Introduction

Many recent international publications and initiatives show that *philology* is enjoying a "renaissance" within scholarship and teaching. The digital revolution of the last decades has been playing a significant role in revitalizing this traditional discipline and emphasizing its original scope, which is "making sense of texts and languages". This book describes the state of the art of digital philology with a focus on ancient Greek and Latin, the classical languages of Western culture. The invitation to publish the volume in the series *Age of Access? Grundfragen der Informationsgesellschaft* has offered the opportunity to present current trends in digital classical philology and discuss their future prospects.

The first goal of the book is to describe how Greek and Latin textual data is accessible today and how it should be linked, processed, and edited in order to produce and preserve meaningful information about classical antiquity. Contributors present and discuss many different topics: Open data of Greek and Latin sources, the role of libraries in building digital catalogs and developing machine-readable citation systems, the digitization of classical texts, computer-aided processing of classical languages, digital critical analysis and textual transmission of ancient works, and finally morpho-syntactic annotation and lexical resources of Greek and Latin data with a discussion that pertains to both philology and linguistics.

The selection of these topics has been guided by challenges and needs that concern the treatment of Greek and Latin textuality in the digital age. These challenges and needs include and go beyond the aim of traditional philology, which is the production of critical editions that reconstruct and represent the transmission of ancient sources. This is the reason why the book collects contributions about technical and practical aspects that relate not only to the digitization, representation, encoding and analysis of Greek and Latin textual data, but also to topics such as sustainability and funding that permit scholars to establish and maintain projects in this field. These aspects are now urgent and should be always addressed in order to make possible the preservation of the classical heritage. Many other topics could have been added to the discussion, but we hope that this book offers a synthesis to describe an emergent field for a new generation of scholars and students, explaining what is reachable and analyzable that was not before in terms of technology and accessibility. The book aims at bringing digital classical philology to an audience that is composed not only of Classicists, but also of researchers and students from many other fields in the humanities and computer science. Contributions in the volume are arranged in the following five sections:

Open data of Greek and Latin sources

This section presents cataloging and publishing activities of two leading open access corpora of Greek and Latin sources: the Free First Thousand Years of Greek of the Harvard's Center for Hellenic Studies that is now part of the Open Greek and Latin Project of the University of Leipzig, and the Digital Latin Library of the University of Oklahoma. The third paper describes principles and best practices for publishing and sustaining Linked Ancient World Data and its complexities.

Cataloging and citing Greek and Latin authors and works

The first paper of this section describes the history of the Perseus Catalog and its use of open metadata standards for bibliographic data. The other two papers describe digital library architectures developed for addressing citations of classical scholary editions in a digital environment. The first contribution describes CITE (Collections, Indices, Texts, and Extensions), which is a digital library architecture originally developed for the Homer Multitext Project for addressing identification, retrieval, manipulation, and integration of data by means of machine-actionable canonical citation. The second contribution presents an implementation of the Canonical Text Services (CTS) protocol developed at the University of Leipzig for citing and retrieving passages of texts in classical and other languages.

Data Entry, collection, and analysis for classical philology

The four papers of this section discuss practical issues about the creation and presentation of digital Greek and Latin text data. The first paper explains the technology behind recent improvements in optical character recognition and how it can be attuned to produce highly accurate texts of scholarly value, especially when dealing with difficult scripts like ancient Greek. The second paper presents an overview of character encoding systems for the input, interchange, processing and display of classical texts with particular reference to ancient Greek. The third paper introduces the Classical Language Toolkit that addresses the desideratum of a complete text analysis pipeline for Greek and Latin and other historical languages. The fourth paper addresses the phenomenon of viral intertextuality and demonstrates how current digital methods make its instances much easier to detect.

Critical editing and annotating Greek and Latin sources

The four papers of this section present different topics concerning critical editions and annotations of classical texts. The first paper describes current challenges and opportunities for the critical apparatus in a digital environment. The second paper gives a short description of the software tool e-Comparatio developed at the University of Leipzig and originally intended as a tool for the comparison of different text editions. The third paper describes the Homer Multitext Project and its principles of access within the long history of the Homeric epics in the centuries through the digital age. The fourth paper describes how the digital revolution is changing the way scholars access, analyze, and represent historical fragmentary texts, with a focus on traces of quotations and text reuses of ancient Greek and Latin sources.

Linguistic annotation and lexical databases for Greek and Latin

This section collects papers about morpho-syntactic annotation and lexical resources of Greek and Latin data. The first paper is an introduction to the dependency treebanks currently available for ancient Greek and Latin. The second paper is a description of the Index Thomisticus Treebank based on the corpus of the Index Thomisticus by father Roberto Busa, which is currently the largest Latin treebank available. The third paper investigates methods, resources, and tools for semantic analysis and thematic annotation of Greek and Latin with a particular focus on lexico-semantic resources (Latin WordNet and Ancient Greek WordNet) and the semantic and thematic annotation of classical texts (Memorata Poetis Project and Euporia).

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