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The Corpus of Greek Medical Papyri and Digital Papyrology: new perspectives from an ongoing project

Nicola Reggiani

[slide 2] Three years ago, in Oslo, during one of the first official presentations of the project Corpus of the Greek Medical Papyri Online held at the University of Parma, now flown into the DIGMEDTEXT project, funded by the European Research Council (http://www.papirologia.unipr.it/ERC)[1], I advanced a range of trends, problematic in some ways, arisen by the digitisation of the Greek medical papyri (cf. N. Reggiani, *A Corpus of Literary Papyri Online: the Pilot Project of the Medical Texts via SoSOL*, "Antike Lebenswelten Althistorische und papyrologische Studien", hrsgg. R. Lafer und K. Strobel, Berlin-New York, De Grutyer, 2015, 341-52). It is indeed a corpus of very peculiar texts, which beside the well-known features of papyrus documents, implies issues connected to their special technical nature – which explains, if not justifies, their quasi-systematic exclusion from the usual documentary databanks and arises interesting questions on the digital edition of papyrus texts. Since then much has been endeavoured, both by the Parma team and on other frontlines, and it seems to me useful to present here a provisional appraisal, taking into account the current state of the art and stimulating further reflections on problems and difficulties not yet completely solved.

[slide 3] A first, more general issue was adapting the current platform for digitising papyri to the needs of a composite corpus containing also literary and "semi-literary" texts. The architecture of the *Papyrological Editor* was indeed designed to fulfil the needs of Greek and Latin documentary papyri: the XML skeleton based on a selection of the TEI standards already developed by Epidoc for the digital edition of ancient documents; the metadata taken from the HGV (later also from Trismegistos); the markup language Leiden+ designed to ease autonomous submissions by the community of the papyrologists. That issue has been absorbed by the very recent project *Digital Corpus of Literary Papyri*, started at the University of Heidelberg, of which the CPGM Online is a partner and a testing ground since the beginnings. The problems of how to encode textual or paratextual features almost absent from the documentary papyri (critical or diacritical marks, punctuation, marginal writings, graphical layout features, and so on), how to integrate the purely literary elements of a critical edition (textual variants, parallels, etc.), how to grasp the metadata from literary databases like the LDAB (**[slide 4]**), have been started up and are now in a process of proposal, discussion and solution by the team involved in building the new DCLP. Many encoding features already existing in Epidoc's XML schemes need to be recovered and possibly translated into Leiden+ language, others have to be created

[1] This paper was given within the framework of the said project (ERC-AdG-2013-DIGMEDTEXT [Prof. I. Andorlini], Grant Agreement No: 339828).

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anew. Still open questions concern, for example, the markup of the different typologies of abbreviation, the possibility to search for such features, the possibility to link parallels and quotations to other online resources like the Perseus digital library or the TLG.

[slide 5] Another perspective I pinpointed to enhance the analytical power of a database of medical papyri is the application of a linguistic annotation on multiple layers. Annotating is a fundamental practice in the linguistic study of a corpus of texts: it allows to describe, record, interpret and analyse linguistic information at several levels, in which each layer corresponds to a particular category of relevant information. On the theoretical and practical correctness of treating Greek medical papyri as a true textual corpus I think there must be no doubt: a linguistic corpus is usually intended as a selection of sample texts representative enough of a language, and though the medical papyri at our disposal come from a random and incomplete selection, they can be considered as the entire reference population rather than as a sample of a larger group, so that linguistic annotation seems to me absolutely feasible. The basic annotation layer, related to the analysis of the parts of speech (the one also known as treebanking because it is usually represented with a tree graph) would allow to conduct an extensive lexical, phraseological-formulaic and syntactic analysis on the corpus, aimed also (but not only) at discovering styles and writing strategies specific of the medical texts, both literary and documentary: think only of the possibility to find out influences or interpolations between authors, or the presence of literary echoes in technical or documentary texts. To analyse in depth and comprehend the syntactic structure of texts would allow also to solve problems of interpretation, or even only to understand the exact meaning of a text (let us consider for instance the case of a schematic recipe as P.Oxy. 1088 (**[slide 6]**), where implicit verbs and asyndetic syntax would have to be made explicit). In the field of classical philology such linguistic analyses are now at a very advanced level, and in the meantime papyrology too has made important progress, visible now in the interesting project Sematia, conducted at the University of Helsinki by Marja Vierros and her colleagues (http://sematia.hum.helsinki.fi), aimed at facilitating the linguistic tagging of digitised documentary papyri (**[slide 7]**). There are still some open problems, like how to integrate annotation layers in the current SoSOL platform or how to treat fragmentary words or multiple alternatives of supplement, but we register undoubtful progress in this field too (**[slide 8]**).

[slide 9] There are also other annotation layers that might enhance our corpus furthermore. Layers of normalisation or regularisation (in morphology, syntax, vocabulary, phonology, orthography) are already provided by the SoSOL platform, in the form of "corrections" of various types. However, a more systematic analysis of such pieces of information might lead to design an annotation layer related to the different typologies of linguistic variations, to a systematic study of them, and to the definition of schemes and models which could bring, for example, interesting statistical

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considerations on the doctors' cultural level. In this case too have been made some attempts to extract and analyse data concerning linguistic variants from what was already encoded in the existing databases (**[slide 10]** M. Depauw, J. Stolk, *Linguistic Variation in Greek Papyri: Towards a New Tool for Quantitative Study*, GRBS 55 (2015), 196-220; http://www.trismegistos.org/textirregularities): the advantages of an extensive integration of such an annotation layer in any database are apparent.

[slide 11] An annotation layer of "lemmatisation", that is the reduction of a declined or conjugated word to its original lemma, would prove essential in defining and analysing a specialised technical vocabulary like the one employed in the medical papyri, and it would represent an important bridge to connect the textual database to the related project Medicalia Online, consisting in an extensive lexical reference tool for ancient medical technical terms. From this viewpoint, a basic lemmatisation method is provided by the SoSOL platform through a glossary tool allowing to mark some keywords, of which brief definitions or explanations are inserted and displayed in pop-up boxes. A possible improvement of this type of annotation, with reference to the medical papyri, might lead to systematic connections to the lexical cards of Medicalia Online.

[slide 12]

[slide 13] A very interesting issue is the application to the medical papyri of the idea of transtextuality, defining the various possible relations among texts, as it has been recently analysed by Monica Berti: this does not relate only to the network of quotations and parallel passages, which we already considered earlier with reference to the possible improvement of the critical apparatus, but also to the aspect of fragment which very often the papyrus, be it literary or documentary, acquires. We can define the fragmentary character of the papyrus as a sort of "non-voluntary quotation", selected by the chance and by the material circumstances rather than by the will of an author. The transtextual link will be given in that case by the "virtual" existence of a hypertext (the original document, lost, more or less recoverable in a philological way) and the concrete one of a hypotext (our fragment). This perspective would bring innovative solutions to the current question of how to treat textual variants. A problem came up while defining the new encoding rules for the ongoing DCLP is indeed how to choose and represent the philological variants of a text: which critical edition to choose for reference, whether and how to represent the attested variants, how to consider a papyrus containing a textual variant unattested in the manuscript tradition, and so on. If we give up to consider a variant as a "wrong version" to be corrected and normalised, we can overcome the deadlock by looking at the set of variants as a network or a system, and by thinking the digital edition as a multitext, a place for a dynamic collation of several editions or versions, stratified in the time (**[slide 14]**). The Homer Multitext Project by the Center for the Hellenic Studies goes indeed along this path.

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[slide 15] A last – but not least – aspect to be considered is the global one of the digital edition itself. The SoSOL platform, as is known, offers, beside a basic critical apparatus, the possibility to enhance the text with an introduction (called front matter), a line-by-line commentary, and a translation in one or more modern languages. Leaving aside the translation, however, a papyrus already published elsewhere is very seldom digitised in this complete way (an example of the most common appearance of a papyrus in the current databank: http://www.papyri.info/ddbdp/p.oxy;2;293). On the contrary, the medical corpus, though including published texts, aims at providing an overview as complete as possible for each text, where the reference to the paper edition is still unavoidable, but a first digital foretaste of it is given (http://www.papyri.info/editor/publications/45620/ddb_identifiers/103498/preview). This is, in my opinion, an important step towards those "complete" digital editions of which a recent seminar held at the University of Heidelberg is producing the first examples: unpublished or just described papyri published entirely and directly online, with the possibility of applying further improvements or corrections in the same way (http://www.papyri.info/ddbdp/p.got;;29dgtl). Despite some scholars still see in the paper edition an essential scientific goal, online publication is in fact one of the most stimulating perspectives of digital papyrology and, in general, of the entire field of digital humanities, because it combines the old problem of the "digital critical edition", object of long-standing philological debates, with the dynamic and innovative view of an open-access and collaborative platform like the Papyrologycal Editor. Likely we will never go as far as declaring obsolete glorious paper tools like the *Berichtigungsliste* or the *Sammelbuch*, but in projects just like the CPGM new spaces can open for entirely online, open-access, dynamic and interactive new textual editions.

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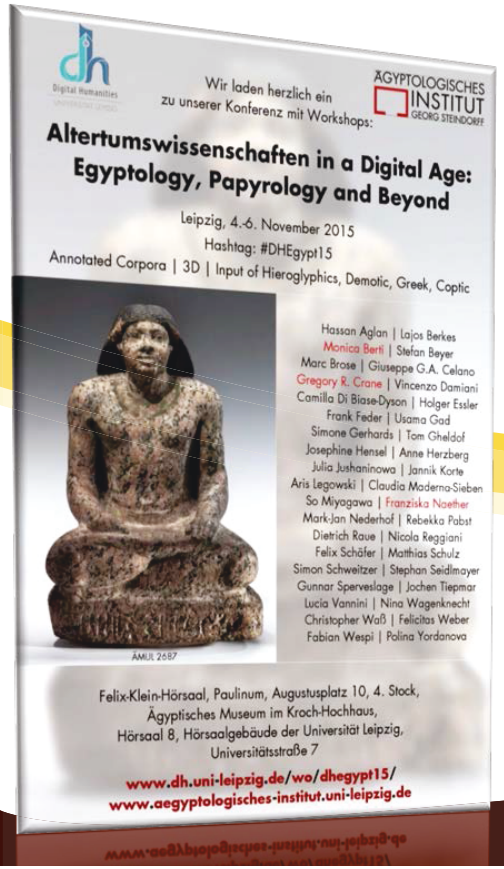
[the Corpus of Greek Medical Papyri and Digital Papyrology: new perspectives from an ongoing project]



[Nicola Reggiani]

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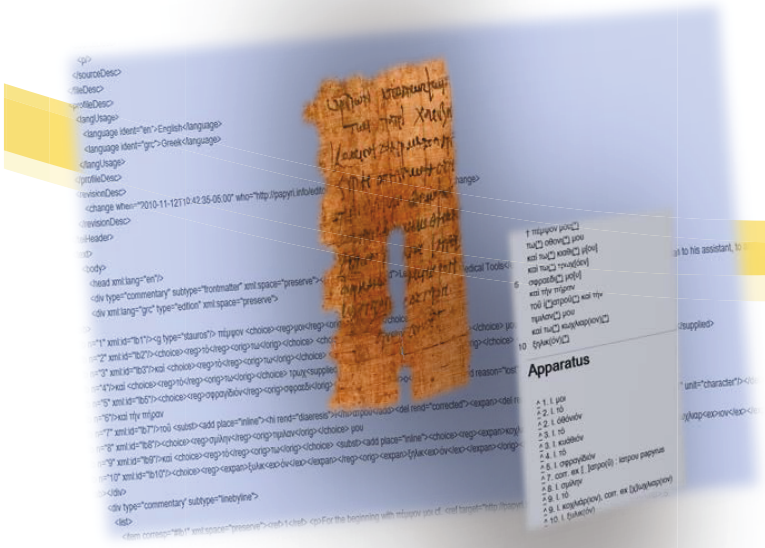
Digitising medical papyri

The digital encoding of medical papyri raises special problems, due to their particular nature of technical/professional («paraliterary») texts.



N. Reggiani

A Corpus of Literary Papyri Online: the Pilot Project of the Medical Texts via SoSOL

"Antike Lebenswelten Althistorische und papyrologische Studien", hrsgg. R. Lafer und K. Strobel, Berlin-New York, De Grutyer, 2015, 341-352.

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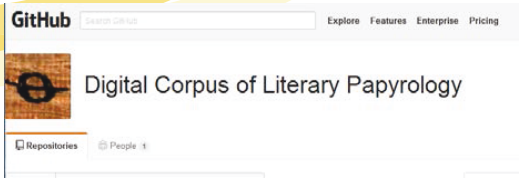
Existing platforms and new needs

The Papyrological Editor:
designed for documentary papyri

- A selected set of TEI/EpiDoc features translated into Leiden+ markup
- Metadata from the HGV (later also Trismegistos)

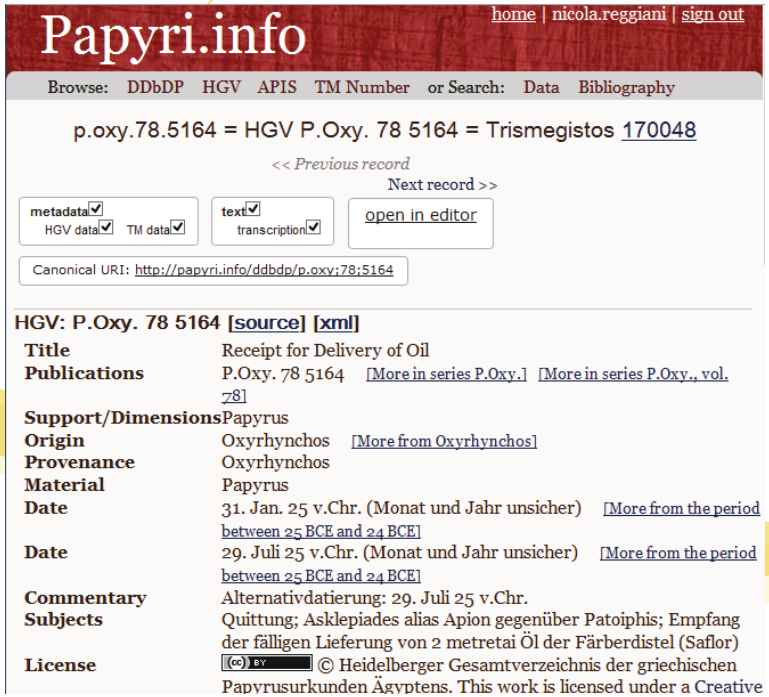
- Encoding paratextual features (diacriticals, punctuation, marginalia, layout, etc.)
- Metadata from the LDAB
- Further philological issues (variants etc.)

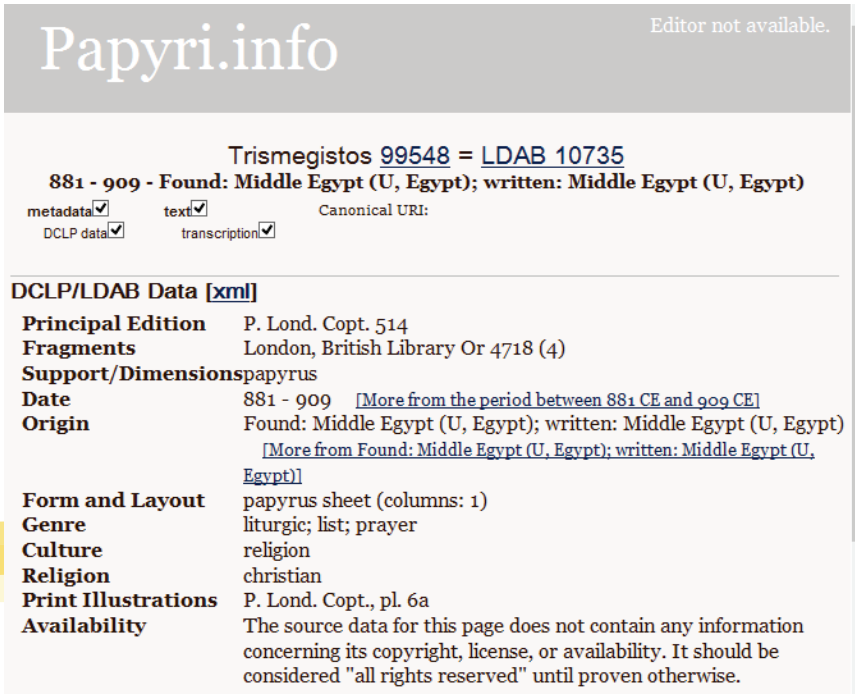


The Digital Corpus of Literary Papyri project

URL: http://nbn-resolving.de/urn:nbn:de:bsz:15-qucosa-201726

Existing platforms and new needs





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Multi-layer linguistic annotation

A basic part-of-speech annotation (treebanking) allows extensive **lexical, phraseological (formulaic) and syntactic analyses** on the textual corpus, and might lead to pinpoint **styles and writing strategies** specific of medical texts, or to find **influences and interpolations** of various types.

Problems: how to integrate in Papyri.info?

how to annotate broken tokens (non-supplied words, words with multiple alternatives)?

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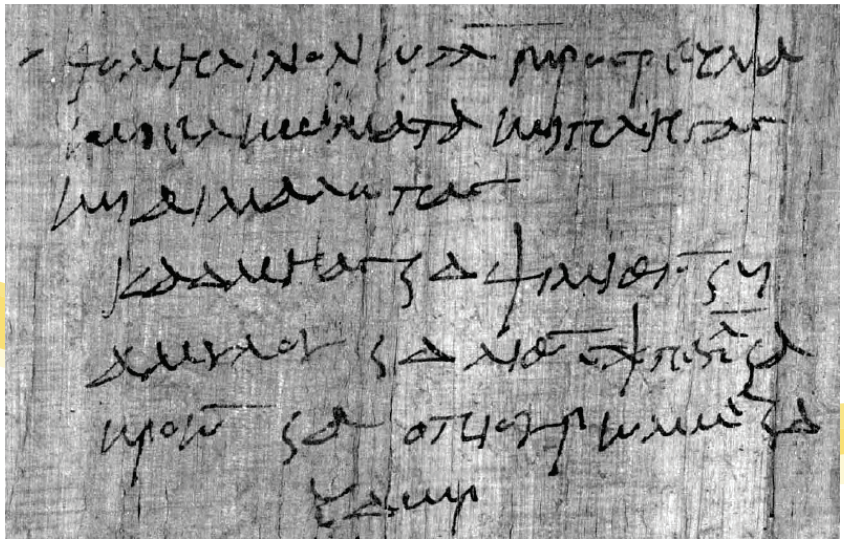
Multi-layer linguistic annotation

P.Oxy. VIII 1088, i, 1-5, *recipe from receptarium*, I cent. AD *ex.*



τὸ μήλινον κολλ(ύριον)· πρὸς ῥεῦμα
καὶ ἑλκώματα καὶ πληγὰς
καὶ αἱμάλωπας·
καδμήας ⸗ δ ψιμιθίο(υ) ⸗ η
ἀμύλου ⸗ δ λίθ(ου) σχι(στοῦ) πεπλ(υμέ-
νου) ⸗ α
κρόκο(υ) ⸗ α ὀπίου ⸗ κόμμε(ως) ⸗ δ
ὕδωρ.

Yellow-coloured salve: for discharges, wounds, bruises, and weals: calamine 4 drs., white lead 8 drs., starch 4 drs., purified schist 1 dr., saffron 1 dr., opium 3 obols, gum 4 drs., water.

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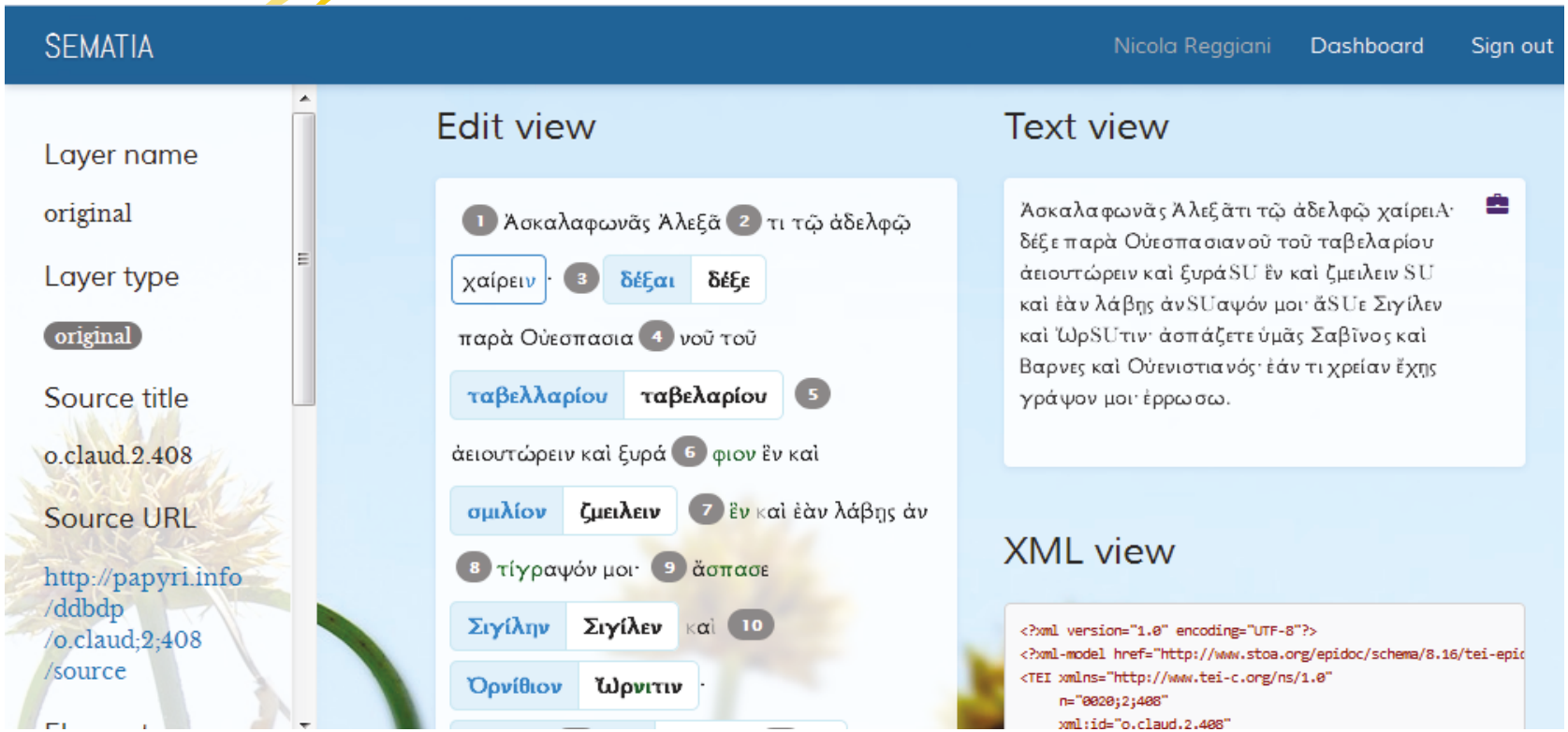

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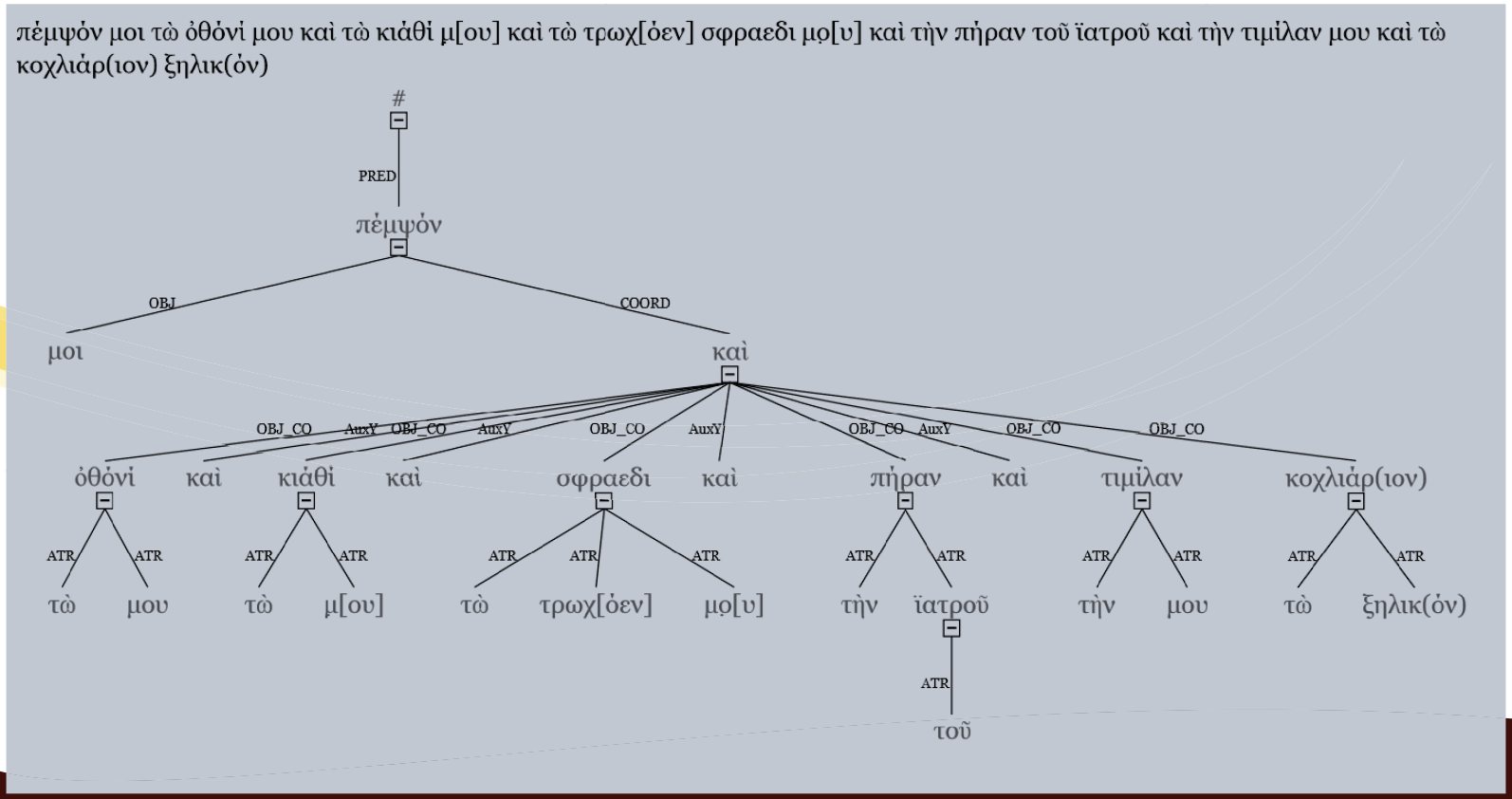
Multi-layer linguistic annotation

Sample treebanking of GMP II 10



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Annotation of linguistic variants

Morphological, syntactic, lexical, phonological, orthographic «regularisations» currently available in the PE as «corrections»

† πέμψον μου(*)
τω(*) οθονι(*) μου
καὶ τω(*) κιαθι(*) μ[ου]
καὶ τω(*) τρωχ[όεν]
σφραεδι(*) μο[υ]
καὶ τὴν πήραν
τοῦ ἰ(*)ατροῦ(*) καὶ τὴν
τιμιλαν(*) μου
καὶ τω(*) κωχλιαρ(ιον)(*)
ξηλικ(όν)(*)

Apparatus

^ 1. l. μοι
^ 2. l. τὸ
^ 2. l. ὀθόνιόν
^ 3. l. τὸ
^ 3. l. κυάθιόν
^ 4. l. τὸ
^ 5. l. σφραγίδιόν
^ 7. corr. ex [ ]ατρο(ῦ) : ἴατρου papyrus
^ 8. l. σμίλην
^ 9. l. τὸ
^ 9. l. κοχλιάρ(ιον), corr. ex [χ]ωχλιαρ(ιον)
^ 10. l. ξυλικ(όν)

```
<lb n="1" xml:id="lb1"/><g type="stauros"/> πέμψον <choice><reg>μοι</r
<lb n="2" xml:id="lb2"/><choice><reg>τὸ</reg><orig>τω</orig></choice>
<lb n="3" xml:id="lb3"/>καὶ <choice><reg>τὸ</reg><orig>τω</orig></choi
<lb n="4"/>καὶ <choice><reg>τὸ</reg><orig>τω</orig></choice> τρωχ<su
<lb n="5" xml:id="lb5"/><choice><reg>σφραγίδιόν</reg><orig>σφραεδι</
<lb n="6"/>καὶ τὴν πήραν
<lb n="7" xml:id="lb7"/>τοῦ <subst><add place="inline"><hi rend="diaeres
<lb n="8" xml:id="lb8"/><choice><reg>σμίλην</reg><orig>τιμιλαν</orig>
<lb n="9" xml:id="lb9"/>καὶ <choice><reg>τὸ</reg><orig>τω</orig></choi
<lb n="10" xml:id="lb10"/><choice><reg><expan>ξυλικ<ex>όν</ex></exp
</ab></div>
```

The Trismegistos database of text irregularities
[http://www.trismegistos.org/textirregularities]
M. Depauw, J. Stolk, *Linguistic Variation in Greek Papyri: Towards a New Tool for Quantitative Study*, GRBS 55 (2015), 196-220

The SEMATIA project (M. Vierros)
[http://sematia.hum.helsinki.fi]

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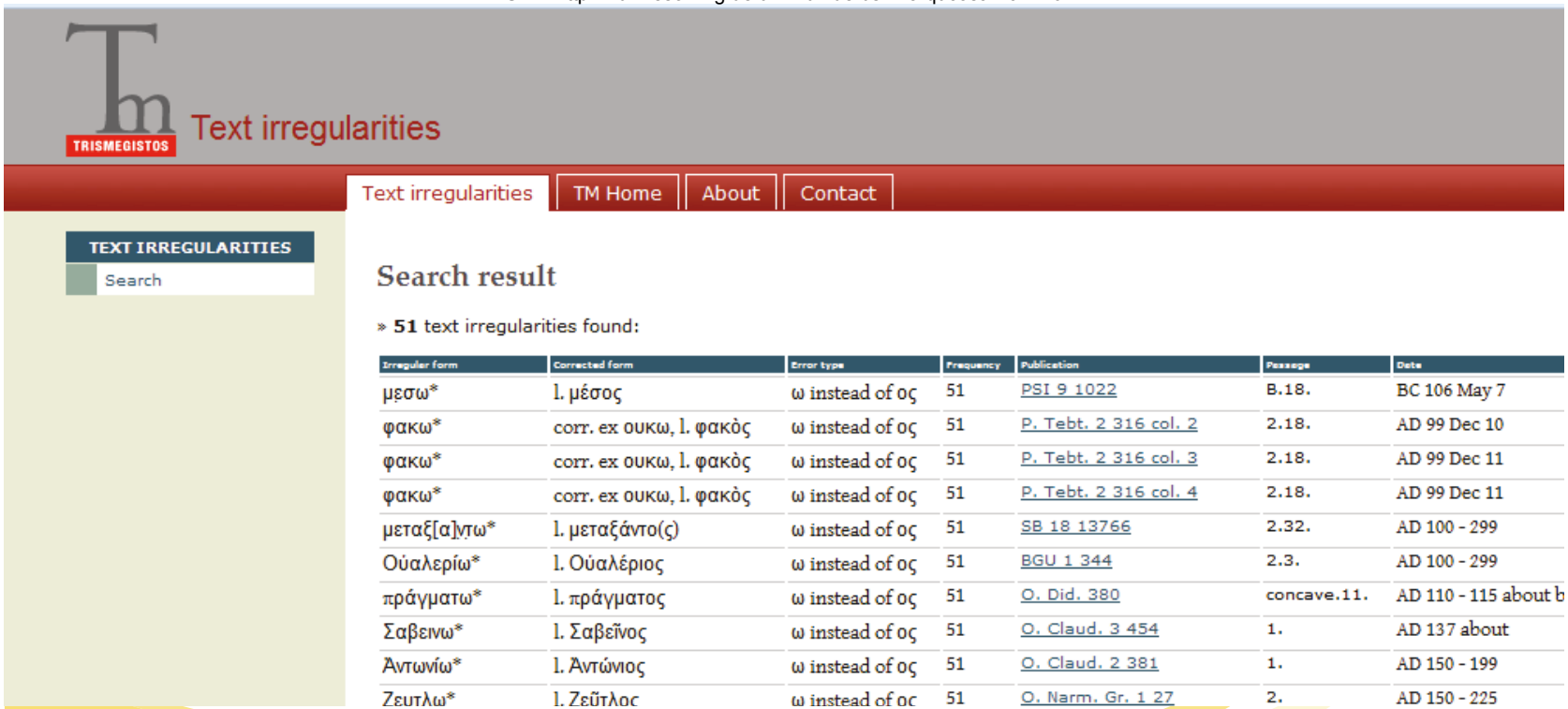

M. Depauw, J. Stolk, *Linguistic Variation in Greek Papyri: Towards a New Tool for Quantitative Study*, GRBS 55 (2015), 196-220

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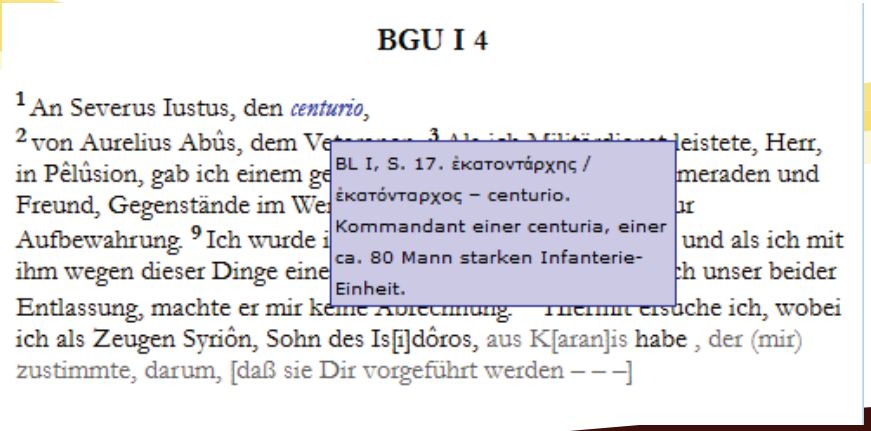
Lemmatisation and the technical terms

Annotating lemmas might allow an extensive interconnection with lexical repositories like the Medicalia Online lexicon. The PN used to provide a basic «lexical tool» with simple explanations of technical terms.



BGU I 4

[1] An Severus Iustus, den *centurio*,
[2] von Aurelius Abûs, dem Ve[3] leistete, Herr,
in Pêlûsion, gab ich einem ge meraden und
Freund, Gegenstände im We ur
Aufbewahrung. [9] Ich wurde i und als ich mit
ihm wegen dieser Dinge eine ch unser beider
Entlassung, machte er mir keine Abrechnung. Hiermit ersuche ich, wobei
ich als Zeugen Syriôn, Sohn des Is[i]dôros, aus K[aran]is habe , der (mir)
zustimmte, darum, [daß sie Dir vorgeführt werden – – –]

BL I, S. 17. ἑκατοντάρχης / ἑκατόνταρχος – centurio. Kommandant einer centuria, einer ca. 80 Mann starken Infanterie-Einheit.

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A very tentative example of annotation of a medical papyrus: GMP II 10.

ID = *Identifier*; **T** = *Tokenization*; **PoS** = *Part of Speech*; **H** = *Syntactic head*; **R** = *Syntactic relation* [**H** + **R** + **ID** = *Syntactical annotation*]; **N** = *Normalization*; **E** = *Kinds of errors* [VE = vowel exchange; BD = broken diminutive; ML = missing letter; EC = error corrected; CE = consonant exchange]; **L** = *Lemmatization*; **TT** = *Technical terms*; **A** = *Abbreviations*; **M** = *(Dia)critical marks and punctuation* [The other levels of annotation do not apply to this instance. Note that PoS and syntactical taggings are simplified for reason of space]. I am very grateful to Dr. Giuseppe G.A. Celano for his essential help in the grammatical/linguistic annotation.

ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14
T	πέμψόν	μοι	τὼ	ὀθόνί	μου	καὶ	τὼ	κιάθί	μ[ου]	καὶ	τὼ	τρωχ[όεν]	σφραεδι	μο[υ]
PoS	verb	pron.	art.	noun	pron.	conj.	art.	noun	pron.	conj.	art.	adj.	noun	pron.
H	0	24	4	24	4	24	8	24	8	24	13	13	24	13
R	PRED	ATR	ATR	OBJ_CO	ATR	AuxY	ATR	OBJ_CO	ATR	AuxY	ATR	ATR	OBJ_CO	ATR
N			τὸ	ὀθόνιόν			τὸ	κυάθιον			τὸ		σφραγίδιόν	
E			VE	BD			VE	VE+BD			VE		AS+VE+ BD	
L				ὀθόνιον				κύαθος					σφραγίς	
TT				instrument				container					instrument	
A														
M														

ID	15	16	17	18	19	20	21	22	23	24	25	26	27
T	καὶ	τὴν	πήραν	τοῦ	[.]ἰατροῦ	καὶ	τὴν	τιμίλαν	μου	καὶ	τὼ	[χ]κοχλιάρ/(ιον)	ξηλικ/(όν)
PoS	conj.	art.	noun	art.	noun	conj.	art.	noun	pron.	conj.	art.	noun	adj.
H	24	17	24	19	17	24	22	24	22	1	26	24	26
R	AuxY	ATR	OBJ_CO	ATR	ATR	AuxY	ATR	OBJ_CO	ATR	AuxY	ATR	OBJ_CO	ATR
N				τοῦ	ἰατροῦ			σμίλην			τὸ	κοχλιάριον	ξυλικόν
E					EC(?)			CE+ML+VE			VE	EC(CE)	VE
L			πήρα		ἰατρός			σμίλη				κοχλιάριον	
TT			instrument		gen.term			surgery				container	
A				superscr.	superscr.							slanting stroke	slant.stroke
M					diaeresis								

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Transtextuality and the fragments

The papyrus fragment is a sort of «**accidental quotation**» the transtextual network of which is included between a «hypertext» (the original document) and a «hypotext» (the actual scrap). From this viewpoint it is possible to think of the digital edition as a **multitext**, in which the textual variants (even unattested in the manuscript tradition) are not to be subordinated to a «normal» version, but parts of a dynamic network.

M. Berti, *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)*, c. V. Costa, 2012, 439-458.

M. Berti, *Fragmentary Texts and Digital Libraries*, in *Philology in the Age of Corpus and Computational Linguistics*, eds. G. Crane, A. Lüdeling, M. Berti, CHS Publication, forthcoming.

M. Berti, M. Romanello, A. Babeu, G. Crane, *Collecting Fragmentary Authors in a Digital Library*, in *Proceedings of the 2009 Joint International Conference on Digital Libraries (Austin, TX)*, New York 2009, 259-262.

M. Berti, M. Romanello, F. Boschetti, A. Babeu, G. Crane, *Rethinking Critical Editions of Fragmentary Texts by Ontologies*, in *Proceedings of 13th International Conference on Electronic Publishing: Rethinking Electronic Publishing: Innovation in Communication Paradigms and Technologies (Milan)*, Milano 2009, 155-174.

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P.Aberd. 124 = GMP I 2, Hp. *De fracturis*, II cent. AD

column i

-- -- -- -- -- -- -- -- -- -- --

1 [-ca.?- ἐπὶ τῷ μεγέ]θε̣[ι] (*)
[ἢ τὸ τοῦ βραχίονο]ς κ̣α̣ὶ δ̣ι-
[καίην φύσιν μο]ῦ̣νον ἔχο[ν]
[καὶ ταύτην περιφ]ε̣ρέα· τὸ δὲ
5 [βραχίονος ἄρθρον] (*) μέγα τε
[καὶ βαθμίδας πλε]ί̣ονας ἔχον.
[πρὸς δὲ τούτοις τὰ] μὲν τ̣ῆ̣ς
[κνήμης ὀστέα παραπ]λ̣ήσια μή-
[κος ἐστι καὶ σμικρό]ν̣ τι (*) οὐκ
10 [ἄξιον λόγου τὸ] ἔξω ὀ̣στέον ὑ-
[περέχει οὐδενὸ]ς̣ μ̣ε̣γ̣άλου κω-
[-ca.?-] . . ου (*) πέφυκεν
[ὁ ἔξω τένων ὁ π]α̣ρὰ τὴν ἰγνύ-
[ην· τὰ δὲ τοῦ π]ή̣χεως (*) ὀστέα
15 [ἀνισά ἐστι, καὶ] τὸ βραχύτερον (*)
[παχύτερον συχ]νῷ̣, τὸ δὲ λεπτό -

column ii

[τερον -ca.?-]
vac.ca.55 lines
[-ca.?- προσ-]
βά̣λ̣λ̣ο̣[ντα ὠθεῖν, τῇ δ' ἑτέρῃ]
ἀ̣ν̣τ̣ωθε̣[ῖν -ca.?-] (*)
-- -- -- -- -- -- -- -- -- --

Variant reading

Text divergent from codd.

Dialect: koine

Apparatus

^ i.1. Hp. Fract. 37 (3.540.16 L); ἐπὶ μεγέθει Withington, LCL
^ i.4-5 τὸ δὲ τοῦ βραχίονος ἄρθρον μέγα codd., GalLemm. (613.7 K), edd.; τοῦ om. M (Paris. 2247) ap. Littré, et pap. spat. rat.
^ i.9. ἐστιν Kühl., σμικρόν τε Withington, LCL
^ i.11-12. or κώ|[λυμα ἐόν, ἀφ' ὁκ]ο̣ί̣ου, or κώ|[λυμα ἐόν, ἀπ' ἐκεί]νου GMP 1,1, [-ca.?-] ι̣ου prev. ed. : κώλυμα ἐόν, ἀφ' οὗ πέφυκεν codd., GalLemm. (618.12 K), edd.; GalComm. (619.5-6 K οὐδενὸς μεγάλου κωλύματος)
^ i.14. πήχεος codd., edd. (Ionic Greek); -χεως pap. (Koine Greek)
^ i.15. ἐστιν L, Kühl., Withington, LCL
^ ii.56-58. Hp. Fract. 39 (3.546.6-7 L)

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The digital edition

Though existing in the PE, the tools for creating introductions and commentaries are poorly used for the currently extant digitised papyri. Their regular use for the medical papyri might be a step towards true digital editions of unpublished texts.

URL: http://nbn-resolving.de/urn:nbn:de:bsz:15-qucosa-201726

http://www.papirologia.unipr.it/ERC

Digital Humanities
UNIVERSITÄT LEIPZIG

ÄGYPTOLOGISCHES INSTITUT GEORG STEINDORFF

Altertumswissenschaften in a Digital Age: Egyptology, Papyrology and Beyond

Leipzig, 4.-6. November 2015

Hashtag: #DHEgypt15

Annotated Corpora | 3D | Input of Hieroglyphics, Demotic, Greek, Coptic

ÄMUL 2687

Proceedings Dossier of the Conference and Workshop

Edited by Monica Berti and Franziska Naether

Leipzig 2016

Altertumswissenschaften in a Digital Age – Egyptology, Papyrology and Beyond. Proceedings of a Conference and Workshop in Leipzig, November 4-6, 2015

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8. Photos of the Venue by Monica Berti, Julia Jushaninowa and Franziska Naether

If you want to know more: Links

Check out what people tweeted and posted about and during the conference by searching after the hashtag "#DHEgypt15" on Twitter (https://twitter.com/) and Facebook (https://www.facebook.com/).

Institutional Homepages in Leipzig:

Digital Humanities: http://www.dh.uni-leipzig.de/wo/dhegypt15/
Egyptology: http://aegyptologisches-institut.uni-leipzig.de

Julia Jushaninowa's Blog Report about the conference:
http://www.dh.uni-leipzig.de/wo/news-announcements/

Editorial

By Monica Berti and Franziska Naether

Since the formation as academic disciplines around 200 years ago, Egyptology and Papyrology collected the vast materials from Egyptian excavations in large Zettelkästen, scholarly archives, and databases. No wonder egyptologists and papyrologists with their multitude of backgrounds in Classics, Ancient History, Archaeology etc. are on the spearhead of Digital Humanities.

In the last years, both subjects saw many projects cataloguing the sources such as papyri and their texts or visualizing architectural structures by the means of digital tools and applications. Development is driving fast, not only by groundbreaking research and infrastructure projects of scholars but also by the consumer industry launching new devices especially in the field of 3D and augmented/virtual reality. We as editors are sure 2016 will see many new developments. Therefore, it was our mission with this conference to bring together emerging young scholars and students, the Nachwuchswissenschaftler of our fields, together with more experienced researchers representing the top-notch digital projects. The vision of our conference and workshop was to cross the boundaries of Egyptology and Papyrology as disciplines which are both often acting separately because of the languages that are studied: While Egyptologists usually care for the Egyptian languages in Old, Middle and Late Egyptian written in Hieroglyphs and Hieratic plus the sub-fields of Ptolemaic, Demotic and Coptic studies, Papyrologists focus mainly on sources in Greek and Latin. But especially in Ptolemaic, Roman and Late Antique Egypt the openness for several languages is more important to fully understand the cultural heritage from the Nile. Therefore, we are very happy that both Egyptologists and Papyrologists followed our Call for Papers and invitations to present their current work and discuss it at "DHEgypt15" in Leipzig in November 2016. The scholars worked well together and identified common problems and strategies on how to move on in the field of digital humanities. And, moreover, the sites where the multilingual texts and multicultural artifacts are found often come from the same contexts.

Our aim was not simply to provide a forum for scholarly exchange and presentation of new projects, but to arrange it in a structured manner with four research areas which also form the four chapters of this dossier publication in lieu of "proceedings". We wanted to go a step further: to connect people, share sources, research questions and technical issues, discuss solution strategies and how to proceed as digital scholars to move on for the benefit of our field. Nowadays, project members often say that "we don't want to reinvent the wheel", but it is also difficult to keep track of all the developments in the scholarly environment and nobody could attend all the conferences in disciplines such as Egyptology and Papyrology that are international since their beginning. Many of you were not only interested in contents, but also in infrastructures and methodologies. A growing demand was voiced in the

communication of the finding to the public but also on how to train students and integrate digital techniques into academic curricula and syllabi.

Humanities, mostly "Kleine Fächer" (small institutes covering vast time spans and regions) with few faculty members, are constantly threatened by budget cuts and institute's closures. Careers in the field are rare, employment is characterized by a large number of short-term contracts and a high level of insecurity for the employees, should they finally be in the lucky position to secure for themselves a tenured job. To an increasing rate, the command of mark up languages or the ability to create a 3D model of a trench from an excavation is becoming important and might make the difference in an application process.

To a certain degree, we have already fulfilled our goal of connecting people and encouraging collaboration because by the time we are writing this editorial, some of you are already working together and tackling the issues such as shaping Unicode characters for non-alphabetic scripts like Hieroglyphic, Hieratic and Demotic, designing tools for their input and recognizing cursive palaeographies. We were also successful in encouraging further meetings. The two workshops and the final discussion were very fruitful in that matter, and we wish to thank all participants and the chairs for their great interest and contributions in the topics under discussion. Everybody who was not able to join us in Leipzig, and judging from the feedback we know there are many of you, is able to follow the discussion in the protocols. Two of you, Athena von der Pere and Rita Lucarelli, kindly accepted to additional papers.

This proceedings dossier contains the abstracts of the speaker presentations at the conference and the workshops. Given the great interest in the event showed by participants and by those who were unable to attend it, we opted for this open access publication in order to put at everyone's disposal what was presented and discussed in Leipzig. Since it would not make sense to publish a printed book with articles about projects in status nascendi, especially not in a field such as the Digital Humanities, participants were asked to hand in their presentations with updated notes and further explanation in their unique layouts. We are grateful for the smooth process in cooperation with the repository QUCOSA and Henriette Rösch and her staff at the Universitätsbibliothek Leipzig.

Our special thanks go to Gregory R. Crane, who supported our conference since the beginning, discussed the outline with us and provided the inspiring keynote speech. This venue would have been less multifaceted and sustainable without him and his vision of the "Big Humanities" which we actually are. Valuable input came also from Thomas Koentges, Uta Kremer, and Simona Stoyanova. The venue was made possible through generous funds from the Alexander von Humboldt Foundation and the man and especially womanpower from the two executing institutes (Lehrstuhl für Digital Humanities at the Institut für Informatik and Ägyptologisches Institut / Ägyptisches Museum -Georg Steindorff-). We could not have done this without the help of Sophia

Baron, Sylvia Frömmert, Sabine Kubisch and Annette Kunze as well as the many student volunteers. We are also very grateful to Kerstin Seidel and Dietrich Raue from the Egyptian Museum for enabling us an unforgettable reception on the first night after the inspiring evening lecture by Felix Schäfer. The biggest share, undoubtedly, was done by Julia Jushaninowa who not only pulled the strings while Monica Berti was on business trips and Franziska Naether at ISAW in New York but also co-presented two papers. Her blog article reviewing the event is the final contribution to this publication.

Digital Humanities is not just creating an elegant website or a cool 3D model – it is much more: it is new methodologies shared by researchers from different field. Ancient texts, artifacts and sites can be presented in multimedia narrations and embedded in broader contexts of cultural heritage. This opens up to communicate to the public our findings in deciphering papyri (or identifying ghost words) and linking stratigraphies within cultural heritage. In times of increased looting and antiquities trade, it is important to attribute value to a nation's treasures, not only in Egypt, and we strongly believe that education and citizen science are the keys to reach that goal.

But now: Enjoy the reading and browsing through the papers!

The editors

Leipzig and New York, in February 2016