Plan Overview

A Data Management Plan created using DMPonline

Title: GraphAnto

Creator: Sergio Basso

Affiliation: Other

Funder: European Commission

Template: Flemish Minimal DMP standard

Project abstract:

Introduction

Vita Antonii "The Life of Anthony", second half of the 4th c. CE, henceforth*VAnt*) recounts the progressively stricter eremitic seclusion of □□□□ □□□□□□, Anthony from Coma, destined to become a paradigmatic figure for both Eastern and Western monasticism. It enjoyed an immediate success, and it is the first account of the life of a saint, setting up a reference that has shaped all the future hagiographic works, in a captivating mix of sanctity and folklore.

The standard reconstruction maintains that Athanasius of Alexandria was the author of an original Greek *Life* which promptly influenced a Coptic and a Syriac version. We have also Latin, Arabic, and Georgian versions (Bartelink 1994; Garitte 1949; Mohrmann and Bartelink 1974).

State of the Art

However, recently Leslie Barnard has successfully questioned Athanasius's authorship (Barnard 1993) and René Draguet demonstrated that the Syriac version is not only earlier than the Greek one, but also that it displays many Copticizing forms, suggesting that the original of this hagiographic work was Coptic (Draguet 1980), and that the Greek version was dispatched as by Athanasius for boosting Antony's figure by an illustrious sponsorship.

VAnt is the first hagiographic narrative.

Studying the relationship among its Greek, Syriac, Coptic and Latin versions means entering the storyteller's laboratory and understanding his strategies with his target audience: how did the narration change according to the community that was supposed to receive it?

It is not easy to map the relationships between one version and another; they are not one the mechanic and slavish translation from another. there are parallels as there are differences: it is not possible to compare them in a synoptic way, and it is not easy to create a complete map of correspondences. Computational linguistics comes to the aid of the philologist with graph theory, a new tool in Digital Humanities for finding and visualizing the relationship of the textual variants (Moretti 2005), which allows these relationships to be traced and then automatically displayed, facilitating the philologist's subsequent subsumption work.

Graph application to literature has proved fruitful but it has never been applied to classical or medieval literature so far.

How are these versions related among them? How did this story percolate from Egypt to Syria and to the Latin Mediterranean? Exploring these relationships allows us to understand the mechanisms of formation of needle-graphic narrative corpus in the early Christian phase.

Ultimately, studying these relationships also helps understanding the present, because this research project aims to investigate the universals of cross-culturality, such as how stories are

manipulated to let cultures meet.

Beyond the State of the Art

The applicant's approach envisages *VAnt* as an example of those Late Antique and medieval texts that Pasquali labelled as "open texts", i.e., whose authors are anonymous and whose content is open to integrations, expansions, interpolations. and not firmly structured. The analysis of textual transmission of texts like these cannot follow the same rules as standard philology, the so-called Lachmannian *stemma codicum*. The applicant will propose an alternative explanation theory, the "**Karussell-Modell**", so called in reference and in opposition to the Baum-Modell, since it takes into due consideration the carousel-like diffusion of stories, dramatically different from the model of the genealogical transmission of manuscripts (Basso 2020). In fact, stories, unlike closed texts, continued travelling in a spiral-like movement, like the shuttle of a loom, along the cultural highways of the Late Antique world, from Egypt to Syria and Italy, and back once more, in a sort of narrative *Rückwanderung*. Such East-West interplay was at the origin of the*VAnt*.

The applicant will adopt an**intersectional approach**, applying both Graph theory and the LERA software (developed by Marcus Pöckelmann at Martin-Luther-Universität Halle-Wittenberg).

Graph theory is one of the most valuable contributions of mathematics into literary theory as well as to the studies of myth and folklore. Graphs are mathematical structures used to model pairwise relations between objects. They connect segments of texts as thought they were neuronal links.

An early example of graphs applied to literature was Pierre Maranda's structuralist chapter "Cendrillon: Théorie des graphes et des ensembles" (Maranda 1973). It was soon followed by L. O'Tool's paper offering an analysis of the structure and "semiotic space" in *The Book of Genesis* and "Eveline", a section of James Joyce's*Dubliners* (O'Toole 1980).

As for Lera, it was used (without Graph theory) for the applicationHypermachiavel (developed by Séverine Gedzelman at École Normale Supérieure de Lyon) and for the HyperAzpilcueta project developed by Manuela Bragagnolo at Max Planck Institute. It is the first time that LERA is applied to a Late Antique text. The applicant has already been granted the use of the beta-software for this project.

Objectives

Graphs will pinpoint parallelisms between the segments of the story in different versions, in a visually clear way. They will also suggest to scholars the original cores of the plot and the manipulation, i.e., the narrative engineering, that forged the diverse versions. In this way, graphs will help the applicant to investigate the different target audiences and the different purposes of each text.

graphs will allow the results to be measurable; verifiable (by a focus group of users philologists, WP???) and explorable at different levels of **granularity**. We could mention 5 advantages for graph visualizations:

Reduction of data complexity: the user can visualize only selected dimensions of the network, so that can gain a good first, overview impression on selected dimensions of the network and reduce the initial cognitive load (Shneiderman 2003, Joseph et al. 2021); e.g., the user will select the network "visions" and see the map of all of Antony's hallucination in all versions, at a glance;

incremental increase of complexity: users can blend in further data dimensions or adding further views step by step and on demand (Sarrafzadeh and Lank 2017); e.g., the user can explore the network "exorcisms" with the further label "teenagers" and see the map of all the exorcisms performed by Antony on adolescent patients;

Figure 1. Graph granularity

multiple coordinated views: multidimensional graphs can be visualized as multiple juxtaposed views of different data dimensions (e.g., Ge et al. 2016); e.g., the user can combine the filters “exoricisms” and “visions” and limit the map to the Coptic and Syriac version only;

coherence techniques: a central characteristic of a mental model is its coherence, i.e. how well the information elements are related and allow for reasoning and inferences (Chou and Tversky 2020);

visual storytelling: the sequential chaining of information (just like in stories) offers another relevant sensemaking and reasoning technique: by visually walking users through a graph, they build up a (narrative) mental model which establishes narrative and causal relations between selected pieces of information (Battad, White, and Si 2019). A good example is the ongoing H2020 project InTaVia (2020-2023, https://intavia.eu).

As an implementation of these two last factors, the applicant proposes the use of **virtual reality** as a visual coherence + visual storytelling technique (see more on that in the section “Communication and dissemination strategy”)

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Copyright information:

GraphAnto

Data description

Will you generate/collect new data and/or make use of existing data?

I will generate new data

Describe the origin, type and format of the data (per dataset) and its (estimated) volume.

origin, type, format: Gephi project and spreadsheet
estimated volume: 4 gigas

Ethical and legal issues

Will you use personal data? If so, shortly describe the kind of personal data you will use AND add the reference to your file in your host institution’s privacy register.

No, I will not use personal data.

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? If so, add the reference to the formal approval by the relevant ethical review committee(s).

There are no ethical issues concerning the creation and/or use of the data.

Does your work possibly result in research data with potential for tech transfer and valorisation? Will IP restrictions be claimed for the data you created? If so, for what data, and which restrictions will be asserted?

My work will possibly result in research data with potential for tech transfer and valorisation.
No IP restrictions will be claimed for the data I will create.

Do existing 3rd party agreements restrict dissemination or exploitation of the data you (re)use? If so, to what data do they relate and what restrictions are in place?

No existing 3rd party agreements restrict dissemination or exploitation of the data I use.

Documentation and metadata

What documentation will be provided to enable understanding and reuse of the data collected/generated in this project?

Question not answered.

Will a metadata standard be used? If so, describe in detail which standard will be used. If not, state in detail which metadata will be created to make the data easy/easier to find and reuse.

Question not answered.

Data storage & backup during the research project

Where will the data be stored?

online on a NAS server

How will the data be backed up?

offline on a external hard disk

Is there currently sufficient storage & backup capacity during the project? If yes, specify concisely. If no or insufficient storage or backup capacities are available, then explain how this will be taken care of.

Yes, we have a 12-terabyte NAS server.

What are the expected costs for data storage and backup during the project? How will these costs be covered?

No further expected costs for data storage and backup during the project are expected.

Data security: how will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

Data will be encrypted on a NAS server that needs password-access.

Data preservation after the end of the research project

Which data will be retained for the expected 5-year period after the end of the project? In case only a selection of the data can/will be preserved, clearly state the reasons for this (legal or contractual restrictions, physical preservation issues...)

All data will be retained for the expected 5-year period after the end of the project

Where will these data be archived (= stored for the long term)?

In an offline external hard disk, backed up on annual basis.

What are the expected costs for data preservation during these 5 years? How will the costs be covered?

350 euros fort a 4-terabyte external SSD, from the researcher's budget.

Data sharing and reuse

Are there any factors restricting or preventing the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)?

Question not answered.

If no, please specify

Question not answered.

Which data will be made available after the end of the project?

Question not answered.

Where/how will the data be made available for reuse?

Question not answered.

Will a DOI be registered for each of the datasets that are appropriate for public disclosure?

Question not answered.

When will the data be made available?

Question not answered.

Who will be able to access the data and under what conditions?

Question not answered.

What are the expected costs for data sharing? How will these costs be covered?

Question not answered.

Responsibilities

Who will be responsible for the data documentation & metadata?

myself

Who will be responsible for data storage & backup during the project?

myself