]earbook 1989–s@mparison here?vious chapters do not. Remove?like format, in a raw syntax, being proper catalogues of diseases, symptoms, therapies, sometimes prognostics and aetiology, apparently derived from the physicians' personal experience (i.e. from the clinical tablets or similar annotations) and serving as helpful guidelines for the future too.[16] The doctors' personal practice was also at the origin of integrations and additions to existing treatises[17] and to pharmacological texts (see below and Bonati 2016, 65–66 for the latter instance).
- *Textual transmission* (the actual copying of physical books), producing interferences and variants. The ancient practice of collating several copies (*antigrapha*) of medical texts is attested above all by Galen, who noted several degrees of manuscript divergences, ranging from small linguistic variations to major discrepancies in the content, e.g. in the ingredients and quantities,[18] but we know of other cases in which the ancient readers produced "personal" copies that became, by means of reformulations and abbreviations, new recensions of the same text.[19] The fragmentary state of the papyri containing medical texts is an exacerbated form of interference where physical damages and linguistic variations condition the state of the original text.[20]

Each one of the abovementioned stages is deeply interrelated with the others. One main transtextual connection is given by intertextuality, i.e. direct or indirect quotations: for example, most of the late antique medical literature is represented by compediasts (Oribasius, Aetius, Paulus of Aegina) who took and interwove excerpts from the earlier authors in order to create composite texts, with the purpose of assembling the best from previous writings.[21] Yet there are paratextual, metatextual, and hypotextual devices that characterise ancient medical writings as technical texts in flux and that clarify the concept of "ancient medical literacies." The older treatises are annotated, commented, collated often against annotated

and commented copies,[22] transcribed with additions, corrections, and updates; the collections of personal notes on clinical cases, therapies or remedies are constantly revised on the ground of practice; prescriptions are transcribed, gathered in the *receptaria* and passed down; handbooks of different typologies are used to teach again, and so on, keeping written trace of every stage of transmission and use, even of the oral one. Moreover, each transtextual link is deeply rooted in the very meaning of the text itself, which means that the medical texts cannot be understood and appreciated without considering this complex network of connections.[23] Let us take Ann Hanson's *specimina* (being both as widespread and basic as technical enough to be perfectly representatives of the ancient 'medical literacies') and try to consider them from the perspective of Genette's textual theory.

The first medical text type on papyrus that Ann Hanson deal with is the *questionnaire or catechism* (*erotapokrisis*), a sort of technical school-text or reference handbook providing medical notions in a dialogue format, where a question about theoretical definitions or practical procedures is followed by a more or less detailed answer.[24] Such a format is clearly derived from and devoted to some sort of oral teaching, and this explains why the scribes took care of highlighting the articulation of the text by means of a wide set of paratextual devices affecting the overall layout: the questions are very often indented in *eisthesis*, and further marked with *paragraphoi*, line fillers or some other lectional marks that introduce the answers as well. In this way, the orality of the discipline was wisely adapted to the written medium.[25] Yet there exists a considerable similarity with the literary genre of the "definitions," connected with the research and teaching practice of Hellenic medicine and attested in the Greek Pseudo-Galenian treatise *Horoi* or *Definitiones Medicae* (XIX 346–462 Kühn) and in the Latin Pseudo-Soranian *Quaestiones medicinales.* [26] In fact, David Leith has recently distinguished two types of question-and-answer medical texts: the proper catechisms, being introductory manuals for the student of medicine, and wider treatises on remedies.[27] The suggestion comes from the similarities detected between *erotapokriseis* on papyrus like P.Turner 14 and PSI inv.3783 and the excerpts from the physicians Herodotus and Antyllus to be found in Oribasius' *Collectiones Medicae* [28] (but one may recall the similarities between the surgical catechism P.Gen. inv.111 and the treatise known as *Cirurgia Heliodori* [29] as well). These are architextual, intertextual and hypotextual relations that contribute to shape the essence of the texts, and derive from the complex set of "literacies" possessed by their ancient compilers.

The second case presented by Ann Hanson is that of *pharmacological and therapeutic recipes.* [30] The oral origins of medical prescriptions are clear from their strong formulaic structure[31] as well as from their first transcription on supports traditionally connected to the temporary writing of oral discourses, tablets and papyrus/parchment slips.[32] The progressive integration of these medical 'fragments'[33] into proper books goes together with interesting transtextual issues. In his pharmacological treatise *De compositione medicamentorum secundum locos* 1,1 (XII 422,13–426,8 K.), Galen reports that a recipe he just copied into his own book was discovered by a friend a colleague of his, Claudianus, in a leather notebook once belonging to another doctor, now deceased: the learned author does not rely only on his own knowledge, but integrates it with references and additions, and promises updates.[34] The notebook discovered by Claudianus is apparently one of the first stages of written transcription of the oral prescriptions: it recalls some significant papyrological examples, such as PSI VI 718 (fourth century AD), a parchment sheet containing part of a list of recipes, the original 'fragmentarity' of which is preserved and even stressed by the paratextual use of lectional marks—*paragraphoi*, *coronides*, line fillers that keep the prescriptions separated from each other, as autonomous textual units. A more complex case is provided by the so-called *Michigan Medical Codex* (P.Mich. XVII 758, fourth century AD), a *receptarium* commissioned by a practicing physician.[35]

> First he collated the text of his newly-made copy against an exemplar, making corrections in addition to the items already corrected by the scribe, and then he went on to more than double the contents of the codex by filling the margins with additional recipes for pills to medicate bodily ills and plasters to medicate wounds and lesions of every kind. Naming a therapeutic recipe after the physician or pharmacologist from whose works it had been taken, or by whom it was popularized, became increasingly

> common in Hellenistic and Roman times, and the codex cited recipes attributed to a number of medical authors […]. The recipes in the codex frequently show correspondences with recipes for plasters in the collections of Galen, Oribasius, Aëtius, or Paul of Aegina that have come down in the manuscript traditions, highlighting the striking degree of continuity among ingredients and their relative proportions from hand-written copy to hand-written copy over many centuries.[36]

Intertextuality, hypotextuality and similar connections merge together, creating a very complex and unique clockwork: “although individual recipes in a collection on papyrus often resemble items in the known authors, each extensive collection on papyrus has thus far proved to be a unique assemblage.”[37] The paratextual function of critical and lectional marks stresses the “composite” structure of the text, acting as a bridge between its oral roots and its later outcomes.[38]

The inadequacy of the traditional philological/stemmatological model to represent in full the textual features of these complex and fluid technical writings has already been pointed out by Ann Hanson herself in an earlier work.[39] This corresponds to the inadequacy of the traditional ‘literacy’ model to describe and understand the textual facts. The “accretive model of composition,” advanced by her to provide a suitable description of the phenomenon, seems to me perfectly pertinent to the plurality or network of ‘literacies’ revealed by the texts in question, mostly dependent on the original oral aspect of the discipline and on the primary role of actual practice.

The new digital tools allow us to reconsider this point of view and to develop new infrastructures in order to enhance the digital edition of such complex ancient sources, so that the final product is not a fixed philological layout simply reproducing the paper editions, but something closer to the original sense of the text and to its network of literacies. The current database of papyrological texts (*Papyrological Navigator*: http://papyri.info (http://papyri.info)) is devoted to documentary papyri and, though being an advanced collection of hypertexts integrated with catalogues of metadata, is basically a digital *avatar* of a philological paper edition. Not by chance the sophisticated markup language that is used to encode the papyrus texts has been named *Leiden+*, an evolved version of the Leiden system of philological critical signs. Though it overlays an advanced XML semantic annotation layer, its syntax is deeply indebted to the papyrological print conventions and the platform is designed to display it in an output that resembles very much a paper edition.[40] The new and ongoing project *Digital Corpus of Literary Papyri* (DCLP), held at the University of Heidelberg and aimed at collecting the digital texts of the literary and paraliterary papyri,[41] is based on the same mechanics, but the more articulated needs of literary texts urged to consider several enhancements to the *Leiden+* syntax and to the underlying XML scheme.[42] The project *Corpus of the Greek Medical Papyri Online*, held at the University of Parma under the direction of Prof. Isabella Andorlini with the purpose of creating a digital databank of the Greek medical papyri,[43] has been among the first partners of the DCLP in providing texts and suggesting technical improvements from the point of view of technical ‘paraliterary’ texts. The attention, for the moment, has been focused on the paratextual apparatus (critical and diacritical signs, layout features and the like[44]), but it is clear that also the intertextual and the other transtextual correlations must be taken into consideration in order to give a full digital representation of our texts and of their network of literacies.[45]

It is in particular in the concept of *multitext* that—in my opinion—we can find the most suitable architecture for representing complex and fluid textual products stemming from the horizon of the multiple ‘literacies’ that have been sketched so far. A multitext model has already been employed with success for the case of Homeric oral poetry,[46] and is particularly suitable for fluid, multiform text traditions hardly containable in rigid definitions and fixed schemes. A multitext is basically a dynamic collection of multiple critical editions, a network of versions with a single root. As Monica Berti described it,

> It produces a representation and visualization of textual transmission completely different from print conventions, where the text that is reconstructed by the editor is separated from the critical apparatus that is printed at the bottom of the page. [… It] allows the reader to have a dynamic visualization of the textual tradition and to

> perceive the different channels of both the transmission and philological production of the text that is usually hidden in the static, concise, and necessarily selective critical apparatuses of standard printed editions. Producing a multitext, therefore, means producing multiple versions of the same text, which are the representation of the different steps of its transmission and reconstruction, from manuscript variants to philological conjectures.[47]

Archaic epic is of course an extreme case. In Albert Lord's words,

> Our real difficulty arises from the fact that, unlike the oral poet, we are not accustomed to thinking in terms of fluidity. We find it difficult to grasp something that is multiform. It seems to us necessary to construct an ideal text or to seek an original, and we remain dissatisfied with an ever-changing phenomenon. I believe that once we know the facts of oral composition we must cease trying to find an original of any traditional song. From one point of view each performance is an original.[48]

Mutatis mutandis, these considerations apply to ancient medicine, an oral knowledge intertwined with practical know-how and with a deep and complex relationship with writing, and even more to ancient medical texts preserved on papyrus, which attest to a much wider variety of technical, specialised writings. A multitext model, after all, is being successfully applied to different textual traditions than the mere Homeric poetry: namely, the fragments of the ancient historians.[49] Given the fragmentation of ancient medical writings on papyrus,[50] this is an interesting and suitable precedent. According to Monica Berti,

> Encoding fragments is first of all the result of interpreting them, developing a language appropriate for representing every element of their textual features, thus creating meta—information through an accurate and elaborate semantic markup. Editing fragments, therefore, signifies producing meta—editions that are different from printed ones because they consist not only of isolated quotations but also of pointers to the original contexts from which the fragments have been extracted. On a broader level, the goal of a digital edition of fragments is to represent multiple transtextual relationships as they are defined in literary criticism […]. Designing a digital edition of fragments also means finding digital paradigms and solutions to express information about printed critical editions and their editorial and conventional features. Working on a digital edition means converting traditional tools and resources used by scholars such as canonical references, tables of concordances, and indexes into machine actionable contents.[51]

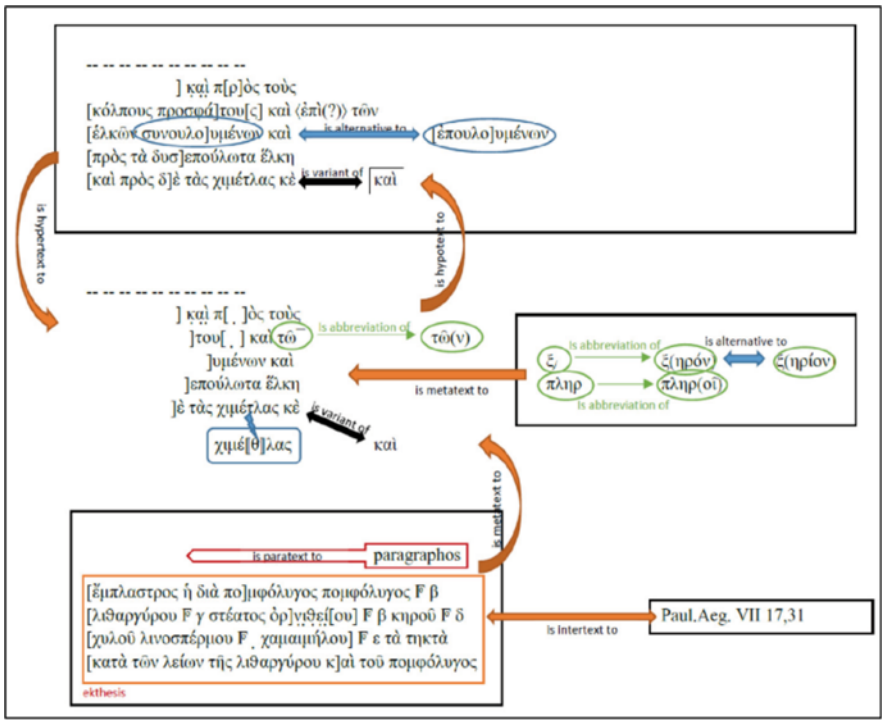
This paradigm can be easily exported to the case of Greek medical papyri,[52] provided that most of the infrastructures (markup, metadata) are already available through the existing and the forthcoming papyrological platforms.

Creating a multitext edition of Greek medical papyri means to give a digital representation of both the paratextual and the other transtextual connections that make up the network of ancient medical literacies as described above, translating them into a new network of "digital literacies," meaning the capability to handle multiple textual and cultural traditions at the same time. Of course, it is not possible to leave digital multitext editions of the literary manuscript tradition out of consideration, because of the thick intertextual links between the technical writings preserved on papyrus and the literary treatises, but also because of the interesting philological variants that appear in the papyrological sources. One meaningful example will suffice. P.Tebt. II 272 verso (late second century AD) is a fragment of Herodotus Medicus' *De Remediis*, describing the symptomatology of thirst and its treatment.[53] The text corresponds in part to an excerpt preserved with Oribasius (*Coll. med*. V 30,6—7 Raeder = CMG VI 1,1). At line 5, where the text reads αἰτίαι τῆς προσφορᾶς introducing the different reasons for giving the sick something to drink, the scribe added two groups of three letters between dots above the line : *τῶν* above τῆς, and *ρῶν* (i.e. προσφορῶν) above ρᾶς. This is not a supralinear addition, since it cleary stands for a morphological variant of the syntagm

below (plural instead of singular), and it is not clear whether it is a correction[54] or the juxtaposition of two different versions of the same passage.[55] The papyrological variant is unattested in the manuscript tradition, i.e. in Oribasius' passages quoting Herodotus Medicus, which all have the singular form: this makes our source extraordinarily interesting also as regards the evaluation of ancient medical "literacies," and deserves a suitable digital treatment.[56]

A multitext edition envisaging multiple textual layers seems also to be the best way to represent linguistic variation in the fluid medical written tradition.[57] This has an outcome in terms of representation of "literacies" too, as the following, last example can show. P.Oslo inv. 1576, a fragment of a catechism dealing with tumour-like diseases,[58] partly overlaps with P.Oxy. LXXX 5239 (both date back to the second–third century AD). The latter is more likely a "treatise" than a questionnaire, as its editor David Leith notes (see above for this distinction), and the difference may be perceived from the lack of *eistheseis* in its questions. The scarceness of the surviving portions of text makes it hard to say whether the questionnaire derives from the treatise or they are two different outcomes of a same ascendant. As far as the extant parallel text is concerned, the wordings diverge from each other only for one variant: ὑδροκήλη (P.Oslo, l. 5) / [ὐ]γροκήλη (P.Oxy., l. 15). The latter is usually considered as a minority variant (LSJ, quoting Poll. IV 203) of the former (used e.g. by Ps.Gal. *Def.med*. 424 = XIX 447,12–13 K.), but it is attested three times among the medical writers (Orib. *Syn.Eust*. III 28, 6 and 9 = CMG VI 3, p. 75, 15–16 and 21 Raeder; Steph. *In Hipp. Progn. Comm*. II 1 = CMG XI 1,2, p. 140,25 Duffy). Are we facing a trivialization in the Oslo papyrus, or a phonetic variant in the Oxy papyrus, or just two different traditions bearing the same degree of 'correctness', attesting to a fluid notion of 'literacies'? Moreover, in the following line of the Oslo papyrus (no more paralleled by its P.Oxy. counterpart) we read ἐρυτρ[οειδῆ, which looks like a phonetic variant of ἐλυτροειδής "lid-like," "cover-like" (attribute of one of the membranes enveloping the scrotum). *Rho* for *lambda* is indeed a very frequent phonetic exchange in the language of the Greek papyri,[59] but the same variation is to be found among the manuscripts preserving Ps.Galen's *Introductio seu Medicus*, containing a descriptive passage (XIV 719,5–10 K.) of the same anatomical part.[60] Once more time, the impression is that we are facing a peculiar intersection of multiple "literacies" that can find a proper representation through a multitext digital model only.

The following picture resumes the preceding observations by applying a multitextual ontology to a textual fragment of the abovementioned *Michigan Medical Codex*. The witness is unique, but the transtextual relationships create a multitextual network that clearly goes beyond the mere fixation of a canonical archetype and does justice to a complex and fluid interconnection of multiple literacies.[61] In details, what the image depicts is a tentative ontology of a fragmentary page of the codex (boxes and circles represent layers, arrows show the connections between layers). In the middle of the box stands the text as it is on the papyrus came down to us ("hypotext"), including lacunas (square brackets) and unresolved abbreviations (l. 2). This text is linked, with reciprocal relations, to the reconstruction of the same passage as originally intended by the scribe ("hypertext," in the top box). This is of course the product of an ecdotic process: indeed there is an editorial alternative as to the supplement at l. 3, which is rendered as a connected ("parallel") layer rather than in the apparatus. The same strategy is deployed in the case of abbreviations (the resolved word is in a parallel layer) and—most importantly—of linguistic variation (κέ for καί, l. 5). In this way, the "variant" and the "standard" forms are encoded and displayed at the same textual level, not in an artificial hierarchy dictated by the apparatus. A phonetic variant corrected by the ancient scribe (χιμέθλας → χιμέτλας, l. 5) is annotated in a different but analogous way, so that both words are encoded properly and fully searchable. The right-hand box represents the marginal notes added by the owner of the codex (metatext), with abbreviated indications resolved as above and another modern editorial alternative affecting the interpretation of the first abbreviation. The bottom box contains the owner's personal addition into the lower margin of the page (metatext again): an entire new prescription, separated from the previous one by means of a horizontal rule (*paragraphos*), encoded as such in a paratext layer.[62] This added recipe finds a strict parallel in pharmacological literature (Paul of Aegina), which is appropriately recalled in an intertext layer to the right.[63]



To conclude, the new possibilities offered by the digital infrastructures can pave the way to the creation, as wished by Gregory Crane, of a larger and well-defined *corpus* of texts,[64] where the multitext architecture can help giving ancient medical sources back their deep link with ancient medical literacies through new, modern digital literacies.

Bibliography[65]

Andorlini, I. 1995. *Trattato di medicina su papiro*. Florence.

———. 2000. “Codici papiracei di medicina con scolî e commento.” In *Le commentaire entre tradition et innovation. Actes du colloque international de l’Institut des Traditions Textuelles (Paris et Villejuif, 22–25 semptembre 1999)*, ed. M.-O. Goulet-Cazé, 37–52. Paris.

———. 2018. *πολλὰ ἰατρῶν ἐστι συγγράμματα. Scritti sui papiri e la medicina antica*, ed. N. Reggiani. Florence.

Andorlini, I., and R.W. Daniel. 2016. *Two Hellenistic Medical Papyri of the Ärztekammer Nordrhein (P.ÄkNo 1 and 2)*. Paderborn.

Andorlini Marcone, I. 1993. “L’apporto dei papiri alla conoscenza della scienza medica antica.” In *Aufstieg und Niedergang der römischen Welt*, II 37.1, ed. H. Temporini, 458–562. Berlin.

Ast, R., and H. Essler. 2018. “*Anagnosis*, Herculaneum, and the *Digital Corpus of Literary Papyri*.” In *Digital Papyrology II: Case Studies on the Digital Edition of Ancient Greek Papyri*, ed. N. Reggiani, 63–73. Berlin.

Berti, M. 2012. “Citazioni e dinamiche testuali. L’intertestualità e la storiografia greca frammentaria.” In *Tradizione e trasmissione degli storici greci frammentari, II. Atti del Terzo Workshop Internazionale (Roma 2011)*, ed. V. Costa, 439–458. Tivoli.

———. Forthcoming. “Fragmentary Texts and Digital Libraries.” In *Philology in the Age of Corpus and Computational Linguistics*, eds. G. Crane, A. Lüdeling, and M. Berti. Washington, DC. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.452.606&rep=rep1&type=pdf (http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.452.606&rep=rep1&type=pdf).

Bird, G.D. 2010. *Multitextuality in the Homeric Iliad. The Witness of the Ptolemaic Papyri*. Washington, DC.

Bonati, I. 2016. “L’etichettatura del farmaco: radici antiche di una tradizione millenaria.” In *Medica-papyrologica. Specimina di ricerca presentati al convegno “Parlare la Medicina” (Parma, 5–7 settembre 2016)*, ed. N. Reggiani, 43–77. Parma.

Boudon, V. 2003. “Comment Galien désignait-il ses propres oeuvres? Pour une ecdotique des titres.” In *Trasmissione e ecdotica dei testi medici greci. Atti del IV Convegno Internazionale (Parigi, 17–19 maggio 2001)*, eds. A. Garzya and J. Jouanna, 25–27. Naples.

Cambiano, G. 1992. “La nascita dei trattati e dei manuali.” In *Lo spazio letterario della Grecia antica*, I/1: *La produzione e la circolazione del testo – La polis*, eds. G. Cambiano, L. Canfora, and D. Lanza, 525–553. Rome.

Celano, G.G.A. 2018. “An Automatic Morphological Annotation and Lemmatization for the IDP Papyri.” In *Digital Papyrology II: Case Studies on the Digital Edition of Ancient Greek Papyri*, ed. N. Reggiani, 139–147. Berlin.

Colomo, D. 2008. “Osservazioni sullo scriba ossirinchita dell’*omega* quadrangolare (Johnson A2).” *Segno & Testo* 6:3–34.

Crane, G. 2010. “Give Us Editors! Re-inventing the Edition and Rethinking the Humanities.” In *Online Humanities Scholarship: The Shape of Things to Come*, eds. F. Moody and B. Allen. New York. http://cnx.org/contents/XfgqFrtg@2/Give-us-editors-Re-inventing-t (http://cnx.org/contents/XfgqFrtg@2/Give-us-editors-Re-inventing-t).

Depauw, M., and J. Stolk. 2015. “Linguistic Variation in Greek Papyri: Towards a New Tool for Quantitative Studies.” *Greek, Roman and Byzantine Studies* 55:196–220.

Di Benedetto, V. 1986. *Il medico e la malattia. La scienza di Ippocrate*. Turin.

Dué, C., and M. Ebbott. 2009. “Digital Criticism: Editorial Standards for the Homer Multitext.” *Digital Humanities Quarterly* 3/1. http://www.digitalhumanities.org/dhq/vol/3/1/000029/000029.html (http://www.digitalhumanities.org/dhq/vol/3/1/000029/000029.html).

Evans, T.V. 2010a. “Standard Koine Greek in Third Century BC Papyri.” In *Proceedings of the Twenty-Fifth International Congress of Papyrology (Ann Arbor 2007)*, eds. T. Gagos *et al*, 197–206. Ann Arbor.

———. 2010b. “Identifying the Language of the Individual in the Zenon Archive.” In *The Language of the Papyri*, eds. T.V. Evans and D.D. Obbink, 51–70. Oxford.

Fischer, K.-D. 1998. “Beiträge zu den pseudosoranischen *Quaestiones Medicinales*.” In *Text and Tradition. Studies in Ancient Medicine and Its Transmission presented to Jutta Kollesch*, eds. K.-D. Fischer, D. Nickel, and P. Potter, 1–41. Leiden.

Fischer Bovet, C. 2009. “Letter Requesting Medical Tools.” In *Greek Medical Papyri II*, ed. I. Andorlini, 157–165. Florence.

Genette, G. 1992.*The Architext: An Introduction*. Berkeley. Originally published as *Introduction à l’architexte*. Paris, 1979.

———. 1997. *Palimpsests. Literature in the Second Degree*. Lincoln. Originally published as *Palimpsestes: la littérature au second degree*. Paris, 1982.

Gignac, F.T. 1976. *A Grammar of the Greek Papyri of the Roman and Byzantine Periods, I: Phonology*. Milan.

Hanson, A.E. 1985. “Papyri of Medical Content.” *Yale Classical Studies* 28:25–47.

———. 1997. “Fragmentation and the Greek Medical Writers.” In *Collecting Fragments / Fragmente*

Sammeln, ed. G.W. Most, 289–314. Göttingen.

———. 2003. “Text and Context in Papyrus Catechisms on Afflictions of the Head.” In *Trasmissione e ecdotica dei testi medici greci. Atti del IV Convegno Internazionale (Napoli 2001)*, ed. A. Garzya and J. Jouanna, 199–217. Naples.

———. 2010. “Doctors’ Literacy and Papyri of Medical Content.” In *Hippocrates and Medical Education*, ed. M. Horstmanshoff, 187–204. Leiden.

Ieraci Bio, A.M. 1995. “L’ἐρωταπόκρισις nella letteratura medica.” In *Esegesi, parafrasi e compilazione in età tardoantica*, 187–207. Naples.

Johnson, W. A. 2009. “Introduction.” In *Ancient Literacies: The Culture of Reading in Greece and Rome*, eds. W. A. Johnson and H. N. Parker, 3–10. Oxford.

Kollesch, J. 1963. *Untersuchungen zu den pseudogalenischen* Definitiones Medicae. Berlin.

Leith, D. 2007 “A Medical Treatise ‘On Remedies’? P.Turner 14 Revised.” *Bulletin of the American Society of Papyrologists* 44:125–135.

———. 2009. “Question-Types in Medical Catechisms on Papyrus.” In *Authorial Voices in Greco-Roman Technical Writing*, eds. L.C. Taub and A. Doody, 107–123. Trier.

Lord, A.B. 1960. *The Singer of Tales*. 2nd ed. 2000. Cambridge, MA.

LSJ = Liddell, H.G. and R. Scott. 1996. *A Greek-English Lexicon*. Revised and augmented by H.S. Jones et al., with a revised supplement. 9th ed. Oxford.

Magnani, M. 2018. “The Other Side of the River. Digital Editions of Ancient Greek Texts Involving Papyrus Witnesses.” In *Digital Papyrology II: Case Studies on the Digital Edition of Ancient Greek Papyri*, ed. N. Reggiani, 87–102. Berlin.

Mairs, R. 2018 (in press). “*Aigyptia Grammata*: Linguistic and Medical Training in Graeco-Roman Egypt.” In *Parlare la medicina: tra lingue e culture, nello spazio e nel tempo. Atti del Convegno Internazionale (Parma, 25-27 Settembre 2016)*, eds. N. Reggiani and F. Bertonazzi, 3–11. Florence.

Manetti, D., and A. Roselli. 1994. “Galeno commentatore di Ippocrate.” In *Aufstieg und Niedergang der römischen Welt*, II 37/2, ed. H. Temporini, 1557–1565. Berlin.

Maravela, A., and D. Leith. 2007. “A Medical Catechism on Tumours from the Collection of the Oslo University Library.” In *Proceedings of the 24th International Congress of Papyrology (Helsinki, 1–7 August 2004)*, eds. J. Frösén, T. Purola and E. Salmenkivi, 637–650. Helsinki.

Marganne, M.-H. 1981. “Un fragment du medecin Herodote: P. Tebt. II 272.” In *Proceedings of the Sixteenth International Congress of Papyrology (New York, 24–31 July 1980)*, 73–86. Chico.

———. 1986. “La ‘*Cirurgia Eliodori*’ et le P. Genève inv. 111.” *Etudes de Lettres*. 65–73.

———. 2003. “Le médecin, la trousse et le livre dans le monde gréco-romain.” *Papyrologica Lupiensia* 12:115–130.

Nagy, G. 2010. “Homer Multitext Project.” In *Online Humanities Scholarship: The Shape of Things to Come*, eds. F. Moody and B. Allen. New York. http://cnx.org/contents/PVdH0-ID@1.3:PnJNZAQL@2/Homer-Multitext-project (http://cnx.org/contents/PVdH0-ID@1.3:PnJNZAQL@2/Homer-Multitext-project).

Nieddu, G.F. 1992. “Il ginnasio e la scuola: scrittura e mimesi del parlato.” In *Lo spazio letterario della Grecia antica*, I.1: *La produzione e la circolazione del testo – La* polis, eds. G. Cambiano, L. Canfora, and D. Lanza, 555–585. Rome.

Nutton, V. 1972. “Galen and Medical Autobiography.” *Proceedings of the Cambridge Philological Society* 198:50–62.

Perilli, L. 2007. “Conservazioni dei testi e circolazione della conoscenza in Grecia.” In *Biblioteche del mondo antico. Dalla tradizione orale alla cultura dell’Impero*, ed. A.M. Andrisano, 36–71. Rome.

Petit, C. 2009. *Galien: Le médicin.* Introduction. Paris.

Porter, S.E., and M.B. O’Donnell. 2010. “Building and Examining Linguistic Phenomena in a Corpus of Representative Papyri.” In *The Language of the Papyri*, eds. T.V. Evans and D.D. Obbink, 287–311. Oxford.

Reggiani, N. 2010. “Dalla magia alla filologia: documenti su libri e biblioteche nell’Antichità.” *Papyrotheke* 1:97–135. http://hdl.handle.net/1889/1753 (http://hdl.handle.net/1889/1753).

———. 2012. “Le tavolette della mente. Risorse digitali e Antichistica: il caso della Papirologia.” In *Umanisti e risorse digitali*, ed. A.M. Tammaro, 83–102. Parma.

———. 2015. “A Corpus of Literary Papyri Online: The Pilot Project of the Medical Texts via SoSOL.” In *Antike Lebenswelten: Althistorische und papyrologische Studien*, eds. R. Lafer and K. Strobel, 341–352. Berlin.

———. 2016. “The Corpus of Greek Medical Papyri and Digital Papyrology: New Perspectives from An Ongoing Project.” In *Altertumswissenschaften in a Digital Age – Egyptology, Papyrology and Beyond. Proceedings of a Conference and Workshop in Leipzig (November 4–6, 2015)*, eds. M. Berti and F. Naether, Chapter 1.9. Leipzig. http://nbn-resolving.de/urn:nbn:de:bsz:15-qucosa-201726 (http://nbn-resolving.de/urn:nbn:de:bsz:15-qucosa-201726).

———. 2017. *Digital Papyrology I: Tools, Methods and Trends*. Berlin.

———. 2018. “The Corpus of the Greek Medical Papyri and a New Concept of Digital Critical Edition.” In *Digital Papyrology II: Case Studies on the Digital Edition of Ancient Greek Papyri*, ed. N. Reggiani, 3–61. Berlin.

———. 2019 (forthcoming). “Linguistic and Philological Variants in the Papyri: A Reconsideration in Light of the Digitization of the Greek Medical Papyri.” In *Greek Medical Papyri: Text – Context – Hypertext. Proceedings of the Final DIGMEDTEXT Conference (Parma, 2-4 November 2016)*, ed. N. Reggiani. Berlin.

———. Forthcoming. “The Corpus of Greek Medical Papyri Online and the Digital Edition of Ancient Documents.” In *Proceedings of the 28th International Congress of Papyrology (1–6 August 2016).* Barcelona.

Stolk, J.V. 2018. “Encoding Linguistic Variation in Greek Documentary Papyri. The Past, Present and Future of Editorial Regularization.” In *Digital Papyrology II: Case Studies on the Digital Edition of Ancient Greek Papyri*, ed. N. Reggiani, 119–137. Berlin.

Totelin, L.M.V. 2009. “Galen’s Use of Multiple Manuscript Copies in His Pharmacological Treatises.” In *Authorial Voices in Greco-Roman Technical Writing*, eds. L. Taub and A. Doody, 81–92. Trier.

Vierros, M. 2018. “Linguistic Annotation of the Digital Papyrological Corpus: *Sematia*.” In *Digital Papyrology II: Case Studies on the Digital Edition of Ancient Greek Papyri*, ed. N. Reggiani, 105–118. Berlin.

Vierros, M., and E. Henriksson. 2016 (forthcoming). “Preprocessing Greek Papyri for Linguistic Annotation.” In *Computer-Aided Processing of Intertextuality in Ancient Languages = Journal of Data Mining and Digital Humanities*. https://hal.archives-ouvertes.fr/hal-01279493 (https://hal.archives-ouvertes.fr/hal-01279493).

Zalateo, G. 1964. “Papiri di argomento medico redatti in forma di domanda e risposta.” *Aegyptus* 44:52–57.

Footnotes

[back] ***** This paper falls into the framework of the Project “Online Humanities Scholarship: A Digital Medical Library Based on Ancient Texts” (ERC-AdG-2013-DIGMEDTEXT, Principal Investigator Prof. Isabella Andorlini), funded by the European Research Council (Grant Agreement No. 339828) at the University of Parma (see the website http://www.papirologia.unipr.it/ERC (http://www.papirologia.unipr.it/ERC) and below).

[back] **1.** Hanson 2010:191; Andorlini 2018:24–28. The letter contains explicit references to different written copies (l. 13: ἀντιρράφια i.e. ἀντιγράφια; l. 23: γραφ(ε)ῖον) of pharmaceutical recipes: cf. Andorlini 2018:299: “il nostro medico di provincia ci pare impegnato nel tenere in mano più versioni di uno stesso testo da collazionare” (cf. Andorlini Marcone 1993:462–464. One may wonder to what sort of literacy a document like GMP II 10 attests. It is a letter requesting medical tools, certainly written by a practicing physician in the second half of the VI century AD, full of grapho-phonetic “mistakes” (cf. Fischer Bovet 2009:157–160). This relates to a more general discourse relating to the evaluation of such “errors,” which are in fact better defined as “linguistic variations” and by no means suggest illiteracy, but rather a strong influence of the spoken language, that is quite understandable in the colloquial context of a private letter. Yet the writer of GMP II 10 employs a very technical medical vocabulary (*othonion* “thin linen compress,” which is commonly found among medical recipes; *pera tou iatrou* “the doctor’s bag” (cf. Marganne 2003:126 with note 33; Fischer Bovet 2009:163–164); *smile* “scalpel,” abundantly attested in surgical treatises) that points to a deep medical literacy shared with the recipient of the letter.

[back] **2.** Andorlini 2018: 4. Cf. also Maris 2018.

[back] **3.** Hanson 2010:192.

[back] **4.** Hanson 2010:199 evokes laymen interested in self-medication as possible holders of single prescriptions.

[back] **5.** Johnson 2009:3.

[back] **6.** Cf. Andorlini Marcone 1993:460–474; Andorlini 2018:3–4.

[back] **7.** Genette 1992:83, then Genette 1997:1.

[back] **8.** Based on Genette 1992:83–84, as later developed in Genette 1997:1–7.

[back] **9.** References in other medical treatises are not few: cf. Cambiano 1992:547.

[back] **10.** Unknown scholarship: e.g. P.Äk.No. 1–2 (III–II BC, cf. Andorlini-Daniel 2016); PSI inv. 3054 etc. (I–II AD, cf. Andorlini 1995); P.Lond.Lit. 165r (I–II AD, the “Anonymus Londinensis”). Known scholarship: fragments of Hippocrates, Galen, Nicander, Dioscorides, Heliodorus, Herodotus Medicus, Apollonius Mys, Heras, Soranus. Cf. Andorlini-Marcone 1993 *passim*.

[back] **11.** Cf. Hanson 2003:200–201. For the composition of the catechistic handbook, which required a skilled medical literacy and can be “related to wider intellectual traditions,” cf. Leith 2009. See also Andorlini 2018:240–241 and 286–293.

[back] **12.** Nutton 1972; Andorlini 2018:241–242 and 297.

[back] **13.** Cf. the stylistic notes on the Hippocratic *corpus* by Nieddu 1992:555–567.

[back] **14.** Attested e.g. among templar properties in IG II^2 1533 second half of the IV century BC), from the temple of Asklepios in Athens.

[back] **15.** Perilli 2007:55–71.

[back] **16.** See Gal. *Diff.resp*. VII 855, 4–5 K. (τὰ ἐκ τοῦ cμικροῦ πινακιδίου “the things taken from the small tablet”). Cf. Cambiano 1992:545–547; Di Benedetto 1986:11–34 and 88–96; Reggiani 2010:113–114. Hanson 1997:306, speaks of “accretive model of composition” for such catalogues (see below).

[back] **17.** On the practice of annotating medical treatises with *scholia* and comments cf. Andorlini 2018:294–317. The comments can acquire either the organic format of the commentaries, autonomous exegetic treatises, the most illustrious examples of which are Galen's commentaries on Hippocratic texts (cf. Manetti-Roselli 1994, and see e.g. Gal. *In Hipp. Epid. III comm*. II 4 = CMG V 10,2,1, p. 78,7–11 Wenkeback, where the author himself explains some reasons for compiling commentaries), or the scattered aspect of the *scholia* or marginal annotations (see the example of P.Ant. I 28, fragment of a third-century parchment codex from Antinoupolis with the text of Hippocrates' *Aphorisms* and *marginalia*: cf. Andorlini 2000:41–42; Andorlini 2018:301–306).

[back] **18.** Cf. Andorlini 2000:38–39; Andorlini 2018:298–299; Totelin 2009; Bonati 2016:64–65.

[back] **19.** Cf. Andorlini 2000:37–38. In some cases it is possible to speak of erroneous or inaccurate deviations from the original (it is the case with Galen's treatises, for which the ancient author himself stigmatised the circulation of incorrect versions of his own books: *De libris propriis* II 91–93 Müller = XIX 8–11 K.; cf. Hanson 1985:43–45) but in other cases it is difficult to go back to a genuine text (Hanson 1985:34–35 makes the example of Hippocratic *Letters*).

[back] **20.** Cf. Reggiani 2015:347; Reggiani 2016:3.

[back] **21.** Cf. Hanson 1997:296. On the concept of intertextuality applied to ancient quotations cf. Berti 2012 (part. 439–446) about ancient historians.

[back] **22.** On the collation of annotated copies, always according to Galen's words (*In Hipp. Off. Med. comment*. III 22 = XVIIIb 863,14–865,5 K.; *In Hipp. Epid. III comment*. II 8 = XVIIa 634,3—7 K.), cf. Andorlini 2018:298, who recalls (note 15) the story of Mnemon, who took the third book of Hippocrates' *Epidemics* from the library of Alexandria and brought it back with the marginal addition of marks indicating clinical histories, traced with dark ink and big letters, in imitation of the original handwriting. Cf. also Bonati 2016:63–64.

[back] **23.** I will not deal with the issue of the titles of medical works, which pertains to what Genette calls "paratext" but is very poorly relevant for the papyrological side of the question. For some considerations on this theme, cf. Boudon 2003.

[back] **24.** Hanson 2010:192–197. On this text typology cf. Zalateo 1964; Ieraci Bio 1995; Hanson 2003; Leith 2009; Andorlini 2018:286–293.

[back] **25.** Cf. Andorlini 2018:287.

[back] **26.** On which cf. Kollesch 1963 and Fischer 1998.

[back] **27.** Cf. already Andorlini 2018:122–123.

[back] **28.** Leith 2007.

[back] **29.** Cf. Marganne 1986.

[back] **30.** Hanson 2010:197–200.

[back] **31.** Cf. Andorlini 2018:15–36 *passim*. Graphical features such as a massive use of symbols and abbreviations point to the same oral context. The same can be said with regard to the graphical layout: cf. Bonati 2016:66–67.

[back] **32.** Cf. Reggiani 2010, part. pp. 112–116.

[back] **33.** Among which we ought to include also the medicine labels discussed by Bonati 2016.

[back] **34.** Cf. also Bonati 2016:62–63.

[back] **35.** Cf. Youtie 1996:1–3; Andorlini 2018:306–307.

[back] **36.** Hanson 2010:197–198.

[back] **37.** Hanson 2010:199; cf. also the observations by Bonati 2016:60–69.

[back] **38.** Cf. Andorlini 2018:307.

[back] **39.** Hanson 2010.

[back] **40.** Cf. Reggiani 2017:222–241; Andorlini 2018:366-369.

[back] **41.** It has been thoroughly presented by James Cowey at the 28th International Congress of Papyrology at Barcelona (1–6 August 2016). Cf. Reggiani 2017:251–252; Ast-Essler 2018:63–67.

[back] **42.** Cf. Reggiani 2017:252–253.

[back] **43.** Cf. Reggiani 2012:95; Reggiani 2015; Reggiani 2016; Reggiani 2017:273–275; Andorlini 2018:369–370; Reggiani forthcoming.

[back] **44.** Cf. Reggiani forthcoming, with a particular focus on the text typologies discussed above (catechisms and collections of recipes).

[back] **45.** Cf. Reggiani 2018.

[back] **46.** It is the “Homer Multitext Project” hold at the Center for Hellenic Studies (http://www.homermultitext.org (http://www.homermultitext.org); cf. Dué-Ebbott 2009 and Nagy 2010), resulting from the statement that the Homeric textual evidence, multiform and fluid in nature, does not comply with the traditional philological view of textual variants stemming from one archetype, since a true original Homeric text never existed (cf. Reggiani 2017:266; Magnani 2018). A multitext model has also been applied to the Ptolemaic papyrological witnesses of the *Iliad*: cf. Bird 2010.

[back] **47.** Berti forthcoming, p. 4.

[back] **48.** Lord 1960:100.

[back] **49.** Berti forthcoming; see http://www.dh.uni-leipzig.de/wo/lofts (http://www.dh.uni-leipzig.de /wo/lofts). “Fragment” refers here to textual excerpts inserted as quotations in other authors’ works.

[back] **50.** Cf. Hanson 1997 and see above.

[back] **51.** Berti forthcoming, p. 2.

[back] **52.** Of course, the medical corpus does show a much different pattern of transmission than Homeric poems or historiographical fragments, but the cited examples provide a common bottom line, namely the replacement of a somewhat inadequate ‘stemmatological’, mono-textual edition aiming at reconstructing a ‘virtual’ archetype with the digital interconnection and juxtaposition of data and metadata in a dynamic and holistic network of information (cf. Reggiani 2018:3–6).

[back] **53.** Cf. Marganne 1981.

[back] **54.** Nothing appears deleted, but there are examples of philological corrections added *supra lineam* by the ancient scribes without deletion marks, as well as of deletions indicated by means of overdots (both features are attested e.g. in P.Oxy. XXIV 2404, ii 6: cf. Colomo 2008:24).

[back] **55.** The first editors speak of “correction or alternative reading,” Marganne 1981:76 of “hésitation.”

[back] **56.** The markup currently available through the papyrological editorial platform does not offer any convincing way to represent that situation. For further technical details, cf. Reggiani forthcoming.

[back] **57.** The issue of linguistic variation in the Greek papyri and its digital study by means of the tools provided by corpus linguistics and linguistic annotation came very recently on the agenda of papyrological studies: cf. Evans 2010a; Evans 2010b; Porter-O’Donnell 2010; Depauw-Stolk 2015; Vierros-Henriksson

2016; Reggiani 2017:178–188; Celano 2018; Stolk 2018; Vierros 2018. For possible applications to the digital edition of the Greek medical papyri cf. Reggiani 2015:344 and 347; Reggiani 2016:2–3; Reggiani 2018:26–29; Reggiani 2019; Reggiani forthcoming.

[back] **58.** Maravela-Leith 2007. The papyrus will be republished in the forthcoming third volume of the *Papyri Osloenses.* I am most grateful to Prof. Anastasia Maravela for sharing her drafts of the new edition and for discussing with me some textual and linguistic details.

[back] **59.** Cf. Gignac 1976:105.

[back] **60.** The previous editors corrected in ἐρυθροειδοῦc, but the newest *Belles Lettres* edition (Petit 2009) prints ἐλυτροειδοῦc (XII 11, p. 40,1; see Petit 2009:XCVI–XCIX for the description of the manuscript tradition). Quite interestingly, the author of the treatise came possibly from Egypt (cf. Petit 2009:L—LI), which suggests that the phonetic variation could have worked both ways.

[back] **61.** Cf. Reggiani 2018 *passim*. Elsewhere, I contended that such a different viewpoint can reshape our concept of digital critical editions, which can be considered as a further step in the textual transmission rather than a return to its original source(s). This was the subject of a paper presented at the conference “Digital Classics III – Re-thinking Text Analysis” (Heidelberg, May 11–13, 2017) and forthcoming in its proceedings (abstract online at https://docs.google.com/document /d/1b8oPWy5Pww_ICW3e_YbKXE4jh1Vh9HFG1fzWfZRajaw/edit?usp=sharing (https://docs.google.com /document/d/1b8oPWy5Pww_ICW3e_YbKXE4jh1Vh9HFG1fzWfZRajaw/edit?usp=sharing)). This multitext ontology will be tested on select medical papyri in the framework of the MIUR-DAAD Joint Mobility Program “Digitizing literary and paraliterary papyri: textual encoding and linguistic annotation” (EKDOSIS) held in Parma (coordinator Massimo Magnani) and Würzburg (coordinator Holger Essler); a web page will be soon available at http://www.papirologia.unipr.it/ekdosis (http://www.papirologia.unipr.it/ekdosis).

[back] **62.** The display of this second metatext layers is simplified for the sake of clarity: the supplements and the symbols occurring here should be annotated as in the hypertext layer described above.

[back] **63.** Here the intertext layer contains the relevant citation only. Intertext layers may be further developed to point to the appropriate passages to be found e.g. in the *Thesaurus Linguae Graecae* online at http://stephanus.tlg.uci.edu (http://stephanus.tlg.uci.edu) or in the *Corpus Medicorum Graecorum* online editions at http://cmg.bbaw.de/epubl/online/editionen.html (http://cmg.bbaw.de/epubl/online/editionen.html).

[back] **64.** Crane 2010.

[back] **65.** The papyrological sources are abbreviated according to the *Checklist of Editions of Greek, Latin, Demotic, and Coptic Papyri, Ostraca, and Tablets*, eds. J.D. Sosin, R. Ast, R.S. Bagnall, J.M.S. Cowey, M. Depauw, A. Delattre, R. Maxwell, P. Heilporn [http://papyri.info/docs/checklist (http://papyri.info /docs/checklist)].

Library (/CHS/article/display/1389.library-content-of-the-collection)
Personnel (/CHS/article/display/1229.chs-personnel)
Community (/CHS/article/display/6466.community)
Visit Us (/CHS/article/display/3.visit-us)
Contact Us (/CHS/article/display/1233.contact-chs)

fellowships-landing)
Student Programs (/CHS/article/index/5396.programs-student-landing)
Self-Directed Study (/CHS/article/display/6461.programs-self-directed-landing)
Faculty Development (/CHS/article/index/5413.programs-faculty-landing)

Classics@ Journal (/CHS/article/display/1167.classics-introduction-to-journal)
Classical Inquiries⇗ (http://classical-inquiries.chs.harvard.edu)
CHS Research Bulletin⇗ (http://www.chs-fellows.org)
Digital Humanities Projects (/CHS/article/display/5417.publications-digital-humanities-projects)
Prospective Authors (/CHS/article/display/1171.resources-for-authors)

/5344.chs-gr-about-us-history-and-mission-en-)
Programs in Greece (/CHS/article/index/5389.chs-gr-programs-landing-en-)
Digital Library (/CHS/article/index/5630.chs-gr-digital-library-landing-en-)
Events (/CHS/article/index/5391.chs-gr-events-landing-en-)
Collaborations (/CHS/article/index/5393.chs-gr-collaborations-landing-en-)

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