The digital edition of ancient sources as a further step in the textual transmission

Nicola Reggiani

Ancient textual transmission is traditionally regarded with a philological approach, involving the reconstruction of a textual archetype (the 'source') among different variants. [1] Critical editions of ancient sources are usually considered as the final outcome of a philological process of reconstruction aimed at reproducing the original text as most exactly as possible. Thus, they are the fixed representation of a scholar's more or less trustable opinion on the text.

This view is being challenged as rather uncomfortable by the development of digital technologies in ancient studies, as well as by an increasing concern for the actual testimonies of the textual tradition and on their peculiar features (a 'phenomenological' approach, in a sense). Digital projects like the Homer Multitext Project or the Leipzig Open Fragmentary Texts Series start envisaging a different

approach to text analysis, involving a text that is in fact a multitext, a fluid and dynamic network of multiple editions interconnected to each other rather than a traditional fixed structure of text and apparatus criticus. [2]

Papyrology has always been facing an adventurous textual situation, coping with fragmentary texts and idiosyncratic utterances, being particularly interested in the scribal and material phenomenology of textual development, which affects consistency in treating the existing textual fluctuations. Traditionally, Papyrology is a philological discipline, focused on texts and their critical reconstruction, and this background has been inherited by the main papyrological database, the Duke Databank of Documentary Papyri now featured by the Papyri.info platform. The core text is encoded in an XML subset of EpiDoc, transcoded via a corpus-specific markup language called Leiden+, [3] but the human-readable HTML output closely resembles that of a traditional paper critical edition, as in the following specimen (PSI XV 1510, medical catechism on anatomy, III cent. AD—printed edition on the left, digital edition at <u>http://litpap.info/dclp/64024</u> on the right):

Left column:

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                ποῦ κεῖται τὰ [παρίσθμια;
                ἐξ ἑκατέρου μ[έρους τῆς γλώςςης καὶ ἄν-
    5           τικρυς ἀλλήλω[ν
                καὶ ἀντιάδες κ[
                ρευcαν καλει[
                cον κεῖται ιθμ[
                παρίcθμια πρ[
   10              πρ[ὸς τί
                ἵνα [
                  .]ε.[
                  _ _ _ _
```

8. ιθμ[: ῐ̈θμ[pap., l. ιcθμ[.
10. La ricostruzione πρ[ὸς τί è suggerita in nota nell'*ed. pr.*: "A che cosa (serve) … ?"; la risposta iniziava al rigo successivo.
11. ἵνα : ἔινα pap., da intendere verosimilmente come grafia itacistica per ἵνα, cioè appunto ἵνα. Era questo l'esordio ("Affinché…") della risposta alla domanda posta nel rigo precedente.

Right column:

```
    ταύτῃ ἡ τροφὴ [ -ca.?- ]
    κενεμβατεῖ ε[ἰς τὸν στόμαχον -ca.?- ]
        ποῦ κεῖται τὰ [παρίσθμια; -ca.?- ]
    vac.ca1lin.
    ἐξ ἑκατέρου μ[έρους τῆς γλώσσης καὶ ἄν-
  5 τικρυς ἀλλήλω[ν -ca.?- ]
    καὶ ἀντιάδες κ[ -ca.?- ](*) [ -ca.?- ]-
    ρεύσαν(*) καλει[ -ca.?- ]
    σον κεῖται ι(*)θμ[ -ca.?- ](*)
    παρίσθμια πρ[ -ca.?- ](*)
 10     πρ[ὸς τί -ca.?- ]
    ε(*)ίνα(*) [ -ca.?- ]
    [ . ]ε. [ -ca.?- ]
    – – – – – – – – – – –
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Apparatus

^ 6. or κ[έκληνται -ca.?-], or κ[αλοῦνται -ca.?-]
^ 6-7. or [-ca.?-]|ρεύσαν (l. [-ca.?-]|ρεύσαν)
^ 8. l. ι<σ>θμ[-ca.?-] : ῐ̈θμ[-ca.?-] papyrus
^ 9. or πο[-ca.?-]
^ 11. l. ἵνα : ἔινα papyrus

Diachronic fluctuations (linguistic change)

Typically, the standard level of the language of the papyri is a later manifestation of the ancient Greek language, the Hellenistic *Koine*. The example of the verbal forms of *gignomai*, which becomes *g(e)inomai* in the *Koine* Greek, will suffice. [5] The *Koine* forms are indeed treated as the standard in most of the papyrus editions, and therefore are never 'regularized' as variants, [6] but this is not always consistent: editorial regularizations do occur, seemingly only when the verb is affected also by iotacism, often in compounds. [7] On the other hand, we do find the classical Greek forms not being regularized as well, [8] which increases the uneasiness of anyone who would perform effective searches in the digital textual corpora. [9] With the further developments of the Greek language, the situation is even more complex: for example, the general shift from dative to genitive in the later (Byzantine) instances of the language of the papyri [10] leads to further editorial inconsistencies. In BGU XIII 2332, 20 (375 AD), for instance, ὑπάρχω + genitive (μου) is regularized in dative (μοι) according to the classical use, [11] whereas in SB XVIII 13947, 15 (507 AD) ὑπάρχω + dative (μοι) is regularized in genitive (μου) as

if the latter was then the correct form. [12]

Synchronic fluctuations (personal uses and regional substandards)

Recurring peculiarities in the language used by individuals or in certain geographical locations, even though diverging from what is assumed as the contemporary linguistic standard, should be regarded as actual substandards, pointing to interesting socio-cultural phenomena, so that 'regularizations' become almost senseless. [13] "Amyntas' weakness for *aphestalka*," [14] as C.C. Edgar called the habit of one of the individuals in the Zenon archive of writing an 'irregular' aspirated perfect form of ἀποστέλλω, is meaningful: this is a recurring personal use, the consistency of which assumes the flavour of a linguistic substandard in Trevor Evans' terms. [15] According to a pure 'philological' path, this 'irregularity' is normalized in all the papyrological occurrences (e.g. http://papyri.info/ddbdp /p.cair.zen;1;59047) except in P.Cair.Zen. III 59435, 3 + P.Cair.Zen. IV p. 289, where a more 'phenomenological' attitude seems to prevail (http://papyri.info/ddbdp/p.cair.zen;3;59435). [16]

Textual fluctuations in copies and duplicates

Papyri preserving the 'same' text in multiple copies [17] are traditionally treated in the 'philological' way, i.e. collated and merged in one source archetype: e.g. **http://papyri.info/ddbdp /p.tebt;3.1;771dupl** (note the suffix 'dupl' added to the URL of the

digital text, which advises about the existence of a duplicate of the papyrus). However, a certain degree of uneasiness is felt about such a practice:

> I disagree with this editorial choice for two reasons. First, in a field like papyrology, every copy of a text deserves full consideration and […] an archetype that would somehow be considered more authentic than a later copy is an editorial fancy. Copies of the same text, however similar, were written with a purpose in mind, so that edition should be more rather than less interesting. Second, in order to appreciate the fact that we have multiple copies […], we must ask why different versions of it exist in the first place. The interest of these documents is, therefore, not restricted to the text alone, but extends to the life and afterlife of its copies in relation to one another. In sum, the text of just one fragment does not make for a satisfactory edition of understanding of this [text]. By editing the texts in their own right, we learn about the convention of […] writing in [Graeco-Roman] Egypt. [18]

A new 'phenomenological' consideration of papyrus copies is emerging, [19] but, for now, the digital database is following the 'philological' practice, with a significant loss of information. This relates above all to the scribal practice, the ancient consideration of the documents as material products rather than immaterial texts, and the cognitive process that underlies the "act of the scribe," to exploit the title of the digital project at Helsinki which focuses on the role of the scribes and of their writing skills in the linguistic outcome of Greek papyri. [20] Any aspect related to the process of producing a written

document is a key to understand that texts are not fixed entities but evolving devices.

Textual fluctuations in literary and paraliterary papyri

Papyri bearing literary or 'paraliterary' texts (a somehow artificial category referring to technical texts, schoolbooks, practical manuals, and the like) raise further categories of issues. Beside the 'traditional' philological variants, which are usually treated as in the critical editions, we may find variants that are unattested in the manuscript tradition. In several cases, such variants subtend linguistic peculiarities typical of the language of the papyri, rather than outright transcription mistakes or other philological phenomena. In such cases, the philological approach is inconsistent as well. P.Aberd. 124, i = GMP I 2, i (II cent. AD), a papyrus fragment preserving chapter 37 of Hippocrates' treatise *De fracturis*, is quite a nice example. Here we find variants already attested in the manuscript tradition (ll. 4–5) but also passages completely divergent from the codices (ll. 11–12, where the length of the gap and the shape of the following traces exclude the unanimous manuscript tradition, which is of course printed in all the editions, in favor of a previously unattested variant). A third instance in the same text is even more interesting: at l. 14, where the codices (and the editions) have the 'regular' Ionic form πήχεος, the papyrus shows clearly π]ήχεως, the *Koine* form, which looks like an 'interference' of a typical 'linguistic variation' pertaining to the language of the documentary papyri (where, on the contrary, it

would be the standard form, as we saw earlier). Any 'traditional' treatment of this and similar cases would lead to editorial inconsistencies and to the loss of relevant information.

Scribal alternatives

Something more than the papyrus variants described above are the textual alternatives recorded by the ancient scribes of literary and paraliterary papyri, which attest to an ancient concern for textual criticism. An astounding case is offered by P.Tebt. II 272v (late II cent. AD, http://litpap.info/dclp/60048), preserving a fragment of Herodotus Medicus' *De Remediis* about the symptomatology of thirst. In the relevant point, the text on the papyrus is overlapped by an excerpt of Herodotus Medicus preserved with Orib. *Coll.Med.* V 30, 6–7 (CMG VI 1,1). Here, where the manuscript tradition and the papyrus itself unanimously read αἰτίαι τῆς προσφορᾶς, the ancient scribe added two groups of three letters between dots above the line: *τῶν* above τῆς, and *ρῶν* above ρᾶς, patently indicating an alternative reading. A critical edition cannot really choose a 'correct' version, since the ancient writer himself was aware of a certain fluctuation in the textual transmission. This is rather reasonable in fields like ancient medicine, where the relevant knowledge was transmitted mostly orally and, even when written down, depended so much on the actual practice and the individual experience (a similar case occurs in P.Oxy. LVI 3851, II–III cent. AD, http://litpap.info /dclp/61917: Nicander's *Theriaka*), and any 'philological' approach is hard, if not impossible. Let us consider, for instance, a case like P.Oxy. IX 1184, preserving a thematic selection of the pseudo-Hippocratean

epistles: not only is the papyrus influenced by contemporary epistolary conventions, which differ from the Medieval tradition (in terms of *iota mutum* adscript and iotacistic phenomena), but also does it convey some significant scribal alternatives. Indeed, *Epistle* 4 is transcribed twice: an abridged version of the 'standard' text in the main body of the papyrus is flanked by a shorter version without the introductory salutation, added in the right margin and separated from the previous one with a curved line. [21] Such a textual care is further apparent in P.Oslo III 72, 9 (medical treatise, II cent. AD, http://litpap.info/dclp/63583), where the ancient scribe left a blank *vacat* in a controversial point (according to the editors' interpretation).

Paratextual devices

Another striking aspect of this ancient textual care, especially in literary and paraliterary papyri, is the deployment of paratext to add meaning to the text. Layout devices such as line indentions/extensions (*eisthesis*, *ekthesis*) and graphical marks such as horizontal rules (*paragraphoi*, *diplai obelismenai*) or pointing signs (*diplai*) are used to articulate the written discourse (e.g., to separate prescriptions in a collection of recipes, or to highlight questions and answers in the catechistic handbooks) in order to clarify the content and to add semantic value to the text. While paper editions usually reproduce the ancient paratext in the printed text, digital editions have mostly neglected this aspect for a long time, and it is just now, thanks to the development of the Digital Corpus of Literary Papyrology (DCLP), that ways of encoding special signs and layout features is fully supported. [22]

Conclusions

The inadequacy of the traditional 'philological' approach to render all the features in full and in a meaningful way pinpointed above is apparent. On one hand, linguistic and textual variations frame socio-cultural environments that must be preserved in order to understand the complexity of ancient civilizations. On the other hand, a full set of textual (quotations, adaptations, additions, re-elaborations, comments, annotations, alternative readings…) and paratextual machineries is deployed by the ancient scribes to convey particular shades of meaningful knowledge, which we need to save for the sake of textual analysis and comprehension. Both cultural loads tend to be flattened by a traditional 'philological' edition, aimed at reconstructing a fixed archetype relegating all the possible variants in apparatus notes, depending on each editor's own opinions and choices. A challenge to this static stemmatological model is the "accretive model of composition" as defined by Ann Hanson to illustrate the textual development of ancient medical texts, [23] as well as the 'genetic criticism' focused on the process of textual composition. [24] Perhaps even more than multitextual editions, which simply juxtapose different redactions of the same text, such dynamic approaches seem to be the most suitable for representing, from the editorial viewpoint, complex cases such as the 'Michigan Medical Codex' (P.Mich. XVII 758, http://www.litpap.info/dclp/59332), a receptarium on a small-format papyrus codex, dated to the IV cent. AD, where the numerous prescriptions collected are divided by means of lines and indented headings, and where the ancient owner intervened with corrections

and marginal additions framed by graphical markers of different type. [25]

The printed medium is physically limited as to dealing with complex degrees of textuality, and adopted the critical edition model as a way of fixing a text for scholarly purposes. On the contrary, as we noted, ancient textual criticism was a way to pass down knowledge, i.e., a means of text transmission rather than text reconstruction and fixation. Nowadays, thanks to the digital tools, we do have the occasion to develop digital infrastructures in a hyper-dimensional cyberspace to overcome traditional criticism (and its shortcomings) and to conceive a digital critical edition with deeper and deeper levels of text analysis (markup tagging, linguistic or semantic annotation layers, in-text information), with a very similar outcome as the ancient textual criticism described above. It can be argued, therefore, that a digital (critical) edition can develop into something completely different from the somehow 'old-fashioned' printed critical edition: namely, a further step in the fluid textual transmission of ancient sources. [26]

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Footnotes

[back] **1.** The present contribution falls within the scopes of the PRIN 2017 project "Greek and Latin Literary Papyri from Graeco-Roman and Late Antique Fayum: Texts, Contexts, Readers" (P.I. Lucio Del Corso, University of Cassino), research unit at the University of Parma (coordinator Nicola Reggiani, http://www.papirologia.unipr.it/ricerca/prin2017.html).

[back] **2.** Cf. Reggiani 2017:255–270.

[back] **3.** Cf. Reggiani 2017:232–240 for details.

[back] **5.** Cf. Depauw–Stolk 2015.

[back] **6.** A quick survey of a sample search in Papyri.info can give a global idea of this trend: http://papyri.info/search?STRING1=%CE%B3%CE%B5%CE%B9%CE%BD%CE%BF%CE%BC&target1=TEXT&no_caps1=on&no_marks1=on&STRING2=NOT+%CE%B3%CE%B9%CE%B3%CE%BD%CE%BF&target2=TEXT&no_caps2=on&no_marks2=on.

[back] **7.** παραγ{ε}ινεται *l.* παραγίγνεται in BGU XVI 2651, 6; γείνεσθαι *l.* γίγνεσθαι in Chr.M. 172, i 15; καταγειν[ο]μ[αι] *l.* καταγίγνομαι in P.Bodl. I 17, i 9; παραγεινομαι *l.* παραγίγνομαι in P.Haun. II 22, 5; περιγεινομένων *l.* περιγιγνομένων in P.Stras. VIII 772 *passim.* Note the double possible regularization γίγνεσθαι or γενέσθαι advanced for γείνεσθαι in P.Col. X 280, 13.

[back] **8.** Another sample search: http://papyri.info/search?STRING1=%CE%B3%CE%B9%CE%B3%CE%BD%CE%BF%CE%BC&target1=TEXT&no_caps1=on&no_marks1=on.

[back] **9.** My own personal experience in the difficult search for a word featuring such a common phonetic variant as iotacism is discussed in Reggiani 2019a.

[back] **10.** Cf. Stolk 2015b.

[back] **11.** For more similar cases cf. Stolk 2015a:85 ff.; Stolk 2015c.

[back] **12.** Cf. Depauw–Stolk 2015:213. See also Stolk 2015a:93.

[back] **13.** Cf. Stolk 2018. For linguistic substandards in the (para)literary production of Greek medical papyri see Maravela–Reggiani forthcoming.

[back] **14.** Note to P.Cair.Zen. I 59047, 1.

[back] **15.** Evans 2010a, 2010b, and 2012.

[back] **16.** Another apparent 'phonetic deviation' which might in fact be a 'substandard' form is *osyptron* "mirror," which stands beside the 'standard' form *esoptron* in a consistent number of papyri. The case is discussed in Bonati–Reggiani 2019.

[back] **17.** For a catalogue of duplicates cf. Nielsen 2000.

[back] **18.** Stoop 2014:185. I thank very much Giuditta Mirizio for helpful hints about this topic.

[back] **19.** Cf. Yuen-Collingridge–Choat 2012, with interesting preliminary comments on textual differences between copies of the same document.

[back] **20.** Cf. https://blogs.helsinki.fi/actofscribe.

[back] **21.** Other striking features are an original editorial comment inserted between letters 4 and 5 (ll. 17–19); the occurrence of the

shorter version of Ep. 5 with certain variations; an unattested letter to Gorgias showing a strong coincidence with Ep. 6 addressed to Demetrius. See the digital edition by M. Moser at http://litpap.info /dclp/60175.

[back] **22.** Cf. Reggiani 2017:250; Reggiani 2019b; Reggiani 2019d; Reggiani 2020. On the DCLP see also Ast–Essler 2018.

[back] **23.** Hanson 1997.

[back] **24.** Cf. Cribiore 2019 for a papyrological application.

[back] **25.** Cf. Hanson 1997 and Andorlini 2003 (with more cases of additions of annotations and comments).

[back] **26.** For further thoughts on the digital edition of papyri cf. Reggiani 2017:255 and 2018. On linguistic annotation of papyri see also Vierros 2018.

[back] **27.** 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].

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