BIBLICAL TEXTS IN DIGITALIZATION

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SOHAM AL-SUADI UND GOTLIND ULSHÖFER (HRSG.)

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Towards Critical Digital Biblical Studies

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I
EINLEITUNG

CRITICAL DIGITAL BIBLICAL STUDIES – CONSIDERATIONS FOR A NEW APPROACH CONCERNING DIGITALIZATION AND BIBLICAL TEXTS

SOHAM AL-SUADI/GOTLIND ULSHÖFER

DIGITALIZATION AND ITS INFLUENCE ON THEOLOGICAL RESEARCH OF BIBLICAL TEXTS

The fast pace of digitalization has become increasingly important in academic life. Digitalization as the ubiquious use of computers and smart devices nearly anywhere, the use of internet as well as the algorithmic and technical processes of and the creating, sharing, storing and altering text, pictures and other data, has become a foundational part of living, studying and researching. Libraries grant access to databases of international specialized and research literature and software enables the study and evaluation of digitized old texts and manuscripts as well as biblical texts in a new form. While digitalization on the one hand promises egalitarian access to resources, on the other hand new challenges in research and teaching arise. For theology, the challenges come, interalia, in dealing with biblical texts.

Looking at Biblical studies one gets the impression that it is the methods and the experiences of digital humanities that are of interest to new and enriching research. This involves both computer philology and computational linguistics tools as well as digital environments. But further considerations imply that it is not only digital humanities and their methodologies which challenge the theological research with Biblical texts but also the possibilities how digitized texts can be used from a historical, ecclesiological, systematic-theological, liturgical and pedagogical point of view. This volume wants to focus on these different possibilities how digitalization is changing exegesis as well as historical and systematic theological thinking about (Biblical) texts. Therefore, it focuses on a broad variety of topics from a different range of fields, also beyond theology. The book suggests the broadening of the perspective when it comes to thinking about how digitalization influences theology and exegesis.

The idea of the volume is to start a discussion on how to develop critical digital biblical studies. Characteristics of this new field are: First, in this new field of critical digital biblical studies, the challenges and chances of digitalization of Biblical texts as well as the use of these analysis for theology in general, e.g., of systematic theology as well as ethics should be discussed. Second it is in a genuine form interdisciplinary because it relates not only digital humanities with biblical texts, but takes other subjects, like classics, information and computer studies, philosophy, media studies etc. into account.

This volume starts with considerations concerning New Testament texts and wants to give an insight into the relation of New Testament studies and digital humanities as well as on the digitalization of sacred texts in relation to the New Testament which has been already done like the digitalization of the Codex Sinaiticus.[1] But not only New Testament studies come into focus but also other Biblical texts. It addresses the following questions concerning digitalization and Biblical texts: Biblical texts can be called »sacred texts« because of their liturgical and faith-related orientation and therefore the research on these kinds of texts does not only raise text related issues or philological issues but also refers to the underlying questions of how to deal with these kinds of texts in a digital way. The changes that are underway through the use of computers and the associated possibilities of text interpretation, comparison and field analysis seem to be fundamental and also referring to the changes how texts and their environments can be understood. The question is if these changes will lead to a different way of doing exegesis and of understanding New Testament texts – and in the long run also to changes in the theological understanding of all biblical texts – or if they are only additional tools to understand and analyze texts. Media scientist David M. Berry points out, with regard to the developments of the digital humanities, that the third wave of digital humanities, which focuses on »digital predictability«, can currently be talked about.[2] In this respect, it is important to investigate the relation of change in media and epistemic changes.

Our approach is interdisciplinary, because the critical processing of possible digital methods as well as their exegetical and systematic-theological and ethical meaning requires a procedure that involves different perspectives. The

1 British Library, Leipzig University Library, St Catherine's Monastery at Sinai and the National Library of Russia, accessed Mai 24, 2019, http://www.codexsinaiticus.org/.

2 David M. Berry, »Die Computerwende – Gedanken zu den Digital Humanities,« in *Big Data. Analysen zum digitalen Wandel von Wissen, Macht und Ökonomie*, hg. Ramon Reichert, (Minneapolis, Bielefeld: transcript, 2014), 47–64, 49.

approach of the book is relatively new in the sense that research in digital humanities is related to Biblical texts *and* this is brought into discussion with exegetical as well as systematic-ethical issues.[3] Therefore, in this volume the focus is on three areas: one relates to the impressive work which has been done over the past decades on digitalization and on the use of computers for presenting and analyzing ancient texts as manuscripts as well as in their normal text format.[4] The second area refers to further developments concerning the use of methods and tools of digital humanities in New Testament studies. The founding and digitalization of the Codex Sinaiticus serves as an example. The third aspect are systematic theological and ethical analysis which come along the digital use and research on biblical texts: how are texts changed by digitalization, which ethical aspects are relevant when using digital humanities for biblical texts etc. The book closes with reflections of future developments in regard to teaching and theological discourses.

We believe that these different layers of research help to open up a critical analysis of the use of digitalization in theology since it tries to discuss the problematic aspects of digitalization of Biblical texts as well as the advantages and also tries to come up with criteria for these evaluations. With this approach we are on the way of trying to develop critical digital biblical studies.

CRITICAL DIGITAL BIBLICAL STUDIES IN THE CONTEXT OF A NEW DIGITAL THEOLOGY APPROACH

Digital methods are suspected of making analogue work easier because the researcher has many resources available at once, but they do not complement scientific work with new research questions. But if no new questions would

3 There are publications on digital humanities and exegesis in relation to other issues like didactics (e.g., Stefan Fischer and Thomas Wagner, ed., *Digital Humanities*, VvAa 2, 2 (2017) but seldom in relation to exegesis and its systematic theological implications. And there are publications like the Brill series on Digital Biblical studies (accessed January 08, 2019, https://brill.com/view/serial/DBS) and institutions like the Centre for Digital Theology at Durham University (accessed January 08, 2019, https://www.dur.ac.uk/codec/) which work also on the relation of digitalization and the Bible.

4 More information on the history of digitalization and bible use and biblical studies, in: Jeffrey S. Siker, *Liquid Studies. The Bible in a Digital World* (Minneapolis: Fortress Press, 2017).

develop from the digital methods, then the question of a new theology would be unnecessary. Therefore, we see digital methods as a chance to rethink the objects of our theological reflection: manuscripts, texts and their theological significance in societies. This volume wants to give an impulse for developing a digital theology which can only be a theology in plurality, so it should be called »digital theologies«. We are aware that there is already very helpful work on Biblical digital studies initiated by Claire Clivaz and David Hamidović with a focus on the challenges of digital humanities for biblical studies.[5] The approach which is initiated with this book will add to this approach the idea that for a digital theology also the new digitally researched Biblical studies have influence on the usage of Biblical texts in systematic theology, ethics, pedagogy and a lot of other theological fields which still have to be discovered.

RESEARCH QUESTIONS CONCERNING DIGITAL RESEARCH IN BIBLICAL STUDIES

METHODS OF DIGITAL HUMANITIES IN THEOLOGY AND THEOLOGICAL DIMENSIONS OF COMPUTARIZATION OF THE ANALYSIS OF BIBLICAL TEXTS[6]

Methods of digital humanities and their application in the theological field challenge traditional exegesis and open up the range of research questions since they will cover computer philology and their application to biblical

5 David Hamidović, Claire Clivaz, and Sarah Bowen Savant, ed., *Ancient Manuscripts in Digital Culture: Visualisation, Data Mining, Communication*, ed. David Hamidović, Claire Clivaz, Sarah Bowen Savant and Alessandra Marguerat, Digital Biblical Studies Vol. 3. (Leiden: Brill, 2019).

6 Susan Schreiman, Ray Siemens, John Unsworth, »A New Companion to Digital Humanities,« in *Digital Humanities in Ancient Jewish*, Christian and Arabic Traditions, hg. Claire Clivaz et al, Meldenet al. (ed, 5, 1 (2016)); Jeffrey Richards, »Digitale Literaturwissenschaft: Perspektiven, Probleme und Potentiale der Philologien im »digital turn«««, *Textpraxis. Digitales Journal für Philologie*, no. 7 (February 2013), accessed May 01, 2018, www.textpraxis.net; Gabriele Griffin and Matt Hayler, hg., *Research Methods for Reading Digital Data in the Digital Humanities* (Edinburgh: University Press, 2016).

texts, editorial projects, data collections.[7] In this book the focus will be on New Testament texts, although for Old Testament and other Scriptural text the research questions can be seen as similar. The leading research questions which evoke when looking at and applying methods of digital humanities to New Testament studies can be described as followed: what is gained through digital humanities analysis based on their technical capabilities and how to do metadata analyzes and how to bring this in relation to biblical studies. By proposing a new digital exegesis of the New Testament, this also challenges the well established historical-critical routine. The gain in knowledge in the analysis of biblical texts with the help of computers may be high, but due to the technical limitations that may lead to epistemological preliminary decisions, there is also the question of which influence the corresponding methods have on the understanding of the written.[8] Also the scholarly debate in literary studies about close and distant reading will be related in this volume to the questions about biblical texts. It will be combined with the academic discussion in systematic theology and ethics on the role of scripture in theology.[9] This is also an innovative way of discussing the issue of how to evaluate the Bible as reference point in theology: how Biblical texts be understood in innovative ways due to the distant and close reading and how does it influ-

7 Matthew Munson, *Biblical semantics – applying digital methods for semantic information extraction to current problems in New Testament studies* (Düren: Shaker Verlag, 2017), accessed July 18, 2018, http://nbn-resolving.de/urn:nbn:de:bsz:15-qucosa2-169575.

8 Ramón Reichert hg., *Big Data. Analysen zum digitalen Wandel von Wissen, Macht und Ökonomie* (Minneapolis, Bielefeld 2014); Felix Stadler, Kultur der Digitalität (Berlin: Suhrkamp, 2016); Heidi A. Campbell and Stephen Garner, *Networked Theology. Negotiating faith in digital culture* (London Grand Rapids, Baker Academic, 2016); Heidi A. Campbell ed., *Digital Religion. Understanding Religious Practice in New Media Worlds* (London and New York: Routledge, 2013); David M. Berry, *Understanding Digital Humanities* (New York: Palgrave Macmillan, 2012); Franco Moretti, *Distant Reading* (Konstanz: University Press, 2016); Caroline T. Schroeder, »The Digital Humanities as Cultural Capital. Implications for Biblical and Religious Studies,« *Journal of Religion, Media and Digital Cultures* 5, 1 (2016): 21–49.

9 From the vast literature, e.g., Christof Landmesser and Andreas Klein hg., *Normative Erinnerung. Der biblische Kanon zwischen Tradition und Konstruktion* (Leipzig: Evangelische Verlagsanstalt, 2014); Marco Hofheinz, Franz Mathwig and Matthias Zeindler hg., *Wie kommt die Bibel in die Ethik? Beiträge zu einer Grundfrage theologischer Ethik* (Zürich: TVZ Theologischer Verlag, 2011); Ulrich H.J. Körtner hg., *Hermeneutik und Ästhetik. Die Theologie des Wortes im multimedialen Zeitalter* (Neukirchen: Vandehoeck & Ruprecht, 2001).

ence systematic theological thinking? And in the context of digitization, is the »sola scriptura« completely new and different to understand, or is it just an extension of the technical tools? Which ethical criteria can or should be developed for digitalization of biblical texts?

THE DIGITALIZATION OF BIBLICAL MANUSCRIPTS – SUCCESS STORIES LIKE THE DIGITALIZATION OF THE CODEX SINAITICUS AND FUTURE CHALLENGES[10]

For Christianity as well as Christian theology the Bible as a reference text is of utmost importance. Therefore, to digitalize such an important manuscript like the Codex Sinaiticus has been groundbreaking for the way how to handle manuscripts in a digitalized world. Some articles in this volume present the history of this digitalization process as well as future challenges. The research context of the digitalization of the Codex Sinaiticus has to be seen in the context of biblical studies and the search for the »Urtext« which has been an exciting endeavour for biblical scholars of the 19th and 20th century. Digitalization might change this focus. Looking for an »Urtext« can be seen as of minor importance because New Testament scholarship investigates multiple perspectives on the beginnings of Christianity and is less focused on signal political or individual reasons that provoked the production of texts. Previous scholarly work has revealed that the digitalization allows new ways of referencing and analyzing different kinds of manuscripts.[11] The edition of

10 The articles of this planned volume develop the following already published books and papers further: Christfried Böttrich, *Der Jahrhundertfund: Entdeckung und Geschichte des Codex Sinaiticus* (Leipzig: Evangelische Verlagsanstalt, 2011); Scott McKendrick et al. hg., »Codex Sinaiticus: New Perspectives on the Ancient Biblical Manuscripts,« Proceedings of an International Conference, London July 6-7th 2009, London 2015; David Parker, »Ancient Scribes and Modern Encodings: The Digital Codex Sinaiticus,« in *Text Comparison and Digital Creativity. The Production of Presence and Meaning in Digital Scholarship*, hg. S. Wido van Peursen, Ernst D. Thoutenhoofd, and Adriaan van der Weel (Leiden und Boston 2013), 173-188; James A. Libby, »Proposing Some New Ecliptics in New Testament Studies Enabled by Digital Humanities-Based Methods,« *Journal of Religion, Media and Digital Culture* 5, 1 (2016): 89–134; Stephen D. Moore and Yvonne Sherwood, *The Invention of the Biblical Scholar: A Critical Manifest* (Minneapolis: Fortress Press, 2011); Claire Clivaz, Paul Dilley, and David Hamidovic hg., *Ancient Worlds in Digital Culture* (Boston: Brill, 2016).

11 Gabriel Bodard und Juan Garcés, »Open Source Critical Editions: A Rationale,« in *Text Editing, Print, and the Digital World*, hg. Marilyn Deegan, and Kathryn Sutherland (Sur-

manuscripts online can help to cross referencing and to coming to new relations. Therefore, not only technical questions arise which texts to be used for cross referencing but also hermeneutical what to cross reference and how to deal with the research results.

ON THE FUTURE OF TEACHING AND THEOLOGICAL DISCOURSES

The digitalization of New Testament texts and biblical texts in general leads not only to challenges concerning exegesis but also to challenges in teaching and theological discourses. The underlying thesis of this volume is that the changes of digitalization in biblical studies will lead to new perspectives in exegesis as well as in other subjects of theology and in the way how theology is taught. This means that research questions arise how and what to teach and how to reflect and learn the traditional knowledge and methods of exegesis which are considered to be an important part of New Testament and Biblical research history and to use new methods of learning and exegesis. This leads also to questions concerning systematic theology and ethics and here one of the core question is how to refer to biblical texts in dogmatics as well as ethics when the plurality of texts shown by digital methodologies prevails.

TOPICS OF THE VOLUME

The emphasis of this volume lies in its broad approach to the digitalization of Biblical texts and its positive and at the same time also critical perspective on it. Although its focus lies on New Testament studies, the idea of most of the articles is that their focus on these texts can be transferred further to other Biblical texts and in some cases also to other ancient texts. In order to demonstrate that this transitation is not only a one-way street the renowned antiquities' scholar Gregory Crane has been asked to contribute to the conference and to the topic.

rey: Routledge, 2009), 84–98.

COMPUTATIONAL – HISTORIC-CRITICAL EXAMINATIONS OF ANCIENT TEXTS: HOMER AND NEW TESTAMENT

In his article »Towards a ›Smart Homer‹ and New Forms of Reading« *Gregory Crane* understands scholarly editions as opportunities to help to think as deeply and precisely about primary sources as possible. While born-digital editions can cover a range of non-textual content (including music, statues and paintings, and archaeological sites), Crane focuses in this article upon the emergent form of digital editions for primary sources and, in particular, the Homeric Odyssey, one of those primary sources for which the most exhaustive resources are available in print form. This paper documents a partial model for a born-digital edition for the Odyssey, focusing particularly upon the challenge of representing Homeric grammar, both to specialists in Ancient Greek and to interested readers, with no training in Greek, who wish to work through what the Greek words in any given passage of the text mean and how the text grammatically fashions meaning. The result is a new form of reading that lies between the practiced expertise of the specialist and reader with no mechanism to push beyond translation. He considers both: how traditional resources (such as modern language translations) begin to play a fundamentally different role than was feasible in models of reading grounded in print culture and how, even if the content in mature reference works (here two grammars of Homeric Greek) were not to change in the light of new digital methods, its realizable value and potential intellectual significance can be radically enhanced. After this article which develops the chances of digital humanities for the classics, and especially for understanding the Odyssey, the focus will shift to a New Testament study approach which relates to digital humanity methods. In the centre of *Soham Al-Suadi*'s article: »Historical-critical Exegesis and the Reappraisal of the Beginnings of Christianity in the Digital Age« stands the idea that the access to digitized sources enables a profound and intensive source study, which forms the basis for New Testament exegesis. Thus, the methodological approach justifies new questions. While the question of the historical Jesus was at the beginning of historical-critical exegesis, it is now the question of the plurality of early Christianity. This article presents the adaptability of historical-critical exegesis in relation to the historical Jesus question and describes how the method has changed in the digital age. The potential of the method will be discussed and the necessity of interdisciplinary advancement of the study of ancient sources will be pointed out. In the article the thesis is discussed that it is especially with the digital turnaround that the historical-critical exegesis opens up a full range of meanings concerning the plurality of early Christianity and this has also far-reaching cultural and humanistic implications.

An example what computational research on texts is able to uncover is demonstrated in *Matt Munson's* article »A Computational, Historical-Critical Examination of ἐκκλησία in the New Testament«. In later Christianity, the term ἐκκλησία becomes a term to refer to the Christian »church« in all of its aspects (e.g., physical, local, universal »church«). But the roots of its usage in the New Testament are disputed, since it was used both in the wider Hellenistic world in a political sense as well as within the Jewish community in a more communal or religious sense. The article uses computational linguistic methods to analyze the semantic relationship of ἐκκλησία in the New Testament with other texts that were written or widely known in the first century CE (e.g., the Septuagint, Philo, Plutarch, Josephus). The close relationships that these methods detect between the New Testament, the Septuagint, and Philo suggest a strong relationship between the new Christian ἐκκλησίαι and the founding story for the nation of Israel: the Passover. After having demonstrated the strength of a digital humanities reading of specific texts, *Soham Al-Suadi* and *Frank Krüger* present in their article »Redaktionskritik reconsidered« reflections on the role and methodology of the exegetical tool of »Redaktionskritik« in the light of digitalization. Exegesis of the New Testament is a canon comprising several methodological steps that have developed over the past 150 years. Latest methodological additions to this set of analytical techniques were the socio-historical and cultural turns. Today, the consequences of digitization of ancient sources call for a new consideration of the entire methodological framework. Looking at Redaktionskritik in particular this paper will show that in the digital age working with digitized sources is not an addition to the well-known exegetical techniques but represents a fundamental shift of the frame. We will introduce PROV, a formal modelling tool for provenance describing the origin of data, thus providing a convenient way for traceability of processes and their results. Applying PROV, redaction criticism is understood as an active method considering flexible dependencies between a) the sources understood as entities, b) the influences on the editorial process understood as activities, and c) the various identities of ancient authors understood as agents.

THE DIGITALIZATION OF THE CODEX SINAITICUS AS A SUCCESS STORY AND THE QUESTION OF THE RESPONSIBILITY OF REMEMBRANCE

New Testament scholar and long time expert on Codex Sinaiticus and its digitalization *Christfried Böttrich* shows in his article »Codex Sinaiticus – History of a Scientific Sensation« that the (re)discovery of the Codex Sinaiticus was one of the great scientific sensations in Europe around the middle of the 19th century. It took place under conditions that were not necessarily favourable to the rapid publication of this important manuscript for the interested academic audience. Almost inevitably, therefore, the finding also triggered a series of entanglements and controversies, the overcoming of which has become possible only recently. The encounter between »Orient« and »Occident«, the complications of travel and traffic routes, the development of new publication methods and the wide field of academic funding are all intertwined in this story in many ways. The digitization of the manuscript (2005–2009) opens up completely new horizons, and now also a shared responsibility for this valuable cultural heritage.

In her article »Conservation and Remembrance – and the Question of Responsibility. The Digitalization of Codex Sinaiticus in Ethical-Theological Reflection«, the systematic theologian and ethicist *Gotlind Ulshöfer* discusses how digitizing biblical texts raises ethical questions as well. The digitization of the Codex Sinaiticus serves as a point of departure for reflection because of its outstanding position. In the article, the idea of a »shared remembrance« (A. Margalit) is used to analyze which ethical aspects can become relevant in the digitization of biblical texts. Central to this is a responsible-ethical perspective, which makes it possible to focus on actors as well as users and possible normative preliminary decisions with regard to digital implementation.

CRITICAL DIGITAL BIBLICAL STUDIES AND CHANGEING PERSPECTIVES IN THEOLOGY – IMPLICATIONS AND IMPULSES IN SYSTEMATIC THEOLOGY AND TEACHING

Gesche Linde's article »Texts or Data? Theology and the Digital Humanities« focuses from a systematic theological perspective on the role of digital humanities for a textual understanding. The article introduces a cultural contextualization of the digital humanities. The thesis of the article is that the transformation of texts into data by the digital humanities means a paradigm shift, because it is the humanistic double function of texts as a subject of research and as a research medium and it argues that, from a semiotic perspective, the digital humanities create their own research subject, summarily lists and dares to consider some of the implications for the specialized culture of theology (or the humanities as a whole) of the advance of the digital humanities. Finally, an outlook on the horizon of the artificial intelligence is brought up.

Daniel Pauling and *Anja Swidsinski* focus in their article »On the Future of Teaching in a Digitized Environment« on the didactical implications for teaching at universities triggered by the digitization of research environments. The authors take the perspective of current didactical research on a shift from teaching to learning. They discuss the competencies students are expected to gain during a seminar or lecture, and how the achievement of these competencies is guaranteed through alignment of didactical aspects. Four core competencies and their alignment in the classroom with the help of digital resources are discussed and illustrated by tested teaching scenarios. Not all of these stem from New Testament Studies but all can help educators reflect on which competencies they want to instill in the students, which tools to use to this end, and how to integrate them into the actual teaching scenario.

FUTURE ASPECTS OF CRITICAL DIGITAL BIBLICAL STUDIES

This volume came out of the conference »Heilige Texte im Spannungsfeld der Digitalisierung – Auf dem Weg zu einer New Digital Biblical Theology?« at Rostock University in May 2018 which has been initiated and organized by the two editors. With this conference the editors wanted to set a start on an interdisciplinary critical digital biblical studies. This is only the beginning and needs further and more interdisciplinary oriented research concerning New Testament and Biblical studies in relation with digital humanities, information and computer sciences and systematic and practical theology as well as classics and historical approaches. The challenge of this endeavor lay in the overview, how to combine innovative research of the last twenty years on the digitization of Biblical texts. Further studies will face the challenge of understanding digitisation much more as hermeneutics. As the methods and access to our texts, the development of (church) history and the relationship between them change, digitization will mark a hermeneutic difference. We are setting the grounds for common reflection and are awaiting the next developments with anticipation.

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II
PHILOLOGISCH-EXEGETISCHE ANALYSEN UND ANWENDUNGEN

TOWARDS A »SMART HOMER« AND NEW FORMS OF READING

GREGORY CRANE

> »Generally disruptive innovations were technologically straightforward, consisting of off-the-shelf components put together in a product architecture that was often simpler than prior approaches. They offered less of what customers in established markets wanted and so could rarely be initially employed there. They offered a different package of attributes valued only in emerging markets remote from, and unimportant to, the mainstream.«
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> Christensen, Clayton M, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (Harvard Business Review Press 1997), Kindle Edition.

This paper explores one particular component of an attempt to develop a »Smart Homer«, an edition of the Homeric epics that strives to move beyond the assumptions built into many, if not most, first-generation digital editions. Such a »Smart Homer« offers one instance of a broader class of »smart texts«, a class that aims at providing information that has been personalized for the general background and the immediate purposes of as many different readers, speaking as many different languages and produced from as many different cultural backgrounds as possible.

Smart texts are intended to enhance what readers can do. The goal is not to reduce the amount of effort spent reading but to encourage more active engagement and to challenge readers to rethink how they interact with what they read – and especially with sources composed in languages and in cultural contexts with which they are not familiar. Researcher Maryanne Wolf, for example, warns that »screen reading« promotes skimming rather than the »deep reading« that happens when we immerse ourselves in a text. She points to research surfacing in many parts of the world that suggests that screen reading undermines the development of »internalized knowledge, analogical reasoning, and inference; perspective-taking and empathy; critical analysis and the generation of insight.«[1]

1 For a succinct overview, see Maryann Wolf, »Skim reading is the new normal, the effect on society is profound,« *The Guardian*, August 25, 2018, https://www.theguardian.com/commentisfree/2018/aug/25/skim-reading-new-normal-maryanne-wolf.

As technological exercises, »Smart Homer« in particular and Smart Texts have no meaning except insofar as they foster the emergence of smarter readers. Our work on smart texts thus pushes against the model of screen reading. Smart Texts challenge readers to pause and reflect on what they are reading, to question what lies beneath the surface of the text, and, in particular, to push past the limitations of translation. Smart Texts enable readers to confront languages with which they are not familiar, and to experience depths of meaning that are inaccessible to readers who must depend upon static translations. Working with a fully developed »Smart Homer«, readers might start with an engaging translation of the Odyssey, shift seamlessly into hearing the sounds of Homeric poetry performed by multiple voices, explore the meanings of key concepts that no English translation can capture, and – for those who wish (and there will be some who do) – ultimately develop mastery of Homeric Greek so that they can read the epics themselves with fluency.

Our model goes beyond the »deep reading« that we cultivate in reading novels. We promote philology. In 1822 the German scholar August Boeckh offered a Latin description of philology that emphasizes its breadth and that captures my own goals in developing smart texts: philology encompasses anything we can do with the human record to understand the past.[2] In this context, we emphasize another, simpler definition offered by another 19th century German thinker: philology is the art of reading slowly.[3] While philology in the English-speaking world often describes the study of pre-modern languages, I consider philology to encompass any and all practices by which we understand sources where we cannot rely upon the intuitions of native speakers. In practical terms, that definition includes cases where we feel that the explanations of native speakers are not adequate or where native speakers simply are not, in any practical sense, available. This latter case is growing

2 Ferdinand Ascherson, Paul Eichholtz, and Ernst Bratuscheck, *August Boeckhs Gesammelte kleine Schriften*, Volume 1 (Leipzig: B.G. Teubner, 1858): 105.

3 The passage most commonly cited comes from Nietzsche's introduction to his book, *Daybreak*: a philologist is a »teacher of slow reading«. Friedrich Nietzsche, »Ein Lehrer des langsamen Lesens,« in *Morgenröte* (Leipzig: Verlag von E. W. Fritzsch, 1887, 2nd ed.) x, https://archive.org/details/morgenrthegedan00nietgoog/page/n17; Mark Bauerlein, »Nietzsche on Slow Reading,« *Chronicle for Higher Education* (September 22, 2008), https://www.chronicle.com/blogs/brainstorm/nietzsche-on-slow-reading/6316.

progressively more common in a digital age: viewers of Netflix, for example, regularly encounter content in languages such as Turkish, Korean, Malaysian, and Tagalog. Insofar as we strive to bet past the subtitles and the conventionalized plot elements designed for global audiences, we are trying to act as philologists.

Smart texts unabashedly set out to be all things to all people. Such a broad goal can, of course, never be fully realized – there will even be many competing ways to articulate in operational terms what such a broad goal means. But asserting such a broad goal is essential if we are to challenge ourselves to help the human record play the broadest and deepest possible role in the lived intellectual life of humanity. A »Smart Homer« provides a useful starting point because so much material is available in openly licensed machine actionable form about the Homeric epics and because these poems have demonstrated an enduring appeal among very different audiences over thousands of years. But we view the experiences that we develop in building a »Smart Homer« as tangible experiments for methods with far broader application.

To scale over billions of sources in thousands of languages, Smart Texts must be hybrid systems that integrate contributions from human audiences, both expert and novice, with rapidly evolving forms of machine learning. While a »Smart Homer« builds upon machine learning, it is sufficiently limited in scale that we can begin by prototyping Smart Texts with largely human-curated data. But once we move beyond representing basic information about the Homeric Epics themselves and begin to help readers see how the Homeric epics have been understood over time, we encounter thousands of sources in dozens (if not hundreds) of languages produced over thousands of years.

This paper looks at one particular subset of a »Smart Homer«: ideas from two specialized grammars about Homeric Greek, a pre-existing English translation aligned at the sentence and word/phrase level to the Greek source text, and an initial database of linguistic annotations covering the morphological form, part of speech, and syntactic function of words in the two epics. This paper also briefly considers the implications of exhaustive explanation of meter and synchronized performances. Integrating these sources produces an emergent reading environment (i.e., one where the properties of the whole cannot be predicted from those of the individual components).

This overall work builds upon a central – and fundamentally disruptive – hypothesis. The biggest challenge that confronts the study of Greco-Roman culture – and many other areas within the humanities – is not the production of new ideas by which to understand the Greco-Roman world. The biggest challenge is enabling potential audiences to discover and understand existing ideas that may be of interest to them as they think about Greco-Roman culture. It makes little difference if potentially engaging new ideas are published if only specialists have access to them, whether because only specialists can look behind a paywall or because the ideas are written in a fashion that only specialists could understand. Reception studies studied the way in which different audiences have understood previous works (e.g., the use of Ancient Greece as part of the development of German vs. British identities in the 19th century). While such reception studies are interesting, contemporary reception studies – aimed at how and why our fellow citizens around the world engage with Greco-Roman culture – is not a luxury but an existential necessity if the Greco-Roman culture is to fulfill its potential role within the intellectual life of humanity as a whole. Specialist publication is a means to this broader end – or it should be if a field is to flourish.

Translation is, of course, and must be, the starting point for the vast majority of readers first encounter sources in languages that they do not know. Greek and Latin literature have for centuries benefited from gifted translators who struggled to make the mute texts speak to their contemporaries. This is true not only for society as a whole but for the vast majority of academics – Greek and Latin contain materials of interest to specialists in fields such as History, Philosophy, Drama, the History of Science, Religion, World Literature, few of whom have the luxury to acquire advanced understanding of Greek and Latin. And even if they can develop advanced mastery of these languages, there is always another language to learn. We often forget the extent to which we have to adapt our research questions to the languages that we can understand. The Homeric Epics have been particularly fortunate in attracting a range of translations into many languages. The next section considers how a »Smart Homer« could capitalize upon this initial interest and engage readers who wonder what lies behind the translation.

USE CASE: FROM EMILY WILSON AND STANLEY LOMBARDO BACK INTO THE GREEK

In the following use case, readers push beyond the surface of a single translation and see how far they can get into the underlying source text. The illustrations below draw upon particular, distinct systems that are in place as of April 2019. None of these systems is likely to exist for a long period of time and they are not smoothly integrated in a way to support the seamless reading experience that smart texts should provide. But the still-disconnected components presented below demonstrate that core components, including both openly licensed software and data, of such a reading environment already exist.

Consider the same sentence as it appears in recent translations of the Homeric *Odyssey* into English, by Stanley Lombardo in 2000[4] and by Emily Wilson in 2017.[5]

There was no sign / Of plowed fields
Lombardo, Od 10.112-113 (as numbered in this translation)

I saw no sign of cattle or of humans
Wilson, Od. 10.98: same line number in the Greek and in this translation

Reviewers of both translations have picked out a number of passages for comment. I chose this sentence, instead, because it was short, simple and unremarkable. I wanted to see what would happen if readers paused and looked carefully at one sentence as it appeared in two different translations and compared these to the Greek.

The two translations convey much the same message: Odysseus sees no sign of human habitation when he first lands on the island of the Laestrygonians – cannibalistic giants who will destroy eleven of his twelve ships and kill their crews. The emptiness of the scene may convey foreboding for the

4 Stanley Lombardo, *Odyssey/Homer*, trans. Stanley Lombardo (Indianapolis: Hackett Publishing Company, 2000).

5 Emily Wilson, *The Odyssey/Homer* (New York: W. W. Norton & Company, 2017).

panicked deaths that will follow, as the eleven ships find themselves trapped in a harbor with a narrow exit and unable to escape.

The language of each translation differs, however, in its particulars. How does each relate to the Greek original? Is one closer or are they both comparably distant? How can the reader get past the surface of the English?

The first essential – although manifestly insufficient – condition to pose this question is to have access to the Greek text. Access to printed translations does not entail access to the Greek text in any form. Once translations are available online, however, the Greek text of the *Odyssey* is available from multiple sources, although readers may have to scroll through a copy of book 10 of the *Odyssey* to find the line. The figure below (cf. figure 1), however, represents one particularly precise mechanism for retrieving the source text for citations:

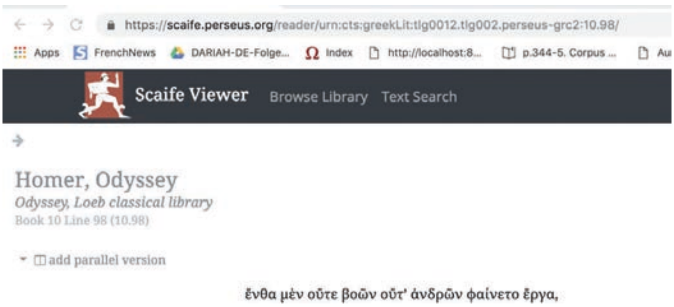


Figure 1: The Scaife Viewer.[6]

The URL includes within it a generalized citation, structured according to the Canonical Text Services (CTS) data model.[7] The URL above identifies line 98 of book 10 (10.98) in the Homeric *Odyssey* (tlg0012 designates Homer and tlg002 the *Odyssey*) as it appears in the 1919 edition by A. T. Murray perseus-grc2). The user-facing website above provides that one line but it could also provide more context (e.g., a 20 line window such as 10.90-10.110). More importantly, the Scaife Viewer[8] above can use the URN (the information in

6 https://scaife.perseus.org/reader/urn:cts:greekLit:tlg0012.tlg002.perseus-grc2:10.98/.

7 »The Canonical Text Services protocol,« accessed March 31, 2018, http://cite-architecture.github.io/cts_spec/.

8 The Scaife Viewer commemorates the late Ross Scaife (1960-2008), perhaps the first classicist to get tenure primarily on the basis of his digital work and a pioneer in Digital Classics.

the URL that follows »urn:«) to find any other associated information about this particular text so long as that information also uses the CTS citation. The CTS data model provides us with one tangible mechanism by which we can aggregate the varied categories of data, now available in different digital systems, that we will discuss below.

Even before we address the task of making the Ancient Greek text intellectually accessible to someone who does not know the language, we can provide some insight into how each relates to the underlying Greek by aligning the words in each translation with the Greek original (cf. figure 2).

Figure 2: The Ugarit System.[9]

Figure 2 shows such an alignment as implemented in the Ugarit system, an experimental system developed in 2017-2018 by Tariq Yousef, then a PhD student in Digital Humanities at Leipzig. In this case, I have manually aligned the two English translations to the Greek source text. Red words in the English are words that I did not feel could be aligned to the Greek original, while red words in the Greek original are, correspondingly, words that had no precise corresponding words in either English translation. Different readers may align the texts above in somewhat different ways, but even without looking at the Greek or the English, the amount of residual red text immediately gives readers one important insight: neither of the translations follow the source text very closely.

For those who have not learned the Greek alphabet, the system produces a version in English transliteration. In the model above, transliteration appears one word at a time (ἀνδρῶν, »of men,« is transliterated as »andrôn«) – the entire line could, of course, be presented in transliteration.

Access to a transliteration does not allow us to read this line aloud in any meaningful way: *Odyssey* 10.98 is a complete line of poetry, in the dactylic

9 http://ugarit.ialigner.com/text.php?id=26680.

hexameter format in which the Homeric epics were composed. The Classicist David Chamberlain has addressed this problem by creating a website that makes available openly licensed metrical analyses based on openly licensed Greek and Latin texts from the Perseus Digital Library.[10] We can thus see the metrical form of this line from the *Odyssey* (cf. figure 3).

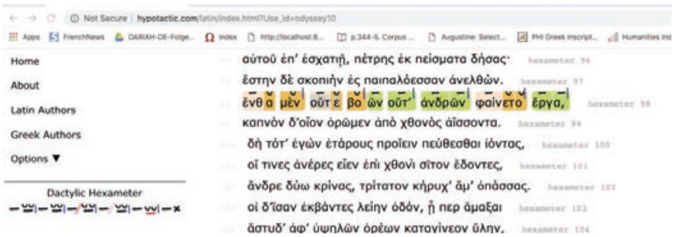


Figure 3: Homeric Hexameters analyzed.[11]

Before we turn to close analysis of what the Greek text means, I would recommend readers to practice reading the words and experiencing it as spoken language. Of course, the site above does not provide the Greek in a transliterated format, but that could be easily added. Only slightly more challenging – and far more important – is the ability to add synchronized readings of the line in meter. Readers of languages in Roman scripts can often begin reading the Greek alphabet within a relatively short period of time but learning how to read Greek and Latin poetry in meter has proven far more challenging (at least for my students and for me when I was a student). Representing sound has always been a fundamental limitation of print publication. In his eighteenth century Persian Grammar, the Englishman William Jones lamented this limitation and, in a revealing comment, told his readers that they should have their munshi (the Persian word for secretary) read for them so that they could hear the sounds of Persian.

Technology has, of course, made it possible to synchronize sound with text for generations – children in the 1930s and 40s »followed the bouncing ball« move from word to word as songs were sung in cartoons. This paper

10 »Perseus Digital Library,« accessed March 31, 2018, http://www.perseus.tufts.edu/hopper/.

11 »Greek and Roman verse,« accessed March 31, 2018, http://hypotactic.com/latin/index.html?Use_Id=odyssey10.

follows a print framework and thus does not include a dynamic illustration of synchronized Greek text and sound (although David Chamberlain has provided such synchronized text for all of the *Iliad* and for much of the *Odyssey,* e.g., http://hypotactic.com/homer/odyssey/Od1.html). Nevertheless, the importance of such a simple technology makes it possible for readers to practice and internalize the sounds not only of another language but of poetic expressions. With Ancient Greek, of course, we have no native speakers but our scholarly reconstructions, if performed effectively, have the potential to bring the poetry to life as something experienced with the ear (and, indeed, the Homeric epics emerge from an oral tradition where there were no written texts).

At this point, readers have the tools needed to read the line of Greek aloud as a line of poetry and they can see that both English translations differ substantially, at least in form, from the original. Ideally, our readers find the difference as intriguing and as a challenge. The next step is to see how far beyond the translation they can push.

At this point, we illustrate some of what can be done with another reading environment, developed by the Alpheios Project. Readers can call up the Greek of *Odyssey* 10.98 and simply begin querying each word in the sentence (cf. figure 4):

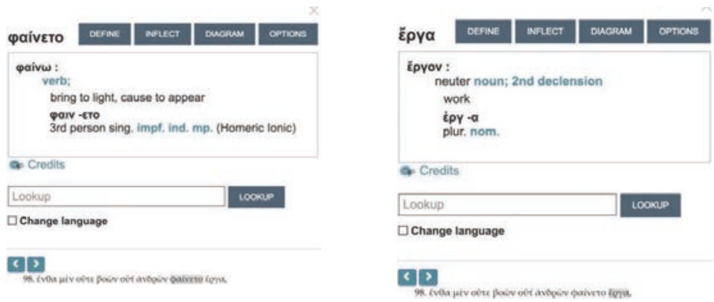


Figure 4: Morphological and lexical information.[12]

In the figure above, the last two words of the sentence have been queried. Readers now can see the part of speech and morphological form for each word, as

12 All of the figures below can be produced after readers have gone to the URL: http://texts.alpheios.net/text/urn:cts:greekLit:tlg0012.tlg002.alpheios-text-grc1/passage/10.98. There are (as of this writing) no URLs by which directly to call up the specific figures listed below.

well as a basic definition. For readers who are not familiar with Greek, the fact that the verb on the left is »third person singular imperfect indicative active« and that the noun on the right is »nominative plural« may not be of much immediate use, but the automatically derived links between the inflected forms (*phaineto* and *erga*) and their dictionary forms (*diaphainô* and *ergon*) is, however, useful as it allows readers to explore what each word in the sentence means while the basic part of speech (verb vs. noun) gives readers some information about the roles that these words play in the sentence. Translations will, of course, commonly restructure the grammar: nouns and verbs in the Greek do not always correspond to nouns and verbs in a translation, but they do often enough so that the part of speech information can be of material use to readers pushing against the Greek without knowledge of the language. Particularly determined readers would be able to discussions of what several words mean in this particular line of Homer by clicking on the »DEFINE« link

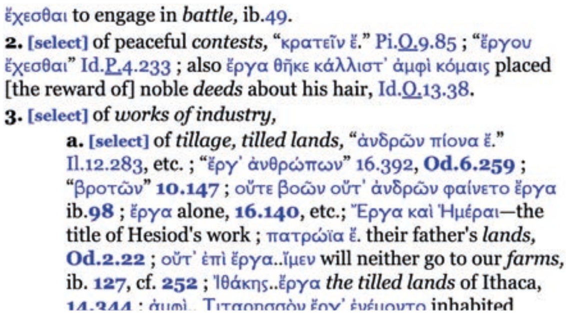

ἔχεσθαι to engage in *battle*, ib.49.
2. [select] of peaceful *contests*, "κρατεῖν ἔ." Pi.O.9.85 ; "ἔργου ἔχεσθαι" Id.P.4.233 ; also ἔργα θῆκε κάλλιστ' ἀμφὶ κόμαις placed [the reward of] noble *deeds* about his hair, Id.O.13.38.
3. [select] of *works of industry*,
a. [select] of *tillage, tilled lands*, "ἀνδρῶν πίονα ἔ." Il.12.283, etc. ; "ἔργ' ἀνθρώπων" 16.392, **Od.6.259** ; "βροτῶν" **10.147** ; οὔτε βοῶν οὔτ' ἀνδρῶν φαίνετο ἔργα ib.**98** ; ἔργα alone, **16.140**, etc.; Ἔργα καὶ Ἡμέραι—the title of Hesiod's work ; πατρώϊα ἔ. their father's *lands*, **Od.2.22** ; οὔτ' ἐπὶ ἔργα..ἴμεν will neither go to our *farms*, ib. **127**, cf. **252** ; Ἰθάκης..ἔργα *the tilled lands* of Ithaca,

Figure 5: Dictionary entry from the machine-readable version of the Liddell-Scott Jones Greek-English Lexicon at Perseus.[13]

Readers could discover that the definition above specifically comments on Od. 10.98 but such discovery would require substantial determination. They would have to dig through a dense article about an important Greek word with many meanings. The reading environment above is smart enough to know that the reader was looking at Homer and to mark in bold all references

13 »Perseus Digital Library,« accessed March 31, 2018, http://www.perseus.tufts.edu/hopper/morph?l=e%29%2Frga&la=greek&can=e%29%2Frga0&prior=fai/neto&d=Perseus:text:1999.01.0135:book=10:card=87&i=1#lexicon.

to passages in Homer. If they see that references to the *Odyssey* take the form »Od. BOOK.LINE«, they could search for »Od. 10.98«, they would find no results but they might, if sufficiently diligent, read far enough to discover »Ib. 98« and then, if they knew what »ib.« meant and noticed that the previous reference was to Od. 10.147, then »ib.« refers to »Od. 10« and »ib.98« to »Od. 10.98« – the passage with which we began. Then they might be able to see that the meaning of *erga* in this context is not simply »works« but »works of industry« and, in particular, »tilled lands«, i.e., the signs of human habitation.

At this point, readers have two English translations with some indication of how they relate to each other and to the Greek, they have tools by which they can see the Greek in transliteration and hear the sound of the Greek read in metrical form, and they have basic information about the meanings and parts of speech of each word. Some of the information (e.g., the links between inflected forms and dictionary forms) is machine-generated while much of the information comes from print reference works that have been digitized but not revised to reflect the affordances of a digital reading environment. But this pragmatically constructed reading environment has been enough to enable readers to begin grappling with the Greek directly. My students have used such tools for decades. While some never get over the uncertainty associated with exploring an unknown language with such basic tools, many have surprised themselves – and their teachers (including but not only me) with what they have been able to discover.

More can, of course, be done to engage readers and to support their efforts. For years we have been gradually adding full linguistic explanations for each word in each sentence of Greek and Latin texts – analyses for more than one million words of Greek and Latin are available from various sources under an open license.[14] This includes all 200,000 running words of the Homeric *Iliad* and *Odyssey.* This particular subcorpus provides an interesting starting point because these poems have been heavily studied for thousands of years. There are not only dozens of translations of the *Odyssey* into a wide range of languages but specialized reference works such as books commenting on individual passages, dictionaries with extensive coverage of the Homeric

14 E.g.,»PerseusDL/treebank_data,« https://github.com/PerseusDL/treebank_data; »The PROIEL Treebank,« accessed March 31, 2018, https://proiel.github.io/.

epics and even grammars focusing on the language of Homer. We will return to these resources and how they can be used.

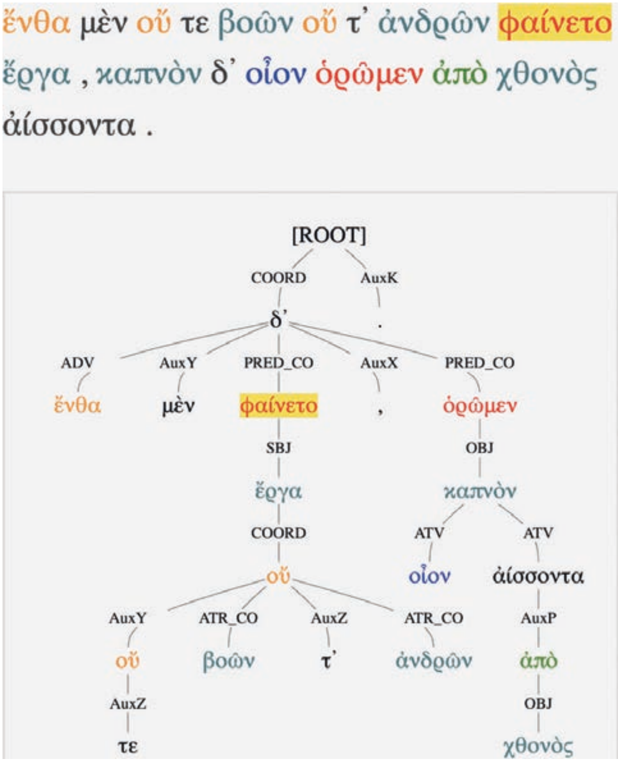


Figure 6: Syntactic analysis of *Odyssey* 10.98-99.[15]

First, however, let us consider the linguistic analysis of Od. 10.98 as it appears in the Perseus Ancient Greek and Latin Dependency Treebank and as the linguistic data is served via the Alpheios reading environment (cf. figure 6).

Databases of syntactic analyses are generally called treebanks because they typically structure the words in a sentence in a tree structure (as is evident above). The annotators of the Perseus Treebank combined Od. 10.98-99 into a single larger sentence. The use of PRED_CO, however, tells us that there

15 The information above is available from http://texts.alpheios.net/text/urn:cts:greekLit:tlg0012.tlg002.alpheios-text-grc1/passage/10.98. The reader needs to click on a word and then select the »diagram« button to call up the syntactic analysis above.

are two independent sentences that are coordinated – we may well split the tree above into two chunks in a later iteration. The line in question is on the left hand of the larger tree.

The dependency tree describes which words depend upon which and offers explanatory labels to define the relationship between a word and the word upon which it depends. The Greek word *erga* depends on the verb *phaineto*, and readers will probably be able to guess that the label SBJ indicates that *erga* function as the subject of *phaineto*. The label ATR indicates attributes: *boôn* and *andrôn* are co-attributes of *erga* (ATR_CO). The core of the sentence is translated: »neither the works of cattle nor of men were visible.«

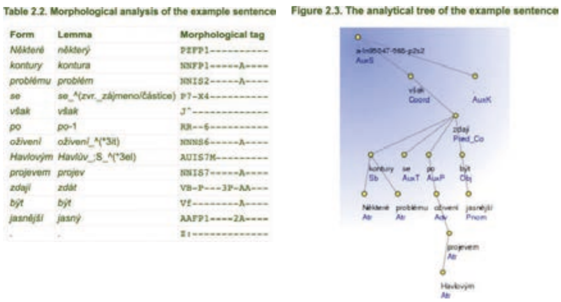


Table 2.2. Morphological analysis of the example sentence

Form	Lemma	Morphological tag
Některé	*některý*	PZFP1----------
kontury	*kontura*	NNFP1-----A----
problému	*problém*	NNIS2-----A----
se	*se_^(zvr._zájmeno/částice)*	P7-X4----------
však	*však*	J^-------------
po	*po-1*	RR--6----------
oživení	*oživení_^(*3it)*	NNNS6-----A----
Havlovým	*Havlův_;S_^(*3el)*	AUIS7M---------
projevem	*projev*	NNIS7-----A----
zdají	*zdát*	VB-P---3P-AA---
být	*být*	Vf--------A----
jasnější	*jasný*	AAFP1----2A----
.	.	Z:-------------

Figure 7: Selection from a Czech Treebank.[16]

Readers will need to spend some time familiarizing themselves with what the syntactic tags mean but the effort offers at least one advantage: the tagset is based on tags developed for the Czech Dependency Treebank.[17] Once readers are familiar with the tagset, they can begin to understand the function of annotated sentences in other source texts tagged in a similar fashion. The examples below are from the Czech Treebank (cf. figure 7):

The figure above on the left presents the same core data – inflected form, dictionary form (the »lemma«) and morphological tag for a Czech sentence, while the figure on the right shows the same basic tagset applied to Czech. Some treebanks provide tagsets more closely tailored to particular languages.

16 »Institute of Formal and Applied Lingustcs,« accessed March 31, 2018, http://ufal.mff.cuni.cz/pdt2.0/doc/pdt-guide/en/html/ch02.htm.

17 E.g., »Prague Depenency Treebank 2.0,« accessed March 31, 2018, http://ufal.mff.cuni.cz/pdt2.0/doc/pdt-guide/en/html/ch02.html.

Thus, my colleague Matthew Harrington has created a tagset that adds traditional grammatical labels to the core tags derived from the Prague tagset and supports more fine-grained functions optimized for Greek and Latin. Other colleagues emphasize – at times with great vehemence – how much more expressive tagsets can be when optimized for particular languages or even for corpora organized around particular genres or chronological periods. But more general tagsets such as the Prague tagset or the increasingly popular Universal Dependency Tagset allow readers to work with a wider range of languages by mastering a single core annotation scheme. Insofar as we work with general tagsets, the skills learned working with a particular language (such as Ancient Greek) can be applied to other languages. Realistically, we should think in terms of complementary systems of annotations that support breadth of study across languages and optimized systems for more precise analysis of particular languages or corpora.

As my collaborators and I explore Greek and Latin in general and the Homeric epics in particular, the question before us is how to enhance what readers without knowledge of these ancient languages can do with these sources. The annotations highlighted above – alignments at the word and phrase level between source text and translation, basic reading aids such as transliteration, metrical annotation and synchronized performance, links from inflected forms to dictionary entries, morphological and syntactic analyses – provide only first steps towards a »Smart Homer«. We are only in the early phases in a long process of experimentation, assessment, and development.

The rest of this paper describes next steps already under development that are relatively modest within this larger context but that by themselves have the potential to foster new forms of reading and that challenge professional scholars to reorganize how they imagine publishing their ideas and even what ideas they wish to develop. Seeking to make the fullest possible understanding of our source texts intellectually accessible to non-specialists is a profoundly disruptive change, one with consequences for the way we conceive of our tasks as specialists and how we redesign the education that we provide at every level of study, from the students who enter our classes on a whim through the most advanced researcher.

At this point, I would like to focus on how to enhance two categories of explanatory information: glosses helping people understand what particular inflected forms mean in particular context and grammatical explanations allowing readers to recognize particular linguistic patterns within the language. In each case, we can begin with information published in printed form but we need also to optimize (and indeed rethink) how we present that information to serve the vast potential audience available online. When scholars produced the print editions, lexica, grammars, commentaries and other specialized tools for print culture, the distribution networks determined the primary audiences that these works could serve: these books would primarily reach students in formal classroom settings or specialists in Greek and Latin working in academic libraries. The assumptions are visible in the layout and construction of these resources.

Comparison between the digital version of the dictionary entry for *ergon* in figure 5 (above) and its print source (figure 8-print, below) illustrate several aspects in which the digital version attempts to reduce the barriers to usage (cf. figure 8).

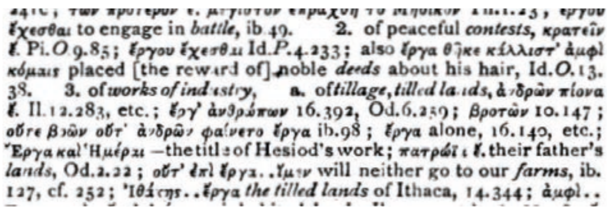

ἔχεσθαι to engage in *battle*, ib.49. 2. of peaceful *contests*, κρατεῖν ἔ. Pi.O.9.85; ἔργου ἔχεσθαι Id.P.4.233; also ἔργα θῆκε κάλλιστ' ἀμφὶ κόμαις placed [the reward of] noble *deeds* about his hair, Id.O.13.38. 3. of *works of industry*, a. of *tillage, tilled lands*, ἀνδρῶν πίονα ἔ. Il.12.283, etc.; ἔργ' ἀνθρώπων 16.392, Od.6.259; βροτῶν 10.147; οὔτε βοῶν οὔτ' ἀνδρῶν φαίνετο ἔργα ib.98; ἔργα alone, 16.140, etc.; Ἔργα καὶ Ἡμέραι — the title of Hesiod's work; πατρώϊα ἔ. their father's *lands*, Od.2.22; οὔτ' ἐπὶ ἔργα .. ἴμεν will neither go to our *farms*, ib.127, cf. 252; Ἰθάκης .. ἔργα *the tilled lands* of Ithaca, 14.344; ἀμφὶ ..

Figure 8: Section from the entry on the Greek word *ergon* (»work«) in the Liddell Scott Jones, Greek-English Lexicon (Oxford 1940) p. 683.

The digital version of this Greek-English lexicon was originally digitized (c. 1994–1995) with support from the National Endowment for the Humanities and put online as part of the initial web presence of Perseus Digital Library in 1995/1996. Already in this early incarnation, the digital version exploited the flexibility of the digital medium to make the content intellectually more accessible: (1) once the text was digitized, it could be redisplayed in larger font and the typographic presentation adapted to make the text more readable; (2) once the structure of the text was analyzed and encoded, dictionary entries could be presented according to their hierarchical structure; (3) many of the citations to primary sources could be automatically identified, represented in a more explicit format and converted into machine actionable links. Basic customization was possible: in figure LSJ above, the system knows that the reader has been looking at the *Odyssey* and so all citations to the *Odyssey* have been highlighted – a potentially significant aid when scanning very long entries.

Adding dynamic links to primary sources was a substantial step forward as it changed the cost in time and effort of comparing the abbreviated citations to the conclusions in the article. Many online readers had no access to a library with extensive collections of Greek source texts and many translations do not follow the citation schemes by which Greek editions define particular locations of particular texts. And, of course, many of the Greek quotations are not translated: this dictionary entry, for example, quotes most of Od. 10.98 but only in Greek. The dynamic link makes it possible for readers to jump from the lexicon to a side-by-side Greek text and translation (cf. figure 9).

The approach above is now more than twenty years old and not optimized, but it already has allowed determined readers to get past the Greek and to begin using the English translation to explore the context in which Greek words appeared, the ways in which they are translated and something of the meanings that they conveyed in the original.

Two technical advances, cited above, can enhance the ability of readers to push beyond the translation. The ability to define alignments between words and phrases in the source text and translation, of course, gives readers greater insight into how the two relate to one another, while the extensive morpho-syntactic analysis allows readers to begin seeing how the Greek words fit with one another and what role each plays in the sentence. For now, I will illustrate some of the potential by articulating how readers can more directly explore particular points of both word meaning and grammar that appear in Od. 10.98.

Figure 9: Perseus 4.0 reading environment.[18]

18 »Perseus Digital Library,« Homer, *Odyssey*, accessed March 31, 2018, http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0135%3Abook%3D10%3Acard%3D87.

JUST-IN-TIME GRAMMAR

The reader seeking to understand the Greek of Od. 10.98 can see the basic structure of the sentence. The noun *erga* is the subject of the verb *faineto*. The Treebank visualization above only presents the syntactic information. The full data for these two words, as it appears serialized in xml format, is (cf. figure 10):


```xml
<word id="9" form="φαίνετο" lemma="φαίνω" postag="v3siie---" head="13" relation="PRED_CO" cite="urn:cts:greekLit:tlg0012.tlg002:10.98"/>
<word id="10" form="ἔργα" lemma="ἔργον" postag="n-p---nn-" head="9" relation="SBJ" cite="urn:cts:greekLit:tlg0012.tlg002:10.98"/>
```


Figure 10: Morpho-syntactic analyses of two words in 10.98 serialized as appears in the XML version of the Treebank.

The part of speech tags (attributes of »postag«) indicates that *erga* is a plural noun (»n-p«) and that *faineto* is a singular verb (»v-s«). An observant reader, who had begun to learn the basics of Greek, and who had access to the full morphological information in the Treebank (presumably in a more reader friendly format than that above) should notice an inconsistency: why is the plural noun *erga* the subject of a singular verb? Normally, verbs agree in number with their subjects: singular nouns take singular verbs, plural nouns take plural verbs.

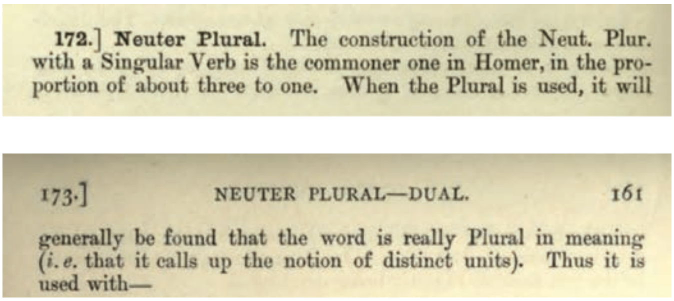
The answer is simple enough. Greek has three grammatical genders: masculine, feminine and neuter. Buried in the postag is the information that *erga* is a neuter noun and neuter plural subjects normally take singular verbs. This phenomenon goes back to Indo-European, from which Greek and many other languages were derived, where neuter plurals were originally collective nouns. Just as we say »every happy family is the same« or »the herd of cattle is grazing,« Greek would say »*ergafaineto*« (or, to preserve the word order in the *Odyssey*: »*fainetoerga*«).

Every standard grammar covers this phenomenon – but how does the reader who is learning Greek by working directly with the Homeric Epics learn this rule? The goal is for readers to learn grammar as they encounter it in real text and then to see where – and how often – a grammatical rule shows up in the corpus that they wish to master. They need this both to reinforce their understanding and to determine what grammatical phenomena are worth practice and which are so rare that they may never pop up again.

Traditional grammars for Greek (and other languages) do not address either problem. On the one hand, there are no links from a statement in a print grammar to every instance of a grammatical rule in a corpus. There are usually not even any meaningful indications of what phenomena are common and what are rare.

Consider a traditional grammar, the 19th century (but still very useful) grammar specifically of Homeric Greek by David Monro.[19] This reference work presents the following information (cf. figure 11).

The Monro grammar is unusual and actually more precise than the twentieth century French grammar of Homeric Greek that most scholars use as their primary reference: Monro actually does provide general statistics: roughly 75% of the time neuter plural subjects take singular verbs. The remaining 25% of the time, the neuter plural subjects take plural verbs in Homer. Of course, the form of the print grammar does not allow him to publish his data or even to explain the basis of this statistic, but at least he provides some indication of how common the plural-neuter + singular-verb pairing is.


172.] **Neuter Plural.** The construction of the Neut. Plur. with a Singular Verb is the commoner one in Homer, in the proportion of about three to one. When the Plural is used, it will

173.] NEUTER PLURAL—DUAL. 161

generally be found that the word is really Plural in meaning (*i. e.* that it calls up the notion of distinct units). Thus it is used with—

Figure 11: Monro on rules of agreement between plural neuter subjects and singular verbs.[20]

Rich linguistic annotation allows us to address this challenge in a systematic way. In the case of *erga* and *phaineto* above, the head element in the Treebank data lets us see that *erga* depends on word 9 – which is faineto. We can then write a query (in Xquery, a graph database or a purpose built program) to ask where and how often plural neuter subjects depend upon singular verbs and

19 David Monro, *A Grammar of the Homeric Dialect* (Oxford 1882), 6, accessed March 31, 2018, https://archive.org/details/grammarofhomeric00monruoft/page/n6.

20 Monro, *A Grammar*, 160, https://archive.org/details/grammarofhomeric00monruoft/page/160.

where they depend upon plural verbs. When I did so, we get the following (cf. figure 12):

PLURAL NEUT SBJ	SINGULAR VERB		PLURAL VERB		
ODYSSEY	72	72%	28	28%	100
ILIAD	121	74%	42	26%	163

Figure 12: Frequencies derived from the Treebank of neuter plural subjects agreeing with singular vs. plural verbs in the Homeric epics.

Monro's statement agrees with what we find when we analyze the Treebank. Plural neuter subjects take singular verbs 72% of the time in the *Odyssey* and 74% of the time in *Iliad.* But beyond confirming what Monro reported, we can now generate links between the paragraph in Monro and every instance where a neuter plural is the subject of a verb. We can thus go beyond the summary and examine the data, deciding for ourselves whether we agree with the analysis or not and seeing immediately that this is a fairly common feature (this query retrieved 193 neuter plural subjects with singular verbs in the 200,000 token corpus of Homer). Readers may want to take the time to internalize this rule if they wish to read with fluency.

And, of course, we can automatically build a link back from Od. 10.98 to paragraph 172 in Monro's Homeric Grammar. Thus the reader puzzling over the plural subject of a singular verb could be directed to the explanation of what was happening. The grammar now becomes a commentary linked to hundreds of passages. And the potential realizable value increases because its contents are now linked to the actual passages which the grammar explain.

The table below includes the first 3 (of 72) instances that a query for »neuter plural nouns with singular verbs« retrieves from the (current) version of the Treebank. In the instances below, the Greek words and corresponding English are highlighted. In the examples below, however, each sentence in the Greek text of the *Odyssey* has been aligned to the corresponding sentence in the English translation. In fact, we can highlight the Greek words with the data in the Treebank – highlighting the English equivalents can be done automatically but not perfectly. Ultimately, we want to have full alignments with at least one translation (cf. figure 13).

[1.159] τούτοισιν μὲν ταῦτα μέλει, κίθαρις καὶ ἀοιδή, [1.160] ῥεῖ᾽, ἐπεὶ ἀλλότριον βίοτον νήποινον ἔδουσιν, [1.161] ἀνέρος, οὗ δή που λεύκ᾽ **ὀστέα πύθεται** ὄμβρῳ [1.162] κείμεν᾽ ἐπ᾽ ἠπείρου, ἢ εἰν ἁλὶ κῦμα κυλίνδει.	These men care for things like these, the lyre and song, full easily, seeing that without atonement they devour the livelihood of another, of a man whose white **bones**, it may be, **rot** in the rain as they lie upon the mainland, or the wave rolls them in the sea.
[1.203] οὔ τοι ἔτι δηρόν γε φίλης ἀπὸ πατρίδος αἴης [1.204] ἔσσεται, οὐδ᾽ εἴ πέρ τε σιδήρεα **δέσματ᾽ ἔχῃσιν:**	Not much longer shall he be absent from his dear native land, no, not though **bonds of iron hold** him.
[3.461] αὐτὰρ ἐπεὶ κατὰ **μῆρ᾽ ἐκάη** καὶ σπλάγχνα πάσαντο, [3.462] μίστυλλόν τ᾽ ἄρα τἆλλα καὶ ἀμφ᾽ ὀβελοῖσιν ἔπειραν, [3.463] ὤπτων δ᾽ ἀκροπόρους ὀβελοὺς ἐν χερσὶν ἔχοντες.	But when the **thigh-pieces were wholly burned**, and they had tasted the inner parts, they cut up the rest and spitted and roasted it, holding the pointed spits in their hands.
Etc. …	

Figure 13: The Greek of the *Odyssey* segmented into sentences, with corresponding English translation, with key words in Greek and English highlighted.

One goal is to make the grammar examples transparent to a reader with as little knowledge of Greek as possible – ideally with no knowledge at all.

This is, of course, only one example and it offers a case where the Treebank has exactly the right data. Morpho-syntactic analyses constitute a core category of information but are hardly exhaustive. Nevertheless, we can add different categories to support different queries. If we stay with the question of when we get plural neuter subjects and plural verbs, one argument is that this happens when the subject describes agents: »people«, »pigs«, »ethnic groups«. Here we might want to have an annotation layer for animate vs. inanimate. The point, however, is that we can, following the lead of Corpus Linguists, add as many layers as we wish to make our statements about corpora far more precise and transparent.

THE WORKS OF MEN AND OF CATTLE

In Od. 10.98, Wilson and Lombardo translate »the works of men and of cattle were not visible there« as »I saw no sign of cattle or of humans« and »there was no sign of plowed fields.« The general meaning is clearly the same as in the Greek and the line is hardly a dramatic highpoint in the epic. Even here, however, there are nuances in the Greek that the English does not capture. I could, like a lexicographer or commentator, summarize my own points and present my thoughts but my point here is to consider how others could develop their own understanding of the text and of what the words mean by examining how each word is used in context. I grew up as large textual corpora for Greek and Latin were becoming available and I quickly realized that I preferred to see how words actually were used in a particular author or genre. With rare words that appeared only a handful of times in surviving Greek, lexica could be helpful – especially if the word was not a compound for which I could clearly deduce the meaning from its components. In working intensively on the Greek historians Herodotus and Thucydides, I found myself turning less to dictionaries and simply seeing for myself how words were used in two authors. The big – but general – Greek lexicon simply could not provide detailed coverage for the usage and meaning of relatively common words in major authors. By contrast, after examining a dozen or so passages, I often came up with a sense of what the word meant in the two historians (and often that its usage and meaning were quite different).

To explore the meaning of the phrase »works of men and cattle«, I searched the Treebank of the *Odyssey* for instances where one or more genitive nouns modified *ergon* (»work«, singular) or *erga* (»works«, plural). I include the first five instances of this pattern (all of the instances that appear in the *Odyssey* before Od. 10.98). The translation equivalents for *ergon/erga* are underlined and the whole phrase (with the genitive) is in bold (figure 14).

First, the translation equivalents show how hard it would be to track the usage of a particular Greek word just by using the English: ergon/erga is translated as »deeds«, »tasks«, »work«, »tilled fields«, and »handiwork« all (except for »tilled fields«) reasonably close but each different.

Second (and, I think, more interesting), we can see how particular erga belong to different groups. In passage 1, there are works of gods and men and we see a work by the god Hephaestus in passage 3. Telemachus, brusquely asserting the role of dominant male in the household, orders Penelope to focus on her own tasks (as a woman) – and we hear explicitly of the »works of women« in passage 5. Passage 4 refers to the country (literally the fields) and to the works of human beings (with the word anthrôpos, human being, appearing rather than a form of anêr, which is for males). These passages show us something of how the Homeric epic divides work between gods and mortals, on the one hand, and between men and women, on the other. The phrase »the works of cattle and of men« in Od. 10.98 points to a schematic way in which the language of the *Odyssey* frames the world. The translations of Wilson and Lombardo capture the basic meaning but access to the Greek allows readers to explore other assumptions built into this very basic sentence. Od. 10.98 is not a dramatic moment or a famous passage – it is quite pedestrian – but even this sentence can open a window into a different world-view if we can trace patterns within this line (such as work(s) + genitive noun(s)).

1	„[1.337] Φήμιε, πολλὰ γὰρ ἄλλα βροτῶν θελκτήρια οἶδας, [1.338] **<u>ἔργ᾽</u> ἀνδρῶν τε θεῶν τε,** τά τε κλείουσιν ἀοιδοί:	Phemius, many other things thou knowest to charm mortals, **<u>deeds</u> of men and gods** which minstrels make famous.
2	[1.356] ἀλλ᾽ εἰς οἶκον ἰοῦσα **τὰ σ᾽ αὐτῆς <u>ἔργα</u>** κόμιζε, [1.357] ἱστόν τ᾽ ἠλακάτην τε, καὶ ἀμφιπόλοισι κέλευε [1.358] ἔργον ἐποίχεσθαι:	Nay, go to thy chamber, and busy thyself with **thine own <u>tasks</u>**, the loom and the distaff, and bid thy handmaids ply their tasks;
3	[4.615] ἀργύρεος δὲ [4.616] ἔστιν ἅπας, χρυσῷ δ᾽ χείλεα κεκράανται, [4.617] **<u>ἔργον</u> δ᾽ Ἡφαίστοιο**.	All of silver it is, and with gold are the rims there of gilded, **the <u>work</u> of Hephaestus;**
4	[6.259] ὄφρ᾽ ἂν μέν κ᾽ ἀγροὺς ἴομεν καὶ **<u>ἔργ᾽</u> ἀνθρώπων**, [6.260] τόφρα σὺν ἀμφιπόλοισι μεθ᾽ ἡμιόνους καὶ ἅμαξαν [6.261] καρπαλίμως ἔρχεσθαι:	so long as we are passing through the country and the **<u>tilled fields</u> of men** go thou quickly with the handmaids behind the mules and the wagon,
5	[7.95] ἐν δὲ θρόνοι περὶ τοῖχον ἐρηρέδατ᾽ ἔνθα καὶ ἔνθα, [7.96] ἐς μυχὸν ἐξ οὐδοῖο διαμπερές, ἔνθ᾽ ἐνὶ πέπλοι [7.97] λεπτοὶ εὔννητοι βεβλήατο, **<u>ἔργα</u> γυναικῶν**.	Within, seats were fixed along the wall on either hand, from the threshold to the innermost chamber, and on them were thrown robes of soft fabric, cunningly woven, **the <u>handiwork</u> of women**.
	etc.	

Figure 14: The Greek of the *Odyssey* segmented into sentences, with corresponding English translation, with key words in Greek and English highlighted.

FUTURE WORK

The examples provided above are clearly only initial steps in the evolution of smart texts – an evolution that will probably accelerate and continue for many years to come. Aside from enhancing every aspect of the work outlined above, areas that we can immediately address include the following:

Of course, we have a great deal of work to do on analyzing and representing a wide range of cultural features, such as geo-spatial relationships and social networks, that provide fundamental context for understanding. Of particular relevance to the examples of grammar and of lexicography could be a more literal glossing layer which could convert information such as »*phaineto* – 3rd sg middle-passive indicative active of *phaino*, ›to show‹« into a gloss such as »he/she/it showed itself, he/she/it *appeared*.« With the detailed Greek-English lexica available in openly-licensed, machine-readable form we have a great deal of information with which to work.

We need to make better use of every relevant technique from machine learning. Recently, advances in hardware power have made computationally demanding neural network based methods more practical. Research and development have, as a result, improved the tools at our disposal to exploit neural nets. But we need to exploit naive Bayes classifiers, support vector machines, and other approaches at our disposal.

We need to develop a critical understanding of the emerging audience who wish to grapple with sources in languages that the vast majority of human beings do not know – and probably will not know – whether those sources are in ancient languages (such as Homeric Greek or Sanskrit), modern languages spoken by smaller populations (such as Latvian or Croatian), or modern languages that have large communities of native speakers but that are not widely spoken (such as German or Persian). This emerging audience will consist of young people and of people beyond the intellectual networks of European and North American education. This requires data from focused discussions and interviews, from freely and intentionally shared usage data, and from any source that proves useful.

We need to develop robust models to engage contributors from around the world for tasks such as translation, both of source texts and of the lexica, grammars, and secondary sources that shed light upon them. While we have initial morpho-syntactic analyses for the Homeric epics, other classes of annotation need to be added (e.g., co-reference annotation which specify, for example, the subjects and objects of verbs and would allow us to compare the verbs of which Achilles and Odysseus were the subject). Of course, new annotations will emerge to answer questions that we have not yet anticipated. And only a small fraction of surviving Ancient Greek has received any systematic annotation, linguistic or otherwise (the 1 million+ words of Ancient Greek Treebank data covers c. 1% of surviving text).

CONCLUSIONS

Smart Texts assume the existence of a small, but dynamic, audience who is curious about what lies beyond the surface of a translation and about how the world looks as we understand in the terms of the source text before us.

Not every reader will make the kinds of connections that I suggested above – and many readers may not agree with the inferences that I have drawn here. But every reader of a »Smart Homer« *could* explore such connections and *could* develop their own ideas based upon exploring patterns within the text itself in a way that is simply not possible for readers with an English translation and a traditional Greek text. Will readers explore the Greek on their own? Some, for sure, will – and for some casual exploration will lead to ultimate mastery. How many is unclear but if a »Smart Homer« can enable even one new reader to push beyond translations and engage directly the language of Homer, the »Smart Homer« will have, in some small measure, changed the world.

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HISTORICAL CRITICAL EXEGESIS AND THE REAPPRAISAL OF THE BEGINNINGS OF CHRISTIANITY IN THE DIGITAL AGE[1]

SOHAM AL-SUADI

INTRODUCTION

Access to digital copies and digitized sources facilitates profound and intensive study of sources. This is the basis for New Testament exegesis. The methodical approach thus causes a rise of new questions. While at the beginning of historical-critical exegesis the quest for the historical Jesus stood in the foreground, it is now the question about the plurality of early Christianity. This contribution will present the adaptability of historical-critical exegesis in relation to the historical Jesus question and describe how methods have changed in the digital age. The potential of the method is discussed and the necessity of interdisciplinary further development of studying ancient sources will be pointed out. In this context I will discuss the thesis that only with the digital turn historical-critical exegesis reaches its full spectrum of meaning for scientific investigation of diverse early Christianity and that this has far-reaching cultural and humanistic implications.

HISTORICAL-CRITICAL EXEGESIS, THE QUEST FOR THE HISTORICAL JESUS AND THE EDITIONS OF THE GREEK NEW TESTAMENT

Theology in general and New Testament scholarship in particular are in many respects regarded as parental to all disciplines of humanities. Since enlightened scientific investigation of the New Testament is associated with the emergence and development of philological, literary, historical, socio-historical and philosophical disciplines, I would like to focus on a central method,

1 I would like to express my sincere gratitude to Dr. Daniel Pauling for his support and inspiration in working on our common research interests. I would like to thank Mrs Fiona Alsfasser for the translation of my paper. She also did the translation of all the quotations in English.

historical-critical exegesis, which was already interdisciplinary in its beginnings and was repeatedly supplemented as a canon of methods.

In order to put historical-critical exegesis in its position in the digital age and to investigate its potential within we have to point out the fact that this method already has a long tradition in the history of scholarship and sciences.[2] Starting point for sound investigation of the New Testament under consideration of enhanced development of scientific methods is a differentiating view on the text basis. In 1514, the publication of the first Greek edition of the New Testament laid this foundation.[3] Erasmus of Rotterdam who published a Greek edition of the New Testament in Basel in 1516 made the Greek text accessible to a broader public.[4] The so-called Textus Receptus was based on minuscules from the 12th century and the Vulgate Bible which Erasmus had access to in Basel.[5] Luther used Erasmus's second edition and considered it to be particularly worthy.[6] Apart from a Greek version a critical apparatus

2 Contents about development of historical-critical method and editions of the Greek New Testament are based on different templates by me and my predecessors who taught New Testament studies at Theological Faculty of Bern University: Moysés Mayordomo, Urs von Arx, Nadja Boeck, Stefan Wenger, Bettina Kindschi, Daniel Meister. Wherever possible I added respective footnotes at the relevant passages in the text. For the purpose of this paper I newly compiled the material, supplemented and/or corrected it.

3 The so-called Complutensian Polyglot Bible, a multi-lingual bible edition was printed in 1520 incl. the Old Testament taken from Hebrew, Septuagint and Vulgate bibles as well as the New Testament taken from the Greek text and the Vulgate. For information about history of compilation and the Greek tradition of »most ancient manuscripts sent to Cardinal Jimenez by Leo X from the Vatican Library« (62) for the Complutensian Polyglot Bible see: Jorge L. Valdes, »Reclaiming the Lost Tradition: Jimenez and the Complutensian Polyglot,« *Proceedings* (Grand Rapids, Mich.) 16 (1996).

4 Edwin M. Yamauchi, »Erasmus' Contributions to New Testament Scholarship,« *Fides et historia* 19, no. 3 (1987). Yamauchi describes the connection between Erasmus and the Complutensian Polyglot Bible: »Though Erasmus would be credited with the first printed and published Greek New Testament in 1516, a Greek New Testament had actually been printed before this in the Complutensian Polyglot, but was not circulated until later.« (9 f).

5 More recent studies on Erasmus's edition of the Greek New Testament: Martin Wallraff, Silvana Seidel Menchi, and Kaspar von Greyerz, ed., Basel 1516: *Erasmus' Edition of the New Testament*, vol. 91 (Tübingen: Mohr Siebeck, 2017); Yamauchi, »Erasmus' Contributions to New Testament Scholarship,« 10 f. Patrick Andrist, »Structure and History of the Biblical Manuscripts Used by Erasmus for His 1516 Edition,« in *Basel 1516: Erasmus' Edition of the New Testament*, ed. Martin Wallraff, Silvana Seidel Menchi, and Kaspar von Greyerz (Tübingen: Mohr Siebeck, 2017), 84: Andrist lists the following codices and comments that were available to Erasmus: i. Basel, UB, Codex AN IV 2 (Ragus. 12, GA 1): Acta, Epistulae et Evangelia; ii. Basel, UB, Codex AN IV 1 (Ragus. 11, GA 2): Evangelia; iii. Basel, UB, Codex AN IV 4 (Ragus. 13, GA 2815): Acta et Epistulae; iv. Basel, UB, Codex AN IV 5 (Ragus. 14, GA 2816): Acta et Epistulae; v. Basel, UB, Codex AN III 11 (Ragus. 15, GA 2817): Epistulae Pauli cum catenis; vi. Basel, UB, Codex A III 15 (Ragus. 27[a], GA 817): Theophylact. Bulg., Comm. in Evangelia; vii. Oxford, Bodl., Codex Auct. E.1.6 (Ragus. 27[b], GA 2105): Theophylact. Bulg., Comm. in Epist. Pauli; viii. Augsburg, UB, Codex I.1.4° 1 (Ragus. 16, GA 2814): Andreas Caesar., Comm. in Apocalypsin.

6 Yamauchi, »Erasmus' Contributions to New Testament Scholarship,« 16.

and an enumeration of verses are indispensable components to contemporary exegesis. It should not go unmentioned that this access to sources of the New Testament was preceded by scientific development. The printer Robert Estienne (1499/1503–1559), who also used the edition by Erasmus, added an enumeration of verses to it which is valid to this day.[7] This multilingual edition was compiled from the Vulgate Bible and Erasmus's New Testament edition.

> There is also a Harmonia Evangelica (wanting in my copy) and a copious index, the latter being taken from some early printed Latin Bible. When we turn to the text, we find that the Greek stands between the Vulgate and the Erasmic renderings, marked at the top of the pages by V. and E. respectively, the arrangement being such that the Vulgate has always the inner place, the Erasmic the outer; and between the Greek and the Erasmic stand the verse numerations in a column by themselves.[8]

The printed editions by Robert Estienne founded the material preconditions to critically work with sources and editions of the New Testament. In other words: This publication method was essentially needed in order to develop methods that would facilitate working with sources on the one hand and further developing textual work on the other. Further, it became obvious that publications and editions could be adapted to state-of-the-art research ever since. This is evidence for the high adaptability of forms of publication that reflect the handling of ancient sources.[9]

The following section will focus on illustrating the adaptability of publication and edition forms as well as scientific methods. The science-historical interdependency between the editions of the New Testament, historical-critical exegesis and the quest for the historical Jesus will be of particular interest.[10]

7 For sources of *editio regia* see: J. K. Elliott, »Manuscripts Cited by Stephanus,« *New Testament Studies* 55, no. 3 (2009). A Study on the Parisienne Printer: Elizabeth Armstrong, Robert Estienne: Royal Printer (Cambridge: Cambridge University Press, 1954).

8 James Rendel Harris, »Some Notes on the Verse-Division of the New Testament,« *Journal of Biblical Literature* 19, no. 2 (1900). Harris shows pages from the edition.

9 See also: Ulrich Wilckens, *Historische Kritik der historisch-kritischen Exegese: Von der Aufklärung bis zur Gegenwart,* Theologie des Neuen Testaments (Göttingen: Vandenhoeck & Ruprecht, 2017).

10 See also: Erich Grässer, »Die historisch-kritische Methode als Verstehenshilfe. Beispiel: Die Leben-Jesu-

Ever since Johann Salomo Semler (1725–1791), historical-critical exegesis has been investigating the difference between theology and religion and, in its beginnings, made the claim to deduce the original meaning of the text. This goes hand in hand with reflecting one's own position and pursuing theology at a critical distance from one's subject. Semler deduced this aspiration among others from his interpretation of Luther.

> From this, following his trail, grew the obligation now neither »to restrict the private knowledge and private parts by external regulations about public form of teaching and public acts of religion« nor to hypostasize any religious »private part« into the rank of a church doctrine. In a final sigh Semler made clear, however, how far he still thought his own present to be distant from the ability to distinguish spirit and letters in Luther's legacy: »We should imitate his great charitable spirit, his exercises in prayer; but we learned his words«.[11]

With respect to early Christianity this also includes the necessity to distinguish the content of belief in early Christianity from contexts of religious studies of the New Testament. It is obvious that the development of a canon of methods that unites linguistic, literary, social-historical and historical competences in the subject matter is required by research history and that this is connected to the quest for the historical Jesus. The latter is so relevant for the development of a historical-critical canon of methods because it was widely assumed that the beginning of the text is connected to the beginning of Christianity itself. And this beginning indeed has a long research tradition of being connected to words and deeds of the historical Jesus.

We will shortly look at the phases of the so-called quest for the historical Jesus connected to the development of a historical-critical canon of methods

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Forschung,« in *Begegnung mit Jesus?*, ed. Albert Raffelt (Düsseldorf: Patmos, 1991). compare: Harold H. Oliver, »Implications of Redaktionsgeschichte for the Textual Criticism of the New Testament,« *Journal of the American Academy of Religion* 36 (1968): 42: »there are certain functional similarities between the search for the original text of the New Testament and the quest for the historical Jesus.«

11 Albrecht Beutel, »Martin Luther im Urteil der deutschen Aufklärung: Beobachtungen zu einem Epochalen Paradigmenwechsel,« *Zeitschrift für Theologie und Kirche* 112, no. 2 (2015). Translated by Fiona Alsfasser. Beutel quotes: Gottfried Hornig, Johann Salomo Semler Studien zu Leben und Werk des Hallenser Aufklärungstheologen, Hallesche Beiträge zur europäischen Aufklärung (Tübingen: Niemeyer, 1996), 182 and Johann Salomo Semler, *D. Joh. Salomo Semlers Lebensbeschreibung von ihm selbst verfaßt* (Halle1782), 189.

in order to be able to critically contrast the relevance of the method with the research question.

Hermann Samuel Reimarus (1694–1768) was the first to distinguish between annunciation through Jesus and the words of his disciples. In his opinion Jesus is located within the Jewish context of his times and he distinguishes between earthly and political action of the historical Jesus and the intentions of his disciples. Gerd Theissen aptly summarizes this »revolution hypothesis«.

> According to Reimarus Jesus' sermon (as in Mk l, 14 f) has two topics: Repentance and God's kingdom. He demands repentance to a life of charity. With reference to Jesus' preaching of the kingdom of God Reimarus believed himself to be able to prove that it contained a revolutionary dream: political liberation from the Romans. Jesus wanted to realize the ancient dream of Judaism of a Messiah who would expel the strangers. For this purpose, he gathered disciples around himself who had been fishermen and craftsmen before. They had hoped to reign over Israel together with Jesus after the overthrow. Cleansing the temple was supposed to be the sign for revolution but it failed due to a lack of echo among the population and the resistance of the Romans.[12]

Reimarus ascribes to the disciples the fact that they wanted to establish Christianity and in return would have accepted the deception of historical truths. Jesus walking on the lake and also the empty grave was mere staging born of the creativity of the disciples and not historical objectivity. Purely historically speaking one must distinguish between rationalism and supernaturalism. With respect to research history this distinction represents an effort to make a distinction between historically reliable facts and expressions of faith. While Johann Salomo Semler (1725–1791) separated the origin of the Holy Scripture from historical perspectives from the revelation of God's Word, which aimed at moral improvement, Gotthold Ephraim Lessing (1729–1781) distinguished between so called eternal truths of reason and accidental truths of history. It is not Lessing's concern to turn against revelation and also not

12 Gerd Theissen and Annette Merz, *Jesus als historische Gestalt: Beiträge zur Jesusforschung: zum 60. Geburtstag von Gerd Theissen*, Forschungen zur Religion und Literatur des Alten und Neuen Testaments (Vandenhoeck & Ruprecht, 2003), 296. Translated by Fiona Alsfasser.

to depreciate supra-naturalist elements of Christian tradition. In his interpretation of the Christian understanding of revelation the following becomes particularly evident:

> For events in history the opposite is principally possible. This understanding is congruent with the Christian understanding of revelation because the deed of redemption through Jesus Christ is understood as execution of God's free will. Christian belief does not gain its content from logical deductions.[13]

He merely opposes considering miracles and prophecies as »evidence« or as »unique features« of early Christianity.[14] It is therefore that the distinction between religion as necessary truths of reason or natural theology and the Bible as accidental truths of history was coined by Lessing.[15] Lessing struggles as much as Semler with the intentions of Bible interpretations with respect to historicity.

> If no historic truth can be demonstrated, nothing can be demonstrated by means of truths of history either. This means: Accidental truths of history can never become necessary truths of reason.[16]

In order to still ascribe meaning to the New Testament Lessing claims that the Bible has a pedagogical function: to help man in the development from revelation to reason. Lessing sees man motivated by the biblical stories to do good for the sake of good.

With Semler, Reimarus and Lessing, theology in general and New Testament science in particular stands before the end of verbal inspiration and at the beginning of developing necessary methods to deal with the literary and theological pluralism of early Christianity.

13 Harald Schultze, »›Zufällige Geschichtswahrheiten‹: Lessing und Semler im Streit,« *Zeitschrift für Theologie und Kirche* 98, no. 4 (2001): 453. Translated by Fiona Alsfasser.

14 This also applies to the criticism of Christian understanding of absoluteness. For this, see: Carl E. Braaten, »The Problem of the Absoluteness of Christianity,« *Interpretation* 40, no. 4 (1986): 342.

15 For the argument between Lessing and Semler and the abandonment of the assumption of verbal inspiration: Schultze, »›Zufällige Geschichtswahrheiten‹: Lessing und Semler im Streit.«

16 Lessing, »Über den Beweis des Geistes und der Kraft in: Sämtliche Schriften X,« ed. K. Lachmann, 2. Aufl. (1856), 38. Translated by Fiona Alsfasser.

The following 19th century is then the century of liberal research that makes fundamental decisions in literary analysis of the New Testament. In the quest for the historical Jesus David Friedrich Strauss (1808-1874) worked on the connection of myth and history. He deducted his concept of myth from his Old Testament studies and transferred it to the Gospels.[17] The central point was that the myth is unintentionally poetic saga which can be derived from thesis and antithesis. He interpreted the Jesus tradition as a synthesis of the interpretation of supra-naturalism and rationality. Following Gerd Theissen, it can be stated: »With Strauss, the betrayal hypothesis vanished from historical-critical research.«[18] He deemed possible that in biblical science the human idea was stripped by historical science and therefore considered it possible to make miracles clear to the enlightened consciousness. For Strauss, it is right that

> a historical interest in understanding [was the driving force]. He explicitly established this principle: Not his religious philosophy (taken over from Hegel) decides what is considered historical and what is not but solely the analysis of historical sources. [19]

The concept of an optimistic idea of development, which thinks historical life forms as organically progressive, is typical for Strauss and this part of the 19th century.[20] The outstanding event in the 19th century was the discovery of Codex Sinaiticus in St. Catharine's Monastery on Mount Sinai by Constantin von Tischendorf in the years 1844 and 1859.[21] In addition to the enthusiasm for the sources of the New Testament, which had driven Tischendorf,[22] he represented a voice of exegesis in a competitive situation about the power of interpretation.

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17 David Friedrich Strauss, *Das Leben Jesu, kritisch bearbeitet*, 2 vols. (Tübingen: Osiander, 1835/1836).

18 Theissen and Merz, *Jesus als historische Gestalt*, 298.

19 *Ibid,* 299. Translated by Fiona Alsfasser.

20 Henning Theissen, »Der irdische Jesus und die Praxisbedeutung der Christologie,« *Evangelische Theologie* 77, no. 3 (2017): 229.

21 Konstantin von Tischendorf, *Die Sinaibibel: Ihre Entdeckung, Herausgabe und Erwerbung* (Leipzig: Giesecke & Devrient, 1871). Today digitized: www.codexsinaiticus.org.

22 Special attention is paid to contributions in this volume by Christfried Böttrich and Gotlind Ulshöfer.

> He was a gifted and ambitious New Testament scholar of German Lutheran persuasion, who pitted himself against David Friedrich Strauss (1808–1874), Ferdinand Christian Baur (1792–1860), and the Tubingen School – all at their height of influence in the 1840s. Tischendorf believed that the one effective antidote to Strauss and to Tubingen and its impious ilk was to compile and publish a critical edition of the New Testament based on the most pristine resources.[23]

With the discovery and publication of a biblical source that could be compared to the reconstructed Greek New Testaments, the question of a *sensus-scriptorum* became evident. Can one still speak of one sense, if each source has its own theology and image of early Christianity? Completely committed to liberal and enlightened science, Johann Philipp Gabler (1753–1826) distinguished between biblical theology (historical character) and dogmatic theology (didactic character).[24]

> At its core, Gabler's distinction between biblical and systematic theology marks an important foundation stone to this day. Biblical theology is essentially a historical discipline calling for an inductive and descriptive method. We must carefully distinguish between biblical and systematic theology before we can accurately describe the theology of the biblical writers themselves.[25]

The historical content of the biblical writings is also relevant for Gabler, since the biblical, in contrast to dogmatic theology, emphasizes the historical and not the didactic character of the Bible. The task of biblical theology would be to search for the sensusscriptorum with the help of a historical-exegetic procedure. In contrast, dogmatic theology is determined by rationality, denominational affiliation and philosophical topicality. Up to the present debate it is decisive that Gabler no longer understood biblical passages merely as

23 Michael D. Peterson, »Tischendorf and the Codex Sinaiticus: The Saga Continues,« *The Greek Orthodox Theological Review* 53, no. 1–4 (2008): 125.

24 Contextualization into biographical aspects is provided by: Magne Sæbø, »Johann Philipp Gablers Bedeutung für die Biblische Theologie: Zum 200-jährigen Jubiläum seiner Antrittsrede vom 30 März 1787,« *Zeitschrift für die alttestamentliche Wissenschaft* 99, no. 1 (1987): 2–4.

25 Andreas J. Köstenberger, »The Present and Future of Biblical Theology,« *Themelios* 37, no. 3 (2012): 445.

proof of dogmatic statements (dicta probantia), but rather as an independent source (genus historicum). For Gabler, the demarcation from verbal inspiration therefore stands in the background of his considerations. For the historical-critical exegesis in the digital age, his considerations lay the foundation for an adequate historical examination of the text and a comparison of texts with each other.

Heinrich Julius Holtzmann (1832–1910) is regarded founder of literary criticism[26] in biblical sciences and of the so-called two-source or two-document hypothesis. Starting from the observation that the synoptic gospels have great similarities and differences, the two-source hypothesis assumes that the Gospel of Mark, together with the sayings collection from oral tradition called Q, formed the literary basis for the Gospels of Luke and Matthew. Apart from the addition of special material contained in the Gospels of Luke and Matthew, the two-source hypothesis does not assume any other written sources. This theory is also associated with a conflict over the interpretive power of the connection between biblical sources.

> Although the priority of Matthew and Luke was still defended in Tübingen and other places, Heinrich Julius Holtzmann of Heidelberg proclaimed in a book of 1863 that modern studies had established the absolute truth of the two-source hypothesis.[27]

For Holtzmann, the question of the life and death of the historical Jesus was an essential component of his literary criticism, because the Gospel of Mark was not only put before the other Gospels as a text, but also as a narrative, as it was considered original.[28] The Gospel of Mark provides the outline of the life of Jesus, which experienced a turning point with Mk 8 and the first announcement of Jesus' suffering and resurrection. For Holtzmann, the advantages

26 Nicklas points out that »source criticism« and »literary criticism in the proper sense« must be differentiated. Tobias Nicklas, »Literarkritik und Leserrezeption: ein Beitrag zur Methodendiskussion am Beispiel Joh 3,22–4,3,« *Biblica* 83 (2002): 176.

27 Bo Ivar Reicke, »From Strauss to Holtzmann and Meijboom: Synoptic Theories Advanced During the Consolidation of Germany, 1830–70,« *Novum testamentum* 29, no. 1 (1987): 2.

28 Not least here the influence of Hegel's philosophy is comparable with Weisse: »After reading Strauss's publication of 1835–36 with its mythological conclusions, this professor of philosophy [Weisse] at Leipzig found it necessary to secure a more historical portrait of Jesus.« Reicke, »From Strauss to Holtzmann and Meijboom,« 7.

of the two-source hypothesis were primarily relevant: After all, Matthew and Luke agree in order when they follow the Gospel of Mark, most of Mark's material is also found in Matthew and Luke, and Matthew and Luke made independent linguistic and factual improvements as well as cuts and reductions to the Mark material. The unresolved problems of the two-source theory – Mark's special material, the different use of Mark material in Matthew and Luke (Matthew leaves out only little of Mark's material but in Luke there are larger omissions – the »Luke gap«), the »minor agreements« (similarities in Matthew and Luke against the Mark original) and the question of the literary dependence of the fourth gospel[29] – these problems are accepted for the sake of a good reconstruction of the original gospels regarding the quest for the historical Jesus. In other words, advantages and disadvantages of a method were made dependent on one question in order to work on problems that only arise within this question's horizon up to this day. These discussions coincide with the first edition of the Novum Testamentum Graece of Württembergische Bibelanstalt in 1898.[30] Since the first edition, there has been the claim that textual criticism is a historical-critical science by definition which determines what is, and which precisely must not bring in subjective understanding or even arbitrariness in its decision-making to an undue degree.[31] Eberhard Nestle (1851–1913) was responsible for this edition which was based on a comparison between the editions of Tischendorf, Westscott/Hort and Weymouth.[32]

Critique of the text-critical, theological and historical decisions also characterizes the third phase of the quest for the historical Jesus which was not least also a critique of the reconstruction of the New Testament texts and of literary criticism. Albert Schweitzer criticized the projective character of the life-of-Jesus pictures and drew attention to the fact that the Gospel of Mark

29 Heinrich Julius Holtzmann, »Unordnungen und Umordnungen im vierten Evangelium,« *Zeitschrift für die neutestamentliche Wissenschaft und die Kunde der älteren Kirche* 3 (1902): 59: »[D]ass es im vierten Evangelium weniger auf eine historische Darstellung überhaupt abgesehen ist, als vielmehr auf Darlegung einer selbständigen Gedankenwelt, die nur mühsam, ja gewaltsam in die Form einer Geschichte Jesu gekleidet wird.«

30 Wilhelm Bousset, »Zur Methodologie der Wissenschaft vom Neuen Testament,« *Theologische Rundschau* 2 (1899).

31 Barbara Aland, »Welche Rolle spielen Textkritik und Textgeschichte für das Verständnis des Neuen Testaments?: Frühe Leserperspektiven,« *New Testament Studies* 52 (2006): 304.

32 Anthony J. Forte, »Observations on the 28th Revised Edition of Nestle-Aland's Novum Testamentum Graece,« *Biblica* 94, no. 2 (2013): 269.

was an expression of church dogmatic rather than a history of Jesus. He emphasized that only the kerygmatic character of the Jesus tradition could be examined.[33] On the contrary, *Rudolf Bultmann* (1884–1976) turned to the kerygmatic Jesus as research subject in his Dialectical Theology (1918–1968).[34] In the context of an existentialist philosophy, Bultmann assumed that the essence of man was not based on historical knowledge, but was a decision based on the call of God. For Bultmann, who was above all interested in the further development of the history of form and editing, research concerning the historical Jesus stood above all for a struggle for liberation from the paternalism of the church.[35] The decisive finding is that New Testament theology has little interest in the historical Jesus. Even though religious-historical investigation has established anachronisms at many points, New Testament research increasingly turned to contextualizing Jesus also theologically in Judaism. *Ernst Troeltsch* (1865–1923) who, with his strict distinction between dogmatic and methodology, can be understood as founder of modern methodology, described theology and above all research into the history of religion by three core concepts: Critique, analogy and correlation.[36] By criticism he referred to the fact that any investigation can only make probability judgments, since historical research, unlike empirical research, cannot make absolute judgments. Since the methodological doubt always remains, historical sciences only suc-

33 Albert Schweitzer, *Geschichte der Leben-Jesu-Forschung* (Tübingen: J. C. B. Mohr (P. Siebeck), 1926).

34 Rudolf Bultmann, *Die Geschichte der Synoptischen Tradition, Forschungen zur Religion und Literatur des Alten und Neuen Testaments* (Göttingen: Vandenhoeck & Ruprecht, 1921); »Das Problem einer theologischen Exegese des Neuen Testaments,« *Zwischen den Zeiten* 3 (1925). In the latter Bultmann differentiates »zwischen der irrigen ›Auffassung der menschlichen Existenz als einer verfügbaren, gesicherten‹ und der sachgerechten Auffassung, daß unsere Existenz für uns nicht verfügbar, gesichert ist, sondern ungesichert, ›problematisch‹« from: Ulrich H. J. Körtner, »Die Gegenwartsbedeutung Rudolf Bultmanns: Zwei Neuerscheinungen anlässlich seines 125. Geburtstags,« *Theologische Rundschau* 75, no. 4 (2010): 487.

35 Hermann Gunkel is considered founder of form criticism. Bultmann also »dankt im Vorwort der 1. Auflage seiner ›Geschichte der synoptischen Tradition‹ (1921) denen, ›von denen ich in erster Linie für diese Arbeit gelernt habe‹. Es sind ›von älteren Forschern D. F. Strauß, W. Wrede und J. Wellhausen; es ist aus meiner Studentenzeit H. Gunkel, dem ich auch weiterhin reiche Förderung verdanke‹«. So quoted in: Walter Schmithals, »Johannes Weiss als Wegbereiter der Formgeschichte,« *Zeitschrift für Theologie und Kirche* 80, no. 4 (1983): 389. Schmidthals further assumes that »1908 Johannes Weiß also nicht nur ›Form‹ als technischer Ausdruck im Sinne der ›Formgeschichte‹, sondern auch das Programm einer Formengeschichte der synoptischen Überlieferung, wie es Bultmann in seiner ›Geschichte der synoptischen Tradition‹ ausführen wird.« Schmithals, »Johannes Weiss als Wegbereiter der Formgeschichte,« 403.

36 Ernst Troeltsch, »Über historische und dogmatische Methode in der Theologie,« in *Gesammelte Schriften 2*, ed. Ernst Troeltsch (Aalen: Scientia, 1962). See also: Stewart E. Kelly, »Miracle, Method, and Metaphysics: Philosophy and the Quest for the Historical Jesus,« *Trinity Journal* 29, no. 1 (2008): 54–57.

ceed in expressing historical events on the one hand and their relation to today's significance on the other hand in the analogy. Because each process is related to the other, correlative relationships are decisive for historical development. Troeltsch' criticism of Christianity's claim to absoluteness, which can no longer be sustained because of the historical relativism associated with the three main features of scientific work, is unmistakable. Even if one must clearly distinguish oneself from a historical description in analogies, these religious-historical questions have above all been reflected in the introduction of a *difference criterion* within the quest for the historical Jesus.[37]

The fourth phase of the historical Jesus quest was characterized by the fact that a distinction was made between pre-Easter and post-Easter reports and that only a minimal number of »genuine« Jesus words was assumed. Since the identity of Jesus was not questioned in any early Christian scripture, the interest in the historical person for the development of early Christianity dwindled. Jesus was characterized as ethicist, prophet, or rebel who was either a nationalist creating a new concept of God, continuing the series of prophets and questioning the rites, or wanting to create a worldly kingdom. It is easily imaginable that the writings of the New Testament do not paint a uniform picture, that characterizations are quite contradictory, and that they can be considered historical to a limited extent only. In order to work on a more reliable historical basis again, exegetes began to include historical plausibility as a criterion for their investigations. In order to be able to make statements about historical plausibility, socio-cultural studies were included as well as the embedding of early Christianity in its religious-philosophical context. In this context non-canonical sources were taken into consideration for understanding of early Christianity as well as canonical sources. *In the so-called Third Quest*, the fifth phase now, more and more references were made to the »remembered« instead of the »historical« Jesus because every text was now attributed with the potential to convey the memory of a historical person apart from historic reconstruction.

Based on the 13th edition of the Greek New Testament (1927), which contained a text-critical apparatus designed to encourage the user to understand the text-critical decisions of the editors, Erwin Nestle (1883–1972)

37 Gerd Theißen and Dagmar Winter, *Die Kriterienfrage in der Jesusforschung: Vom Differenzkriterium zum Plausibilitätskriterium* (Göttingen: Vandenhoeck & Ruprecht, 1997).

took over the editorial duties from his father. When the 21st edition was published in 1952, Kurt Aland (1915–1994) became co-editor. Some years later, in 1959, the Institute for New Testament Textual Research was founded in Münster. In the 25th (1963), 26th (1979) and 27th edition (1986) the text-critical apparatus was revised and, where necessary, adapted. The apparatus was revised for the 28th edition (2012) and findings of the research conducted on the Editio Critica Maior of the Greek New Testament were included.

It is interesting that in the course of research history methods have been adapted to the respective questions and that there has been a successive extension of the methodological canon. In other words, socio-historical research has not replaced textual criticism but has supplemented it. The problem with this extension is that the methods answer very different questions and are not unconditionally compatible with each other: Harmonizing literary critical investigations, which pursue the goal of reconstructing an original text, with religious studies analyses, which clearly point to a plurality of early Christianity, is no doubt problematic. Nevertheless, the overview of the history of research has proven that the methods themselves are far from outdated. Because they have been further developed throughout the history of research by opening up new sources, developing linguistic analyses and undertaking socio-political determinations of relations to antiquity, it is necessary to ask how method and question relate to each other.

METHODS AND PROBLEMS IN THE DIGITAL AGE

For the 21st century a general consensus can be observed that the historical Jesus cannot and will not be investigated because little relevance is attached to the importance of the historical person for the question of the beginnings of Christianity. This criticism also includes attempts about the so-called »remembered Jesus«, since here nevertheless a historicity of the Son of God is implied. The focus on individual historical persons and the original texts connected with it leads to a linear approach to early Christianity which excludes plurality from the beginning. Plural social realities are minimized by difference criteria and thus undervalued.

In the following I would like to briefly describe the effects of the assumption that one would have to construct an original text for investigating (sacred) texts on philological, literary-scientific and historical fundamental questions of many disciplines of the humanities.

- Philological: Hypothesis that there must have been original texts and that every source is either an original text or can be traced back to one. This means that translations are not seen as independent witnesses but as deficit secondary products.
- Literary studies: Hypothesis that there is a development from event to oral tradition to writing and thus to the canon. This decadence model overestimates scripture in Antiquity because the interdependence between text and context is not considered. That such a straightforward development has taken place is not necessarily to be assumed and cannot be proven either.
- Historical: Here we are confronted with a fiction of authority since authority is linked to persons who are simultaneously called authors. Paul is not only an essential figure of early Christianity but also the author of Paul's letters.

THE POTENTIAL OF HISTORICAL-CRITICAL EXEGESIS IN THE DIGITAL AGE

The review of the history of research has above all clarified the adaptability of historical-critical exegesis and confirmed that »technology should not be understood as a neutral instrument but must be examined for its implicit power potential«.[38] Since the paradigms associated with the method also apply to other humanities and cultural studies, the adaptation of the methodological canon is indispensable. These methods reach far beyond the investigations of New Testament research. In the following, between reports from my exegetical research and visions, I will describe how the digital turn will revolutionize the canon of methods.

38 Gotlind Ulshöfer, »Aus der Reformation lernen?: Impulse im Zeitalter der Digitalisierung,« *Journal of the European Society of Women in Theological Research* 25 (2017): 63.

The digital shift promises egalitarian access to diverse sources of early Christianity regardless of religious, social and cultural contextualization. This is true for the sources as much as for the scientist. This means, for example, that literary and material sources are equally accessible and that scientific disclosure should not depend on individual or structural prerequisites of the scientists.

Before I go into how the digital turn will affect the historical-critical method, I would like to prepend two definitions.

a. Digital image: Image of a source that can ideally be viewed online free of charge. A digital image is usually provided together with meta information about the source i.e. information associating the digitized version with the original. There are no uniform standards; it can be a spectrum from only the signature up to information about context, state of preservation and peculiarities. Digital images are freely accessible in the rarest cases (50% digitized and only a fraction freely accessible) and the quality of pictorial material differs greatly. As a rule, digital copies are not linked to transcriptions. Therefore, a search function within the source is excluded. Accordingly, a comparative investigation of digital copies is not yet possible. The online presence of Codex Sinaiticus and New Testament Virtual Manuscript Room of the University of Münster are exceptions in the preparation of digitized material.[39] The digitization of Codex Sinaiticus has already been discussed. New Testament Virtual Manuscript Room is a project of the Institute for New Testament Textual Research in Münster. Information on New Testament manuscripts is offered online and linked to digital photos and transcriptions.[40] An attempt is made to create collations of the transcripts on experimental status. Due to lacks of completeness and quality control they are not scientifically reliable.
b. Digital sources are marked with meta information and differ from the mere digitized artefacts in that they can be processed by computers. This applies to file format and markup language (usually xml) associated with the digitized material. Collations are based on digital sources.

39 British Library, Leipzig University Library, St Catherine's Monastery at Sinai and the National Library of Russia, accessed February 28, 2019, http://www.codexsinaiticus.org/ and http://ntvmr.uni-muenster.de/de.

40 »Wikipedia,« *New Testament Virtual Manuscript Room,* downloaded March 28, 2019, https://de.wikipedia.org/wiki/New_Testament_Virtual_Manuscript_Room.

THE CHANGE OF THE HISTORICAL-CRITICAL APPROACH

Within historical-critical exegesis the following working steps are considered most important:

	Steps acc. to classical method	Digital historical-critical exegesis
I	Preparation Working translation	Preparation Digitization and transcription of handwritings
II	Textual criticism Investigation of preserved variant and reconstruction of original text	Text collation Collation of all handwritings and variants
III	Analysis of text Investigation of text following pragmatic criteria	Reconstruction of editorial stages
IV	Literary criticism Investigation of text following literary-critical criteria	Textual criticism Textual criticism of a text of *one* particular editorial stage
V	Editorial criticism Question whether secondary traditions are interconnected and based on common original tradition	Analysis of text Investigation of text following pragmatic criteria
VI	Form criticism Clarification of question for »Sitzim Leben« (sociological setting)	Literary criticism Investigation of text following literary-critical criteria
VII	Tradition history Elaboration of imagination dimension within the Bible	Tradition history Elaboration of imagination dimensions within the Bible
VIII	Exegesis of terms Investigation of biblical semantics	Exegesis of terms Investigation of biblical semantics
IX	Religious-historical comparison Quest for analogies in the environment	Religious-historical comparison Quest for analogies in the environment
X	Overall interpretation Compilation of all results[41]	Overall interpretation Compilation of all results

41 Compare: Martin Ebner and Bernhard Heininger, *Exegese des Neuen Testaments – Ein Arbeitsbuch für Lehre und Praxis*, 2., verb. und erw. Aufl. ed., Utb Für Wissenschaft – Uni-Taschenbücher 2677 (Pa-

STEP I
PREPARATION

In traditional historical-critical methodology, creating a working translation is considered first step towards a well-founded exegesis. If one sticks to the classical order of historical-critical exegesis, automated translation programs could help to translate the text from its original language into another (Google Translator as the-best-known-example).

In my view, however, it is more crucial with the digital revolution that the entire collection of manuscript sources determined must be digitized and transcribed. Each manuscript must be provided with meta information that is as comprehensive as possible, i.e.: text size, language, chronology, place of discovery, etc. – these must be uniformly labelled so that meta searches can also be carried out on the basis of a wide variety of criteria. This means that all digital copies of manuscripts should be accessible via Open Access and, above all, should be globally traceable. Behind this stands the claim that digitized sources must be uniformly transcribed (there are standards, e.g. Epidoc follows the Text Encoding Initiative's standard and writes in xml) in order to be able to compare the text contents in the subsequent steps (manuscript OCR projects such as Transkribus are making great progress here and may relieve a lot of work in the future). Ideally, all transcriptions must be translated word for word »interlinear« (into as many languages as possible, in any case into all ancient languages), lemmatized, syntactically and morphologically marked and linked with lexica and grammars (e.g. Accordance-Papyri representation). Regarding the abundance of independent transcriptions and digitizations of manuscripts, there are already numerous alternatives at individual manuscript level. An open question is how to create uniformity and commitment in the abundance of digital versions of artefacts. What is certain, however, is that in

derborn: Ferdinand Schöningh, 2007); Udo Schnelle, *Einführung in die Neutestamentliche Exegese*, 6., neubearb. Aufl. ed., Utb Für Wissenschaft – Uni-Taschenbücher 1253 (Göttingen: Vandenhoeck und Ruprecht, 2005); Martin Meiser, *Proseminar 2 Neues Testament – Kirchengeschichte ein Arbeitsbuch* (Stuttgart Berlin Köln: Kohlhammer, 2000); Eckart Reinmuth and Klaus-Michael Bull, *Proseminar Neues Testament Texte lesen, Fragen lernen* (Neukirchen-Vluyn: Neukirchener Verl., 2006); Otto Kaiser, Georg Kümmel Werner, and Adam Gottfried, *Einführung in die Exegetischen Methoden* (München: Kaiser, 1963); Adam Gottfried, *Einführung in die Exegetischen Methoden*, [7. Aufl.] ed. (Gütersloh: Kaiser Gütersloher Verlagshaus, 2000); Kurt Erlemann and Thomas Wagner, *Leitfaden Exegese eine Einführung in die Exegetischen Methoden für das BA- und Lehramtsstudium*, Utb (Tübingen: Francke, 2013); Hans Conzelmann and Andreas Lindemann, *Arbeitsbuch zum Neuen Testament,* ibid. (Mohr, 1975); Sönke Finnern and Jan Rüggemeier, *Methoden der Neutestamentlichen Exegese ein Lehr- und Arbeitsbuch,* ibid. (A. Francke Verlag, 2016).

the preparation of a New Testament exegesis it is not possible to translate a text using digital methods, but it must first be clarified which sources contain the text or fragments of the text at all. In other words: no translation without text.

STEP II
TEXTUAL CRITICISM VS. TEXT COLLATION

In this classical procedure of textual criticism most exegetes refer to the 28th edition of the Greek New Testament, which is made available by the Institute for New Testament Text Research (INTF) in Münster. Textual criticism above all implies the reconstruction of the »original« or »initial« text, which involves the assessment of hearing, reading or writing errors and the application of the established assessment criteria (lectio breviorprobabilior and lectio difficiliorprobabilior). Scientists in Münster understand the collective term »textual criticism« to mean methods of algorithmizing and automation. This means that coherence-based genealogical methods are used for text reconstruction: local stemmata are algorithmically determined for each word; it is probably the smallest problem that it is only used among Greek text witnesses if one bears in mind that the algorithm is not made transparent. Consequently, the reconstruction of the original text can no longer be the goal, since we are now at a completely different stage, namely the collection and comparison of the variants as witnesses of different transmission strands and editorial levels.

This finding fundamentally contradicts the postulate of Barbara Aland:

> Textual criticism must ask for the original text or, as we say in the Institute, the source text of the tradition, and determine it. This is the only way to gain a text as a starting point with which one can compare and understand the abundance of texts, versions and quotations encountered in history. This is the only way to gain the freedom of understanding that resists the chaos that would occur if all the variants that have arisen in history were to be regarded as potential original texts and if text history were to be written from any point. This is not how it works.[42]

42 Aland, »Welche Rolle spielen Textkritik,« 318.

Contrary to Aland I assume that reconstruction of text stages must be result of rather than precondition for textual criticism. In the Digital Age, textual criticism is more an editorial criticism because we understand the varieties of the text to be its editions. As a consequence, this means that the reconstructed source of sayings Q or any other »original« text can only be result of and not precondition for working on texts of the New Testament. Hence, textual criticism must be understood in a completely new way, namely as text collation. In other words, the real aim should be the collation of all handwritings and variants![43]

Automated processes can relieve the researcher of the most arduous work. In order for this to work and be professionally automated, the following points mentioned under the aspect of preparation are necessary: Manuscripts should be digitized, standardized and uniformly labelled and transcribed as completely as possible. Interlinear translations at word level would also have to be made possible.

It must be quite clear to everyone that the specialist knowledge of the New Testament expert is not demanded at this point, because it is not yet a matter of hypothesis-guided evaluation of variants. What is rather required here is the digitization of interdisciplinary work of philologists, papyrologists, New Testament experts, historians, computer specialists and so forth.

In contrast to traditional historical-critical exegesis, in which a reconstructed text is already there to be further analyzed at this point, under the new premise a text collation must be carried out first.

In order to do justice to the plurality of early Christian texts, the first step is editorial criticism: The only way to decide whether or not to follow the genealogically different strands of tradition is editorial criticism.

STEP III

TEXTUAL ANALYSIS VS. RECONSTRUCTION OF EDITORIAL STAGES

This methodological step best emphasizes the difference in historical-critical exegesis before and after the digital turn. By editorial criticism classical exegesis pursues the question whether or not secondary traditions are connec-

43 New Testament Virtual Manuscript Room tries this with CollateX (https://collatex.net); but results are still far from aedequate for professional use. The corpus of handwritings is therefore incomplete and use for computer non-experts is made more difficult.

ted with each other and originate from common traditions. The problem in comparison to textual criticism as pursued up to date is that the amount of basic data and plurality of variants is significantly higher than before (due to different languages, writing styles, status of translations, amount of considered hand writings and so forth). The amount of data and plurality of variants offers the great advantage of treating hand writings equally independent of their original language, their age and quality of preservation.

Editorial criticism therefore means to carry out a reconstruction of editorial stages, which become visible through the variants of handwritings. And here is a decisive difference to the Münster model, where sources are statically prioritized according to their originality. In my opinion, the classification into editorial levels favors an initially value-free examination of the manuscript material. Because at this point one can work with different premises and hypotheses on the collated tradition. One can develop both synchronic and diachronic questions regarding the plurality of the text tradition. These questions only lead to the respective evaluations of the manuscript tradition which is decisive for this question.[44]

It is only with the reconstruction of editorial stages that algorithmic philological decision procedures such as the genealogical method of Münster for text-critical evaluation, which evaluate text variants with regard to originality and stemming, can be applied. Accordingly, the underlying hypotheses for choosing a particular editorial level and the associated variants would have to be formulated algorithmically. This may involve the reconstruction of a supposed original text as well as the reconstruction of the Gospel of Marcion.

Self-learning algorithm systems (»machine learning«) can be trained to apply hypotheses from editorial history to collations on the basis of much-discussed text passages. They could cluster groups of handwriting, categorize tradition strands, even construct several text levels – all a question of training and the hypotheses of the trainer or the self-learning algorithm. I am aware that these self-learning algorithm systems, which analyze editorial levels, are still dreams of the future and leave broad room for interdisciplinary, international research projects. However, in contrast to the Münster algorithm model, new hypotheses could be trained and tested again and again and thus

44 One example for an assumed edition stage and demonstration of complexity: Markions Evangelium nach Klinghardt, downloaded February 28, 2019, marcionbible.webspace.tu-dresden.de/marcionvariants/.

different editorial levels can be reconstructed, thus reflecting the plurality of early Christian tradition.

STEP IV
LITERARY CRITICISM VS. TEXTUAL CRITICISM

Whereas the classical aim is the reconstruction of an original text, the aforementioned points to the fact that now the focus is on textual criticism of a text of a certain editorial level or of a concrete transmission chain in the history of the text – in other words, under these conditions the reconstruction of a single text (especially an original text) is not necessary – depending on the question posed, the comparison of different editorial levels can also be taken into consideration.

The decisive difference in contrast to the classical approach is that manuscripts are pre-selected on the basis of the premises established in the previous step, that the selection is language-independent, and the emphasis is on openness to all questions relating to the history of tradition. We must remember once again that we are dealing with a corpus of texts reaching far beyond the canon and apocryphal writings that could be seen side by side (e.g. Nag Hamadi and Gnostic texts/analogy to parables).

STEP V
EDITORIAL CRITICISM VS. TEXTUAL ANALYSIS

The next step then is textual analysis, which includes examination of the text according to literary-critical criteria, i.e. structure, style, consistency and logic, in order to determine revision or uniformity. Here the focus would change according to the research question (either a text, a collection of texts, text section, etc.). Possibly linguistic text analyses (especially stylometry – e.g. Matt's dissertation) could provide tools by finding specific text styles and word usage in certain syntactic contexts. However, contents to this step remain the same with or without digital tools.

STEP VI
FORM CRITICISM VS. LITERARY CRITICISM

Literary criticism with its traditional goal of describing the interdependencies of texts will be carried out according to the new terms of manifold tradition strands. User hypotheses (e.g. Goulder or Klinghardt) are better substantiated with digital methods of exegesis. On the other hand, dependency theories like the Q-template or the Two-source hypothesis become less and less plausible because they refer back to purely hypothetical templates.

Concerning steps VII. to X.: These steps actually have the same outlook in terms of computer support: stylometric, co-occurrence analyses (detecting significant regularities when using word combinations)[45] resp. collostructional and semantic analyses are being realized and offer plenty of space for experiments. However, these analysis steps all benefit significantly from a value-neutral, comprehensive text basis (see above).

Tradition history (VII), which contributes to clarifying the »Sitz im Leben«-question and works on facilitating a classification of texts in the socio-historical context, will probably remain a long and time-consuming manual work even in the Digital Age. It should not be underestimated that the differentiated preparatory work mentioned above will possibly provide a lot of new material. The exegesis of terms (VIII), which is primarily a semantic analysis, benefits from computational linguistics or corpus linguistics, from co-occurrence analyses and collostructional analysis). However, these tools are not yet professionally usable as far as I know. Semantic analyses (see above) would need to help looking for motives. Here, semantic analyses (e.g. using the Word2Vec algorithm) are needed. Their application, however, is still highly experimental, particularly in Ancient Studies (e.g. Matt Munson's Digital Plato). In the religious-historical comparison (IX) analogies in the environment of New Testament texts are examined. In a consistent digital Bible exegesis the methodology for all ancient texts must be achievable. The aim must be complete and interlingual disclosure. In digital exegesis, the overall interpretation (X) refers primarily to the plural tradition of biblical sources. The editing of the texts, which in the overall interpretation also refers to the context of the editorial levels, facilitates subject-specific exegetical orientati-

45 »Leibniz-Institut für Deutche Sprache,« accessed March 28, 2019, http://www1.ids-mannheim.de/kl/misc/tutorial.html.

ons. Thus, a ritual-scientific interpretation of the editorial stages makes dependencies of sources and ritual developments in the early church visible.[46]

CONCLUSION

It is very sensible to continue working on historical-critical exegesis in the course of the digital turn and making use of its adaptability, because it is foreseeable that technical possibilities can extend text-critical work by central analytical steps. This concerns above all possibilities for comprehensive collation, transcription and an expansion of the text stock by means of reliable and unifying, valid methods. In my opinion, the most important argument for maintaining historical-critical exegesis in the Digital Age is precisely that it can benefit greatly from the above-mentioned means, and that it can only be fully developed using these possibilities. The multi-angle view that I have provided made clear that the workflow of this method can change: by separating the individual steps from hypotheses and questions and by working on them independently. This guarantees a very broad spectrum for the development of questions, because the processing of the text stock is neither limited nor predetermined by the digital possibilities. Rather, a broad basis for analysis is created. This allows for the reconstruction of an original text as well as the investigation of different editorial levels and the associated plurality of early Christian communities.

It is obvious that the workflow presented by me illustrates an ideal state, which cannot be implemented at present. This applies to the texts of the New Testament as well as to texts in their historical environment.

Requirements for further development of this method in the course of the digital turn are:

- Revision of the methodological steps and their sequence
- Ongoing digitization and transcription of the sources
- Digitization of already existing editions of sources incl. critical apparatus and its connection with digitized sources

46 »Eastern Non-Interpolations,« accessed February 28, 2019, https://enipolatio.hypotheses.org/tag/mahl-und-text.

- Comparable handling of sources, i.e. uniform disclosure (high-quality processing of digitalisats)
- Connection and free access to sources (Open Access)
- Development of tools and algorithmic methods in order to take the required steps…
- The combination of digital techniques and New Testament science also places demands on lecturers:

In addition to excellent language skills and specialist knowledge of ancient literature and society, an entirely different didactic approach to the introduction to critical exegesis would emerge. To a large extent this would be characterized by the fact that students would have to learn how to use technical possibilities and experiment with them.

This presupposes, of course, that researchers and lecturers are also familiar with these methodological steps and that interdisciplinary teaching enables them to convey these information-technological aspects. The further development of digital methods, however, still requires intensive cooperation between specialists and computer scientists. Universities are therefore depending on one another in order to adapt their infrastructures towards interdisciplinary cooperation on international level.

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A COMPUTATIONAL, HISTORICAL-CRITICAL EXAMINATION OF ΕΚΚΛΗΣΙΑ IN THE NEW TESTAMENT[1]

MATTHEW MUNSON

INTRODUCTION

The word ἐκκλησία, often translated as »church«, is one of the most important words in the history of Christianity and the concept of Christian unity has congealed more and more firmly around this word. ἐκκλησία can represent everything from the gathering of two or three believers (Matthew 18:20) to the universal church that includes all Christians, past, present and future. This article sets out to explore to what extent the fully Christian concept represented by the English word »church« can be read from the evidence of the New Testament, and more specifically the New Testament as read along with other, contemporary texts. The purpose of this introduction is to briefly review the impetus for this article and the background research done into the meaning of ἐκκλησία in the New Testament. This review will supply a basic range of options to which I will be able to compare the distributional data that I produce. I will not feel constrained to choose one of these possible meanings, especially if none of them fit the data. But even if the data points in a different direction, previous interpretations of ἐκκλησία will still provide a starting point for my own interpretation.

The initial impetus for this article came from an article by Jennifer Eyl entitled »Semantic Voids, New Testament Translation, and Anachronism: The Case of Paul's Use of Ekklēsia.«[2] Eyl argues that many of the problems with inconsistent or incorrect translation of words in the New Testament are caused by semantic voids, i.e., words in the Greek for which English either

1 This article is a revision of a portion of my dissertation: Matthew Munson, *Biblical Semantics: Applying Digital Methods for Semantic Information Extraction to Current Problems in New Testament Studies* (Aachen, Germany: Shaker Verlag, 2017).

2 Jennifer Eyl, »Semantic Voids, New Testament Translation, and Anachronism: The Case of Paul's Use of Ekklesia,« *Method & Theory in the Study of Religion* 26, no. 4–5 (November 2014): 315–339, https://doi.org/10.1163/15700682-12341289.

has no single word (the linguistic void, e.g, the German word *Schadenfreude*) or lacks even the concept expressed by the word (the referential void, e.g, the »ancient Stoic notion of oikeiōsis«).[3] These semantic voids, she claims, are filled, often anachronistically, »by translators in pursuit of crafting worship communities that match the translators' specific Christian ideologies.«[4] She focuses on the case of the Greek word ἐκκλησία, which is typically translated as »church« in Christian literature. Eyl asserts that »church« is an anachronistic and misleading translation for ἐκκλησία because,

> The word »church« appends, ex post facto, certain kinds of characteristics and social relationships to Paul's ekklesia, and thus to the people who identified as participants in his ekklesia. Furthermore, it is suggestive of institutions, histories, relations of power, and dogmatic theologies that had not yet developed.[5]

In support of this, she asserts that ἐκκλησία did not suddenly change its »entire semantic field […] in the middle of the first century.«[6] Instead, Eyl supports a translation of ἐκκλησία that springs either from the background that informs Paul's usage, i.e., the Septuagint understanding of ἐκκλησία as the gathering of Israel at Mt. Sinai,[7] as well as later gatherings of the people of God,[8] or from the one that would likely have informed his readers' understanding of the word, i.e., the typical usage in their wider world as simply an »assembly or gathering.«[9] And »assembly«, in fact, is the translation that Eyl would seem to support.[10]

Eyl also focuses much of the article on Philo's use of ἐκκλησία, which she

3 Ibid, 318.
4 Ibid.
5 Ibid, 332.
6 Ibid, 334.
7 Ibid, 335.
8 Ibid, 325.
9 Ibid, 332.
10 Ibid, 334.

says deals almost exclusively with the ground for inclusion or exclusion from the ἐκκλησία.[11] She writes that both Philo and Paul are concerned

> with controlling the passions, insistence on worship of the deity of Israel, and the importance of Judean lineage. Contrary to most interpreters, Paul does not appear to be establishing a third category called »Christians«; rather, he is devising a means by which gentiles are brought into the family of Abraham. As members of that family, his followers enjoy the privilege of participating in ekklesiai of the Judean deity.[12]

Eyl's article is persuasively argued and well supported, especially from the primary literature. The one statement she makes that sticks out both as relatively unsupported and subject to investigation by the methods I propose in this article is her assertion that the »entire semantic field« of ἐκκλησία did not suddenly shift »in the middle of the first century.«[13] Distributional methods, like those proposed here, set out to investigate the »semantic fields« of words and, thus, are an excellent means of investigating claims such as Eyl's. And it must be admitted that this claim stands very much at the center of her argument. If, after all, it can be shown that the semantic field of ἐκκλησία in the New Testament actually is significantly different than it was in the Septuagint or the wider Hellenistic literature, that could cast doubt on her interpretation of Paul's referent for ἐκκλησία. I should make it clear that I am not setting out either to prove or disprove her claims. Her argumentation happens on the historical, exegetical level. My investigations will, instead, be on the distributional semantic level. I expect that my results will either support or erode support for her conclusions but they will not directly counter or confirm her arguments or her conclusions.

Before diving into my distributional analysis, it will be helpful to look at the different scholarly interpretations of what ἐκκλησία means in the New

11 Ibid, 326–27.

12 Ibid, 329.

13 Ibid, 334.

Testament. This overview should provide a background against which I can compare my distributional results, serving as an interpretive aid that can help to contextualize the raw data. Because they are most accessible, I will start with four lexica, two for ancient Greek in general (Liddell and Scott, *An Intermediate Greek-English Lexicon* [14] and Liddell, Scott, and Jones, *A Greek-English Lexicon* [15]) and two that focus particularly on the New Testament (Danker, et al., *A Greek-English Lexicon of the New Testament and Other Early Christian Literature* [16] and Louw and Nida, *Greek-English Lexicon of the New Testament: Based on Semantic Domains* [17]*). The Intermediate Greek-English Lexicon* breaks the meanings of ἐκκλησία into two parts.[18] The first meaning is »an assembly of the citizens regularly summoned, the legislative assembly,« for which Thucydides, Demosthenes, Herodotus, and Aristotle are cited in support. The second meaning is »the Church, either the body, or the place,« for which only the New Testament is cited. The Liddell, Scott, Jones (LSJ) lexicon is similar in that it has two primary meanings,[19] the first being »assembly duly summoned« supported by reference to Thucydides, Plato, Aristotle, Herodotus, etc. The second meaning is also split into two parts: the first coming from the Septuagint, »the Jewish congregation,« and the second from the New Testament, »the Church, as a body of Christians.« This second definition is

14 Henry G. Liddell et al., *A Greek-English Lexicon*, Rev. and augm. throughout (Oxford: New York: Clarendon Press; Oxford University Press, 1940), http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3atext%3a1999.04.0057.

15 Henry G. Liddell and Robert Scott, ed., *An Intermediate Greek-English Lexicon* (Oxford: Clarendon Press, 1889), http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3atext%3a1999.04.0058.

16 Frederick W. Danker, Walter Bauer, and William Arndt, *A Greek-English Lexicon of the New Testament and Other Early Christian Literature*, 3rd ed (Chicago: University of Chicago Press, 2000).

17 Johannes P. Louw and Eugene A. Nida*, Greek-English Lexicon of the New Testament: Based on Semantic Domains*, 2nd Edition (New York: United Bible Societies, 1989).

18 »Henry G. Liddell and Robert Scott, An Intermediate Greek-English Lexicon,« accessed February 25, 2018, http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.04.0058%3Aalphabetic+letter%3D*e%3Aentry+group%3D16%3Aentry%3De%29kklhsi%2Fa.

19 »Henry G. Liddell and Robert Scott, An Intermediate Greek-English Lexicon,« accessed Februar 25, 2018, http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.04.0057%3Aalphabetic+letter%3D*e%3Aentry+group%3D47%3Aentry%3De%29kklhsi%2Fa.

supported by reference to Matthew 16:18, 1 Corinthians 11:22, and Romans 16:5. These two lexica follow a similar pattern of splitting ἐκκλησία into a more political and a more religious meaning. And the grouping in the LSJ of the Septuagint and New Testament meanings could be seen to suggest some sort of relationship of the two meanings with each other (which would correspond with Eyl's own reading of the evidence), though it may be too much to read the LSJ's grouping pattern as proof for the support of such a relationship. In any case, both of these lexica seem to support precisely what Eyl said did not happen, i.e., a significant change in the semantic field of ἐκκλησία in the New Testament.

The second set of definitions comes from the New Testament lexica. The Danker lexicon (BDAG) has three primary meanings that occur in the New Testament.[20] The first (1) is »a regularly summoned legislative body, assembly, as gener. understood in the Gr-Rom. World.« The single occurrence cited is Acts 19:39, where the city scribe in Ephesus tells Demetrius and the other silversmiths that, if they have a complaint against Paul, they should bring it ἐν τῇ ἐκκλησίᾳ. The second definition (2), »a casual gathering of people, an assemblage, gathering,« is also only attested in Acts 19, this time in verses 32 and 40, which both times describes the crowd that gathered in the theater around Demetrius and his fellows. The third (3), and by far the most prevalent, definition in the New Testament is »people with shared belief, community, congregation...in our lit. of common interest in the God of Israel.« This definition has three further sub-definitions: (3a) »of OT Israelites assembly, congregation,« (3b) »of Christians in a specific place or area,« and (3c) »the global community of Christians, (universal) church.« Of most interest to this study are the last two of these. Definition 3b has the following very interesting historical comment:

> the term ἐ. apparently became popular among Christians in Greek-speaking areas for chiefly two reasons: to affirm continuity with Israel through use of a term found in Gk. translations of the Hebrew Scriptures, and to allay any suspicion, esp. in political circles, that Christians were a disorderly group.

20 Danker, Bauer, and Arndt, *BDAG* s.v. »ἐκκλησία.«

The first reason, continuity with Israel, should look familiar from Eyl's own exegetical take on the word. The second, however, is new, though it is related to Eyl's claim that one of the reasons that ἐκκλησία became popular was because it would have been known by Paul's audience from the world around them. Both of these reasons, though, come back to the same basic premise of continuity, either with the Israelite congregation or with the Greek political assembly, fitting into both the Jewish and the Greek world views.[21] The two sub-definitions under 3b assert that ἐκκλησία could refer to »a specific Christian group assembly, gathering ordinarily involved in worship and discussion of matters of concern to the community« and »congregation or church as the totality of Christians living and meeting in a particular locality or larger geographical area, but not necessarily limited to one meeting place.«

So the BDAG, like both of the previous Greek lexica, separates the religious and non-religious meanings of ἐκκλησία. It also splits the LXX and the NT usage, with 3a referring to the congregation of Israelites and 3b and 3c referring to Christian groups. Also, the BDAG only finds definition 3a in two passages, Hebrews 2:12 and Acts 7:38. This results in a picture of ἐκκλησία in the New Testament as a purely Christian group, against Eyl, even though it still might find its roots in the LXX congregation, in agreement with Eyl.

The final Greek lexicon, the Louw-Nida lexicon, is interesting for two reasons. First, because, as Louw and Nida say in their preface, their lexicon was »designed primarily for translators of the New Testament in various languages.«[22] Since the translation of ἐκκλησία is the focus of Eyl's article, it will be interesting to see what advice Louw and Nida give to translators of this term. Second, instead of providing only translation glosses, Louw-Nida also provides definitions and explanations of words[23] as well as explanations of the differences of a term with other closely related terms.[24] Louw-Nida, like the BDAG, also has three primary definitions for ἐκκλησία, in sub-domain 11.32 as »a congregation of Christians, implying interacting membership –

21 Eyl, »Semantic Voids,« 332, for her take on what ἐκκλησία would have meant to Paul's Greek audience.

22 Louw and Nida, *Greek-English Lexicon of the New Testament: Based on Semantic Domains*, iv.

23 Ibid viii.

24 Ibid ix–x.

›congregation, church,‹« in sub-domain 11.33 as »the totality of congregations of Christians – ›church,‹« and in sub-domain 11.78 as »a group of citizens assembled for socio-political activities – ›assembly, gathering.‹« Reading these definitions more closely, Louw-Nida advises translators under 11.32 to

> beware of using a term which refers primarily to a building rather than to a congregation of believers. In many contexts ἐκκλησία may be readily rendered as ›gathering of believers‹ or ›group of those who trust in Christ.‹

Then, under 11.78,

> It is possible that in ἐκκλησία there is somewhat more focused upon the people being together as a legal assembly, while in the case of δῆμος the emphasis is merely upon a meeting of citizens. But in the NT one cannot distinguish clearly between the meanings of these two words.

What we see, then, in Louw-Nida that we have not yet seen is an explicit focus on the gathering or group aspect of the word, with this being mentioned in both 11.32 and 11.78. However, there is no mention of the Christian ἐκκλησία being related in any way to the Israelite congregation in the LXX. So a translator who was using the Louw-Nida lexicon either primarily or exclusively would completely miss the aspects of ἐκκλησία that Eyl finds most important.

It seems, then, that all of the definitions reviewed support a redefinition of ἐκκλησία to represent a purely Christian religious or cultic gathering or even the building in which such a gathering took place. These definitions would suggest that ἐκκλησία was a word which, even though it would have been understandable to the people around them, would have been used by Christians to set themselves apart from the pagan and Jewish world rather than to graft themselves into the congregation of Israel.

Moving away from the lexica, where translators, students, and scholars would look first to find the meaning of ἐκκλησία, the next step is to look at other widely used reference works for the New Testament. And probably the most widely used reference work, especially in academic circles, is Gerhard Kittel's *Theologisches Wörterbuch zum Neuen Testament.* The entry for ἐκκλησία was written by Karl Ludwig Schmidt.[25] This very detailed discussion has many things in common with Eyl's own interpretation: it questions the translation of »Kirche/church« as being too colored by later Christian developments,[26] it finds the usage in the undisputed Pauline epistles to be significantly different than in the deutero-Paulines (i.e., Ephesians and Colossians),[27] and it finds the root of the New Testament usage of ἐκκλησία exclusively in its Septuagint usage.[28] Schmidt, however, disagrees with Eyl on her central point: he sees the Christian choice of ἐκκλησία, especially in light of early Christianity not choosing συναγωγή, as being a means of setting themselves apart from, not integrating themselves into, the existing Jewish religious communal structure.[29] In the end, Schmidt suggests somewhat of a neologism for the translation of ἐκκλησία, »Kirchgemeinde«, in order to capture both the universal aspects we would associate with »Kirche« and the local aspects we would associate with »Gemeinde.«[30]

In contrast to all of the research cited so far, the entry for ἐκκλησία in Balz and Schneider's *Exegetisches Wörterbuch zum Neuen Testament*, written by J. Roloff,[31] finds the origin of the Christian use of ἐκκλησία not in the assemblies of the LXX but, instead, in the קהל אל (»assembly of God«) of the other Jewish apocalyptic communities of the time, especially in the Qumran writings (1 QM 4:10, 1 Qsa 1:25).[32] Roloff argues that קהל in the Old Testament is not only translated with ἐκκλησία but also with συναγωγή,

25 K. L. Schmidt, »Ἐκκλησία,« in *Theologisches Wörterbuch zum Neuen Testament*, ed. Gerhard Kittel and Gerhard Friedrich (Stuttgart: Kohlhammer, 1938).

26 Ibid, 534.

27 Ibid, 512.

28 Ibid, 516.

29 Ibid, 519–20.

30 Ibid, 534–35.

31 J. Roloff, »Ἐκκλησία,« in *Exegetisches Wörterbuch zum Neuen Testament*, ed. Horst Balz and Gerhard Schneider (Stuttgart: Kohlhammer, 1980).

32 Roloff, col. 1000–1001.

which, he points out, was the preferred term for other Jewish communities at the time,[33] that the LXX has ἐκκλησία κυρίου instead of ἐκκλησία τοῦ θεοῦ, and because the New Testament has no direct citation from the LXX that refers to the congregation of Israel (except, as he says, »viell[eicht]« Acts 7:38).[34] Roloff also dismisses the idea that ἐκκλησία would have been chosen to set the early Christian community apart from the Jewish συναγωγή with the assertion that there is no evidence in Paul that ἐκκλησία was meant to counter the »durch jüd. Nomismus vorbelasteten Begriff συναγωγή.«[35] Of most importance, however, in relation to Eyl, is that Roloff sees Paul's use of ἐκκλησία as setting up the »third kingdom« in relation to Jews and Greeks, citing 1 Cor 10:32 (ἀπρόσκοποι καὶ Ἰουδαίοις γίνεσθε καὶ Ἕλλησιν καὶ τῇ ἐκκλησίᾳ τοῦ θεοῦ) in support of this. This directly contradicts Eyl's assertion that Paul is integrating Gentiles into Israel as opposed to setting them apart from the world around them. It should come as no surprise, then, that Roloff suggests that ἐκκλησία should be translated »Gemeinde« when referring to a local community and »Kirche« when the referent is abstracted from the local context.[36]

Besides these definitions in the traditional reference works, there are also several scholars who have dealt with the meaning of ἐκκλησία in the last sixty years. Wilhelm Pauck, in his article »The Idea of the Church in Christian History,«[37] characterizes the development of the term ἐκκλησία as one from small local gatherings based around the personal relationships of the members to that of the monarchical Catholic Church of late antiquity.[38] He, like Eyl, finds the origin for the New Testament usage of ἐκκλησία in assemblies of Israel described in the Septuagint but, instead of seeing it as an incorpo-

33 Though this reference back to the Hebrew original term that stands behind both ἐκκλησία and συναγωγή would seem less important than the theological arguments for the LXX as the source given by, e.g., Eyl (reconstitution of the OT »congregation«), if one assumes that the New Testament writers would have used primarily, or even exclusively, a Greek translation of the Hebrew original.

34 Roloff, »Ἐκκλησία«, col. 1001.

35 Ibid.

36 Ibid.

37 Wilhelm Pauck, »The Idea of the Church in Christian History,« Church History 21, no. 3 (September 1952): 191–214.

38 Ibid, 196.

ration of Gentiles into the ἐκκλησία of Israel, Pauck portrays the Christian use of ἐκκλησία as being a »claim to be the true Israel.«[39] So, for Pauck, New Testament ἐκκλησία was still more about separation, or even replacement, than integration.

J. W. Roberts, in his article »The Meaning of Ekklesia in the New Testament,«[40] also finds the New Testament roots for its usage of ἐκκλησία in the Septuagint. In particular, he traces the development within the New Testament of its meaning from the local gathering of believers to the ideal and universal »Church« that encompasses all believers back to its usage in the Septuagint, where it begins with the gathering of Israel before Mt. Sinai but then later represents the gatherings of all Israel as they came together at important points in their history.[41] Roberts also sees the Christian ἐκκλησία as a »new congregation or ekklesia […] constituted on the basis of what God had done in Jesus Christ.«[42] And, even though he acknowledges the fact that the new believers in Christ would have met along with the Jews in the synagogue until they split (which he places after the council of Jamnia[43]), he insists that the members of the Christian ἐκκλησία »would have had their own separate meetings after the synagogue met.«[44] Thus, he also sees the New Testament ἐκκλησία as representing a split with its Jewish background even at its earliest stages.

This brief overview of the interpretations of ἐκκλησία provides a good starting point for the distributional analysis below. We see that it is typical to find the roots of the NT use of ἐκκλησία in the LXX usage of the same word. Only Roloff differs, still finding the origin in Jewish usage but, instead of in the LXX, finding it in the post-biblical apocalyptic Jewish communities. There is also a strong sentiment that »church/Kirche« should be kept as a possible translation since this represents the concept of the universal church better than »community/Gemeinde« or »gathering/Versammlung« (BDAG,

39 Ibid, 193.

40 J. W. Roberts, »The Meaning of Ekklesia in the New Testament,« *Restoration Quarterly* 15, no. 1 (1972): 27–36.

41 Ibid, 33.

42 Ibid, 35.

43 Ibid, 36.

44 Ibid.

Louw-Nida, Schmidt, and Roloff). And, finally, only Eyl asserts that the purpose for choosing ἐκκλησία to describe the Christian community is in order to integrate the new Gentile believers into the existing community of Israel.

Finally, before considering the results of our distributional analysis, we should consider what we would expect to see considering the literature reviewed above. If Eyl is correct, the New Testament usage of ἐκκλησία should look more like the LXX and the Philonic usage than that of Plutarch. We might also expect it to look different from the usage in Josephus, who, Schmidt asserts, uses ἐκκλησία in »worldly terms.«[45] Schmidt also claims that Philo uses ἐκκλησία typically in terms of non-religious meetings.[46] Thus, if Schmidt is correct, we might also expect Philo's usage patterns to look different from those of the LXX or the NT. This, however, would not necessarily be a blow to Eyl's conclusions since her point is that both Philo and the NT use ἐκκλησία in a septuagintal manner. If we find the NT does this but Philo does not, the evidence would still support Eyl's main assertion. If, on the other hand, our results show that the difference between the LXX and NT usage is of similar magnitude to that between the NT and the wider Greek literature, this could show that the NT means something significantly different with the word ἐκκλησία than the Septuagint did, which would suggest that the New Testament has moved ἐκκλησία away from the semantic field it occupied in the Septuagint.[47] Even if this were the case, however, I would still need to look more closely at the relationship between NT and the LXX to find out what similarities still remain. In the next section, I will describe how I will conduct my examination both in terms of finding the similarity of ἐκκλησία among the corpora under investigation and in terms of discovering why the similarities and dissimilarities exist.

45 Schmidt, »Ἐκκλησία,« 532.

46 Ibid.

47 This ends up being precisely the case that we will have to deal with. As shown below, however, even though this is the case, we still find evidence to support Eyl's interpretation.

THEORY: DISTRIBUTIONAL SEMANTICS AND WORD CONTEXT

The method I am using to extract semantic information from the biblical corpora is based on the theoretical work of the linguist Zellig Harris. In his 1954 article »Distributional Structure«,[48] he asserted that words demonstrate their meanings in texts by means of the words that occur around them. His hypothesis has come to be called the distributional hypothesis based on the name that he gave the contexts in which words tend to occur, i.e., their »distributions«. Harris wrote, »If we consider words or morphemes A and B to be more different in meaning than A and C, then we will often find that the distributions of A and B are more different than the distributions of A and C. In other words, difference of meaning correlates with difference of distribution.«[49] This means that one can compare the distributional profiles of two different words to measure the similarity in meaning of the two words. It is upon this statement that the method used in this study rests. That is, by first building distributional profiles of the words in a corpus, which are based on their co-occurrence patterns (i.e., their distributions), and then comparing the profiles of words within and between corpora, we will achieve a better understanding of how similar and how different words are. For instance, if the profiles of θεός (God) and κύριος (lord) in the Septuagint are similar, then we should expect the meanings of these two words to be similar. On the other hand, if the profile of θεός in the Septuagint is significantly different from that of θεός in the New Testament, then this would be an indication that the meaning of θεός has shifted between the Septuagint and the New Testament.

The theory behind distributional semantics is well established. And it has also been proven in computational linguistic studies to effectively identify words with similar meanings. Of most interest for this article are two studies by John Bullinaria and Joseph Levy, one in 2007[50] and one in 2012.[51] Bulli-

48 Zellig Harris, »Distributional Structure,« *Word* 10, no. 23 (1954): 146–162.

49 Harris, »Distributional Structure«, 156.

50 John A. Bullinaria and Joseph P. Levy, »Extracting Semantic Representations from Word Co-Occurrence Statistics: A Computational Study,« 2007, https://www.cs.bham.ac.uk/jxb/PUBS/BRM.pdf.

51 John A. Bullinaria and Joseph P. Levy, »Extracting Semantic Representations from Word Co-Occurrence Statistics: Stop-Lists, Stemming and SVD,« 2012, http://www.cs.bham.

naria and Levy, in both of these studies, used the method described here of counting word co-occurrences, measuring the significance of these co-occurrence counts, and then determining the similarity of the resulting distributional vectors to complete three rather difficult tasks that have a direct bearing on what I am doing in this study. The first of these tasks was the synonym test of the standardized Test of English as a Foreign Language (TOEFL). This test gives a single word and a list of four synonym possibilities. The test-taker must then select the correct synonym from the 4 possibilities. In their 2007 study, Bullinaria and Levy were able to score 85% correct on this test,[52] while the addition of singular value decomposition (SVD) in the 2012 study allowed them to score nearly 100%.[53] The second task was similar to the first, one they named »Distance Comparison«.[54] In this task, they chose 200 pairs of »semantically related words (e.g., ›king‹ and ›queen‹, ›concept‹ and ›thought‹, ...)«, introduced 10 other random words to each of these pairs, and then computed »the percentage of the control words that are further from the target than its related word.«[55] So if their methods determined that »king« and »queen« were the closest two words in that group of twelve words, the score would be 100% for that cluster. In their 2007 study, they scored approximately 98% on this test[56] and in 2012 nearly 100%.[57] The third test they call »Semantic Categorization«.[58] In this test, they took »ten words from each of 53 semantic categories (e.g., cities, flowers, insects, vegetables, dances)« and then calculated how often their methods put each of these words closer to its own category than any of the other 52 categories.[59] In 2007 they scored about 80% on this test and in 2012 about 90%.

These are all very impressive scores, with Bullinaria and Levy asserting

ac.uk/jxb/PUBS/BRM2.pdf.

52 Bullinaria and Levy, »Extracting Semantic Representations from Word Co-Occurrence Statistics: A Computational Study,« 13.

53 Bullinaria and Levy, »Stop-Lists, Stemming and SVD,« 14.

54 Ibid, 4.

55 Ibid.

56 Bullinaria and Levy, »Extracting Semantic Representations from Word Co-Occurrence Statistics: A Computational Study,« 13.

57 Bullinaria and Levy, »Stop-Lists, Stemming and SVD,« 14.

58 Ibid, 4–5.

59 Ibid.

that their methods »provide new state-of-the-art performance«[60] on the TOEFL synonym test. But it is actually the performance on the »Distance Comparison« and »Semantic Categorization« tests that is most interesting for this analysis. As we will see below, I am more interested in analyzing the semantic neighborhood of the word ἐκκλησία in several different corpora by examining which words fall closest to the meaning of ἐκκλησία in these corpora. For this reason, »distance« and »category« are more useful hermeneutically than »synonymity«. These two studies demonstrate the ability of the methods used in this study to extract usable semantic information from large corpora.[61]

DISTRIBUTIONAL ANALYSIS OF ΕΚΚΛΗΣΙΑ

I will carry out my analysis by producing distributional profiles for ἐκκλησία in six different corpora, the New Testament (obviously), the Septuagint, the works of Philo, of Josephus, and of Plutarch, and then a general collection of classical Greek authors extracted from the Perseus corpus.[62] The New Testament, Septuagint, Philo, and Josephus have all been suggested as comparison corpora in the literature review above. I have chosen Plutarch because he wrote at about the same time as the New Testament, Philo, Josephus, and parts of LXX but in a non-Christian, non-Jewish context. And I have chosen the general Perseus corpus as a collection of literature that would have had significant influence on how both the other writers and society in general would have conceived of the term ἐκκλησία. I will need to extract the necessary se-

60 Ibid, 1.

61 For more studies on the efficacy of these methods, see Thomas K. Landauer and Susan T. Dumais, »A Solution to Plato's Problem: The Latent Semantic Analysis Theory of Acquisition, Induction, and Representation of Knowledge,« *Psychological Review* 104, no. 2 (1997): 211–40, https://doi.org/10.1037/0033-295X.104.2.211; Peter D. Turney et al., »Combining Independent Modules to Solve Multiple-Choice Synonym and Analogy Problems,« *CoRR* cs.CL/0309035 (2003), http://arxiv.org/abs/cs.CL/0309035; For a textbook that speaks to the theoretical basis and implementation of this method see Daniel Jurafsky and James H. Martin, *Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition*, Second Edition, Prentice Hall Series in Artificial Intelligence (Upper Saddle River, NJ: Pearson Education, 2009).

62 See the table at the end of this article to see the works in the Perseus collection.

mantic information from the inflected word forms instead of the lemmatized forms. The reason for this is that there are no openly available, lemmatized texts for Philo, Josephus, Plutarch, or the Perseus corpus. To overcome this problem, I have used the non-lemmatized texts for all corpora, including the biblical ones, but have lemmatized all occurrences of the word under investigation, i.e., ἐκκλησία. I have done this simply by searching all the corpora for all the forms of ἐκκλησία that occur within them[63] and replacing them with ἐκκλησία. This will allow me to calculate a single distributional profile for the lemma ἐκκλησία, though it will be based on non-lemmatized textual data. For a more in-depth, technical explanation of how I produced the distributional profiles for the words in these corpora, see the first chapter of my dissertation.[64]

VECTOR SIMILARITY

The first hermeneutical task will be to get an overview of how similar ἐκκλησία is in each of the six corpora under investigation. I will do this by calculating the cosine similarity score for each pair of cosine similarity vectors for ἐκκλησία. I have first calculated all the cosine similarity scores for ἐκκλησία within each corpus, thus producing a vector with the similarity scores for ἐκκλησία with every other word in each of the six corpora. I then standardize[65] each of these six ἐκκλησία vectors and compare them to each other. This results in a comparison of the semantic relations that ἐκκλησία has in each corpus, so that the cosine similarity vectors for two words that have similar standardized similarity scores for the same words will end up being similar to each other. Table 1 below gives an example of how this process works. Since the similarity scores for ἐκκλησία with ἔτει, καιρῷ, and ὅλῃ for the New Testament and Philo are closer to each other than the similarity scores for the same words with ἐκκλησία in the New Testament and Josephus, that means

63 E.g., ἐκκλησίαις, ἐκκλησίαι, ἐκκλησίαν, ἐκκλησίας, etc.

64 Matthew Munson, *Biblical Semantics: Applying Digital Methods for Semantic Information Extraction to Current Problems in New Testament Studies* (Aachen, Germany: Shaker Verlag, 2017), 7–42.

65 For more information on why I need to standardize these scores before comparing them, see Munson, *Biblical Semantics* 23–28.

that the distributional profile of ἐκκλησία in the New Testament is closer to that of Philo than of Josephus.[66] Figure 1 shows the results of this vector comparison.

	ἔτει	καιρῷ	ὅλῃ
Ἐκκλησία IN NT	0.6	0.6	0.6
Ἐκκλησία IN PHILO	0.7	0.5	0.6
Ἐκκλησία IN JOSEPHUS	0.1	0.1	0.1

Table 1: Example Cosine Similarity Comparison

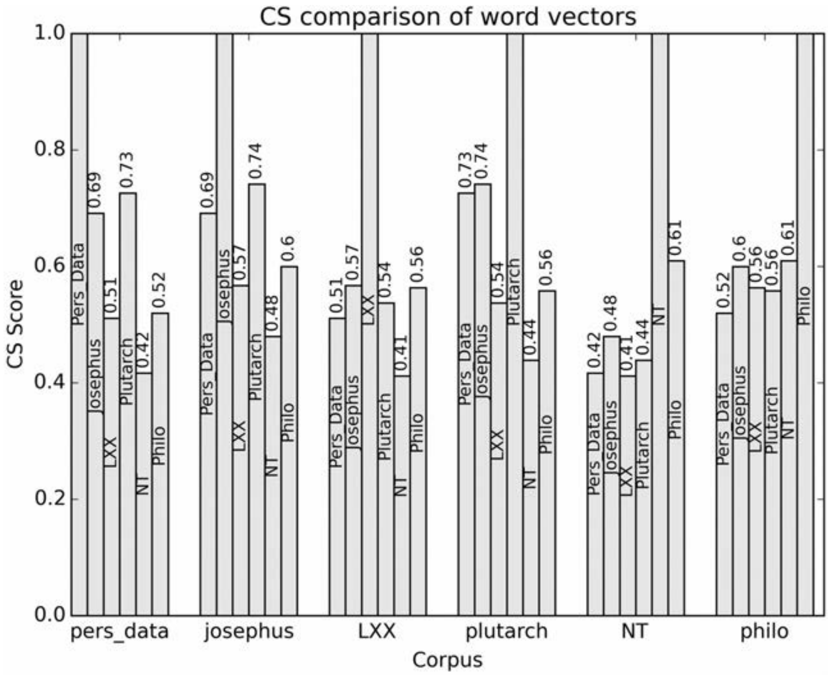

Figure 1: Comparison of the ἐκκλησία vectors for each corpus

First, notice that the three highest scoring pairs are Josephus-Plutarch (.74), Plutarch-Perseus (.73), and Josephus-Perseus (.69). Given what Schmidt said above about Josephus using ἐκκλησία in »worldly« terms, these three corpora

66 Note that these similarity values are completely made up and do not represent the actual calculated values.

may very well represent the more general meaning of ἐκκλησία as a general assembly (see the definition from the LSJ above). Next, notice the similarity of each corpus to the New Testament. By far the highest similarity score is with Philo (.61), which supports Eyl's assertion that Philo is at least as important a context for understanding ἐκκλησία in the New Testament as the Septuagint. The second highest, however, is with Josephus (.48), something that the secondary literature never led us to expect. Then come Plutarch (.44), the Perseus corpus (.42), and, last of all, the LXX (.41).

So what is surprising about this data? The most surprising result is the low similarity score for the NT-LXX pair. The secondary literature cited above overwhelmingly asserted that the best context for understanding ἐκκλησία in the NT is the LXX. Figure 1 would seem to suggest otherwise. The second, related surprise is that the semantic relations for ἐκκλησία between the NT and Philo are so much higher than those for the NT and LXX. Below I will do a pair-wise cosine-similarity comparison of cosine-similarity vectors for ἐκκλησία among these three corpora, i.e., the NT, the LXX, and Philo. I will look for patterns among the words where the cosine-similarity score of this word with ἐκκλησία between two corpora is the most similar. I will, however, limit the results to words whose cosine similarity score with ἐκκλησία is at least .5 standard deviations above the norm. Setting a minimum value for the Z-Score will ensure that the words in the tables below show a certain level of semantic similarity with ἐκκλησία. If I were to set no limit, then any word, even one that showed no distributional similarity with ἐκκλησία, would still show up on the list. That would result in a list that would contain words that do not reflect the semantics of ἐκκλησία in those two corpora.

Table 2 below represents the top 50 words ordered by ascending difference[67] in cosine similarity score of that word with ἐκκλησία between the New Testament and Philo. That is, if the cosine similarity score of μαθητὴς with ἐκκλησία in the New Testament were exactly the same as the cosine similarity score of these same two words in Philo, the difference would be 0 and, thus, μαθητὴς would appear at the top of the list. The shades of gray that I have assigned to words in the table represent my own close reading to

67 Technically, I took the absolute value of the difference between the two terms so that all differences are greater than or equal to 0. The left-hand column in this table contains the top 25 words and the right-hand column numbers 26–50.

find semantic relationships among them. If several words with similar semantics show up in the list, this helps to define a topic that is important for demonstrating the semantic field of ἐκκλησία that is shared between the two corpora. In the analysis that follows, I will first explain what I believe joins each of the shaded groups of words together and then bring these groups together to paint a picture of the semantics ἐκκλησία shares between these two corpora.

μαθητὴς	pupil
ἔτει	year
υἱὸν	son
ἐλθὼν	to come
ἤκουσας	to hear
ἦλθον	to come
ἐξῆλθεν	to come out
παρελθεῖν	to pass
χεῖρα	hand
μικροῦ	small
εἶδον	to see
ψεῦδος	lie
πολλαῖς	many
εἴδει	form
ἱκανοῖς	sufficient
καθαρὸν	clean
ἀληθῶς	truly
ἀδελφοὺς	sibling
ψευδεῖς	to lie
ἑορτῆς	festival

ὁδῷ	road
ἔθεντο	to place
καλὸς	beautiful
ἄδηλα	unseen
θεὸν	God
λαλεῖν	to talk
ὄχλον	crowd
ἔπεσαν	to fall
καλῶς	rightly
ἔκρινεν	to choose
καιρῷ	proper time
ἄνθρωπον	person
εἶδεν	to see
σαρκὸς	flesh
ἴδωσιν	to see
ὅλῃ	complete
ἔτος	year
ἱκανὸν	sufficient
γῆς	earth
καιροῖς	proper time

ἀφορῶντες	to look towards
κακὸν	bad
πρᾶξιν	deed
ἄνθρωπος	person
ἁγνὴν	pure

ὥρας	hour
δοὺς	to give
εὐχαριστεῖν	to give thanks
γεννᾶται	to beget
καίσαρος	emperor

Table 2: Fifty most similar words between the NT and Philo

The most numerous category in Table 2, with nine in black centers around good (καθαρὸν, ἀληθῶς, ἁγνὴν, καλὸς, and καλῶς) and bad (ψεῦδος, ψευδεῖς, and κακὸν). If one sees this in relation to what Eyl described as the focus in Philo and Paul on »controlling the passions«[68], then the word ἔκρινεν also fits into this category and represents the importance of the choice between good and bad for ἐκκλησία in these two corpora. The category in 25% gray is made up of three words that suggest familial relationships within the ἐκκλησία: υἱὸν, ἀδελφοὺς, and γεννᾶται. This would seem to coincide with Eyl's assertion that, for Philo and Paul (in our case, the whole NT), »Judean lineage« is important.[69] I would remark here that while this group of words certainly suggests that »lineage« is an important part of the ἐκκλησία in both Philo and the NT, I would tend to think that the NT, and especially Paul, redefines what »lineage« actually means. That is, being a »son« or a »sibling« no longer means having a blood relationship. Nevertheless, we should conclude that for Philo and the NT familial relationship, whether actual or metaphorical, is a part of the ἐκκλησία.

The next two categories, in 75% gray and 100% gray, are closely related to each other. The former, with five words and relating to the concept of time, has two words meaning »year« (ἔτει and ἔτος), one meaning »season« or »hour« (ὥρας), and two meaning »proper time« (καιρῷ and καιροῖς). And it is especially these last two, designating the correct time to do something, that connect this category with the next two words revolving around the concept of festivals. First, there is a word meaning »festival« (ἑορτῆς) and then the word describing what one does at a festival, i.e., εὐχαριστεῖν.

68 Eyl, »Semantic Voids,« 329.

69 Ibid, 329.

These last seven words having to do with festivals and their proper time support Eyl's[70] and J.W. Roberts'[71] assertion that the idea of the ἐκκλησία in the New Testament comes from the gathering of the people of Israel for important occasions, such as festivals that must be celebrated at the correct time of year. The data above, then, supports all three points of contact that Eyl mentioned between Philo and Paul, i.e., »controlling the passions, insistence on worship of the deity of Israel, and the importance of Judean lineage«. So, this data on the semantic relationship of ἐκκλησία between Philo and the New Testament coincides surprisingly well with Eyl's reading of the relationship between Paul and Philo. I will now move on to the comparison between the New Testament and the Septuagint, shown in Table 3 below.

ἀμπελῶνα	vineyard
αἰγύπτιοι	Egyptian
ἀφιέναι	to forgive
ψευδεῖς	to lie
ἀληθινόν	truthful
καθαρὸν	clean
ὀφείλει	to owe
παρθένον	virgin
μόχθον	toil
ἕτεροι	other
ἀμπελῶνι	vineyard
ἐφάγομεν	to eat
μαστιγώσουσιν	to whip
ἔπαισεν	to strike
ἀφορῶντες	to look toward

ἀνεμνήσθη	to remind
κληρονομήσω	to inherit
μένομεν	to stay
ἔχουσα	to have
ποίει	to do
γινώσκεις	to know
εὐθὺς	straight
ἀθετεῖ	to refuse
ποιοῦντες	to do
δείξω	to show
ἔχομεν	to have
διακοσίων	200
ὤμοσεν	to swear
ἔμενεν	to stay
ἔγνω	to know

70 Ibid, 325.

71 Roberts, »The Meaning of Ekklesia,« 33.

οταμῷ	river
κωφὸν	blunt
διανοήματα	notion
πεποιθέναι	to persuade
ἀνάπαυσιν	rest
ἐπεθύμησα	to covet
εἴπω	to say
τέκτονος	craftsman
μερίδα	portion
καιρός	proper time

ἀληθιναὶ	truthful
ὄλεθρος	ruin
ὅλος	entire
θεοὺς	gods
θέλει	to will
δαιμόνια	demon
κρεῖσσον	better
προγόνων	ancestor
πόδα	foot
λάβετε	to take

Table 3: Fifty most similar words between the NT and LXX

This table, with its three different shades of gray, is even more unified than the NT-Philo table above. All of the fifteen highlighted words center around the flight from Egypt and the Exodus. The category that helps to explain the next two, with six members highlighted in black, deals generally with the events surrounding the Exodus. Three words concern the Israelites' time in Egypt: αἰγύπτιοι, μόχθον (their toil as slaves), and μαστιγώσουσιν (the punishment they endured). Then there are two that refer to the plagues and the direct consequences: ἔπαισεν (in Exodus 12:13 describing God striking Egypt) and ποταμῷ (Moses turns the »river« to blood in the first plague and causes frogs to come out of the »river« in the second). And then one word used several times to describe the number of the people in the wilderness: διακοσίων.

The next group of seven words, highlighted in 50% gray, represent lemmata that occur repeatedly in the story of the giving of the ten commandments in Exodus 20: one that refers specifically to the first commandment in 20:3 and twice in 20:23 (θεοὺς), one that occurs twice in the commandment not to take the Lord's name in vain (λάβετε), one referring to not bearing false witness (ψευδεῖς), one that occurs twice in the commandment to not covet a neighbor's property (ἐπεθύμησα), and two (ποίει and ποιοῦντες) referring to not making idols in Exodus 20:4, God showing mercy to the thousandth generation in 20:6, three times in the commandment to follow the Sabbath in 20:9, 20:10, and 20:11, i.e., referring to not doing work on the Sabbath, and four times between 20:23–20:25 when referring to what the people of Israel should and should not make. Two important points should be noted about this list of words. First, it is not necessarily the precise inflected form of the base lemma that occurs in the table above and in Exodus 20. I find this to be not such a problem since two different inflections of the same lemma should generally be very similar semantically. So if one form of the lemma is similar to ἐκκλησία, then another should be as well. The second point is that several of these lemmata occur quite often in the Septuagint, most notably forms of ποιέω (3383 times) and λαμβάνω (1866 times), such that one does not think immediately of the ten commandments when one sees these words. But the two occurrences of ἐπιθυμέω (only seventy-five occurrences) and one of ψεύδω (twenty-five occurrences) suggest the connection with Exodus 20. And that the other, more frequently occurring lemmata also occur repeatedly in Exodus 20 strengthens the connection. And given the already strong connection between ἐκκλησία and the Exodus described above and below, it does not seem irresponsible to suggest a close relationship between ἐκκλησία and the giving of the ten commandments in both the New Testament and the Septuagint.

And, finally, there is a group of three words, highlighted in 100% gray, that clearly refer to the Promised Land: κληρονομήσω is used throughout the Exodus story to refer to the land they are about to enter and ὤμοσεν and προγόνων that, together as »that which I swore to your ancestors«, is another description of the Promised Land. The topic of the Exodus and entry into the Promised Land, i.e., Israel's founding story, is clearly a common theme for ἐκκλησία in both the New Testament and the Septuagint.

ποιεῖ	to do
αἰτιᾶται	to blame
μᾶλλον	more
ὅρκον	oath
ἔλεγχοι	testing

οἰκεῖν	to inhabit
ἐξομοιοῦσθαι	to assimilate
ἀσφαλῶς	steadfast
κλῆρον	portion
στεῖραν	barren

νεὼ	temple
φρενῶν	heart
ἔλαβον	to take
στρατηγὸν	general
ἐγκρατεῖς	to rule
εὐλαβηθῇς	to be cautious
ἔδαφος	floor
ἐκβαλεῖν	to cast out
σφραγὶς	seal
κρῖνον	to judge
περιποιεῖται	to preserve
ἔλαβες	to take
ἑκατὸν	100
σκοπῶν	lookout
ἄρχοντος	ruler
ἐλαιῶν	olive tree
ἄκραν	highest
ἀφαιρεῖται	to take from
ἐγγυᾶσθαι	to pledge
ὄρους	mountain

οἴσει	to bear
ἔκρυψεν	to hide
ὅπλοις	arms
ἀναγκῶν	necessity
ἴδετε	to see
ἐπιβουλῆς	plot
οἴσουσιν	to bear
ἕβδομον	seventh
ὅρασιν	seeing
οἶδας	to know
ἀπαντῶντες	to meet
πηγῇ	spring
καρπῷ	fruit
ἔργον	deed
ἔθνει	nation
ψευδεῖς	to lie
γυναιξὶν	woman
ἔλεγχος	testing
καθαρὸν	clean
χαλεπὴ	difficult

Table 4: Fifty most similar words between the LXX and Philo

The final piece in the interpretive puzzle is to look at the relationship between Philo and the Septuagint (Table 4 above). We have already seen how Philo is related to the New Testament and the New Testament to the Septuagint. Looking at the Philo-LXX pair will help us to see how Philo's relationship to the Septuagint is both similar to and different from the New Testament's relationship to the Septuagint. The method of investigation will be the same as above. The largest category in this table, with eight words in black, revolves around the word ἀσφαλῶς: ὅρκον, σφραγὶς, and ἐγγυᾶσθαι are ways to prove that one will remain steadfast, ἔλεγχοι, ἔλεγχος, and χαλεπὴ speak of times in which it is most difficult to remain steadfast, and περιποιεῖται refers to »preserving« one's steadfastness during these difficult periods. The next group, in 50% gray with six words, describes cultic matters: νεὼ is the center of cultic activity, ἀφαιρεῖται, κλῆρον, and καρπῷ fit together in the phrase »take a portion from your fruits« to describe the act of tithing, ἕβδομον refers to the Sabbath day, and καθαρὸν is the requirement to be ritually clean in order to remain a part of the ἐκκλησία. The four words in 75% gray build on this concept of remaining in the ἐκκλησία with words of integration and expulsion: αἰτιᾶται, ἐκβαλεῖν, κρῖνον, and ἐξομοιοῦσθαι. These words all speak to the necessity of judging carefully who should be in and who should be out of the ἐκκλησία. And, finally, there are four more words, in 100% gray that belong to the subset of war: στρατηγὸν, ἑκατὸν, σκοπῶν, and ὅπλοις.

What we see in these two corpora, then, is an even greater focus on decisions about inclusion and exclusion from the ἐκκλησία than we saw in the NT-Philo pair above. The focus on festivals that we saw above in the NT-Philo pair is here represented as the general theme of cultic responsibility that happens more regularly than just during the festivals, e.g., at least once a week with the Sabbath observance. And this pair also gives us something that we did not see in either of the previous two pairs, a focus on the ἐκκλησία as a body of war.

In considering all of these three pairings together, i.e., NT-Philo, NT-LXX, and LXX-Philo, of most interest for our purposes is how the three pairings relate differently to festivals and sacrifices. First, remember that one point of similarity between the New Testament and Philo was their focus on the festivals in which the whole nation of Israel would have come together. Also remember that, in the analysis of the New Testament and the Septuagint, we saw this general interest in festivals focused down onto the one event, the Exodus, the source of the most important festival in Judaism, Passover. But Philo relates to the Septuagint differently in terms of festivals than does the New Testament. Instead of focusing on the Exodus and, thus, Passover, Philo focuses on the regular (e.g., weekly) cultic observances and the temple. If we think back to how Eyl portrayed Paul's and Philo's interest in the ἐκκλησία, with Paul focused on bringing Gentiles into the Jewish ἐκκλησία and Philo interested in the reasons for inclusion and exclusion, this difference in relationship to the Septuagint makes perfect sense. The New Testament, with its interest in bringing Gentiles in, focuses on the founding myth of the nation of Israel, the Exodus. This founding myth is being used to establish the Christian ἐκκλησία in the terms of Israel's founding. And this becomes even clearer when one considers that Philo does not bring the ἐκκλησία into the purview of the Exodus, like the New Testament and the Septuagint do. Philo is not concerned with the founding of the ἐκκλησία, as Paul and the New Testament in general are. Instead, Philo is interested in who is in and who is out, who can take part in the cultic life of the community. Again, both Philo and the New Testament are interested in the ἐκκλησία as it refers to the gathering of Israel for the festivals. But the New Testament focuses on the establishment of the community whereas Philo focuses on the benefits of being in the community already. All in all, this must be seen as strong evidence in support of Eyl's assertion that Paul, and the New Testament in general, considers the ἐκκλησία as an inclusion of the Gentiles into the community of Israel. It should be noted, however, that the evidence above does not make clear that the Christians are not replacing the Jews, and thus becoming the new Israel.

CONCLUSION

So what can we say about Eyl's assertion that Paul's use of ἐκκλησία should be understood as a continuation of the Septuagint understanding, the congregation of Israel at the foot of Mt. Sinai, which it shared with Philo? Our methods have shown that she, along with J. W. Roberts, are absolutely correct to point out that ἐκκλησία in the New Testament depends on the representation of the nation of Israel gathered either at the foot of Mt. Sinai or for the large festival gatherings afterwards. But the central question remains of whether this gathering is to integrate Gentiles into Israel, as Eyl asserts, or to establish a new Israel, as Roberts and most of the other secondary literature assert. There are two pieces of evidence that tend to support Eyl. First, that the New Testament and Philo are so similar suggests that they both understand certain points to be central to the Jewish ἐκκλησία: »controlling the passions, insistence on worship of the deity of Israel, and the importance of Judean lineage«.[72] This similarity of focus would seem to put the New

72 Eyl, »Semantic Voids,« 329.

Testament well within the range of the first century Jewish ἐκκλησία as represented by Philo. The second piece of evidence is the difference in the way the New Testament and Philo relate to the Septuagint in the area of festivals. Philo focuses on the sacrifice and the temple, i.e., on the things that members of the Jewish ἐκκλησία would be allowed to do because they are members already. The New Testament, on the other hand, focuses on the Exodus, the event that created the nation of Israel. So both are interested in Jewish festivals, but Philo does so because they confirm membership while for the New Testament they establish membership.

One item, however, remains to be discussed: why, if there is a strong dependence, do the New Testament and the Septuagint show such a low cosine similarity score in Figure 1 above? The most likely reason for this is that the similarity between the New Testament and the Septuagint was very strong but only really in a single specific area, that of the events of the Exodus. The high similarity here, then, would have been offset by a more general dissimilarity that was not seen in the relationship between the New Testament and Philo. What this suggests is that Philo took over the Septuagint understanding of the ἐκκλησία to a much greater extent than the New Testament did. The investigation above, however, supports the assertion that this was not a dismissal of the Septuagint ἐκκλησία by the New Testament authors but, instead, a focus on some very specific aspects of it, primarily the founding of the nation of Israel in the Exodus, whereas Philo adopted a wider portion of the semantic range.

So, in the end, we have evidence that supports several of Eyl's claims and does not disprove her central one, that, in the New Testament, Gentiles are being adopted into the people of Israel as opposed to replacing them or establishing a third category of people. In terms of how to translate ἐκκλησία in the New Testament, the focus on the Exodus and the high similarity with Philo should discourage us from looking too far afield to discover what the New Testament could possibly mean by ἐκκλησία. This evidence suggests that Eyl is correct in asserting that the word(s) a translator would tend to use to translate ἐκκλησία in other Greek literature, especially in Philo, should be the preferred translation in the New Testament as well. And since no one would think of using »church« for Philo, one should also shy away from this word in the New Testament.

Perseus Work ID	Author	Work
tlg0026.tlg002	Aeschines	On the Embassy
tlg0085.tlg005	Aeschylus	Agamemnon
tlg0027.tlg003	Andocides	De Pace
tlg0028.tlg005	Antiphon	On the murder of Herodes
tlg0551.tlg009	Appianus of Alexandria	Punic Wars
tlg0019.tlg006	Aristophanes	Birds
tlg0086.tlg034	Aristotle	Ars Poetica
tlg0535.tlg001	Demades	On the Twelve Years
tlg0014.tlg062	Demosthenes	Exordia
tlg0029.tlg005	Dinarchus	Against Aristogiton
tlg0557.tlg002	Epictetus	Enchiridion
tlg0006.tlg016	Euripides	Orestes
tlg0020.tlg001	Hesiod	Theogony
tlg0012.tlg001	Homeric Poems	Iliad
tlg0030.tlg005	Hyperides	Against Demosthenes
tlg0017.tlg006	Isaeus	Philoctemon
tlg0010.tlg013	Isocrates	To Nicocles
tlg0034.tlg001	Lycurgus	Against Leocrates
tlg0540.tlg027	Lysias	Against Epicrates and his Fellow Envoys
tlg0033.tlg001	Pindar	Olympia
tlg0059.tlg002	Plato	Apology
tlg0011.tlg007	Sophocles	Oedipus at Colonus
tlg0099.tlg001	Strabo	Geography
tlg0003.tlg001	Thucydides	The Peloponnesian War
tlg0032.tlg004	Xenophon	Symposium

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REDAKTIONSKRITIK RECONSIDERED

SOHAM AL-SUADI/FRANK KRÜGER

THE HISTORY OF REDAKTIONSKRITIK AND THE DEVELOPMENT OF A METHOD OF NEW TESTAMENT TEXTUAL CRITICISM

Conzelmann[1], Marxsen[2], Günther Bornkamm[3] and his students Gerhard Barth[4] and Heinz-Joachim Held[5] are considered the fathers of Redaktionsgeschichte in the German-speaking world.[6] John Donahuen reconstructs Redaktionsgeschichte by pointing out that it was an editorial scientific method.

> [...] the term »Redaktionsgeschichte« (literally, the history of the editing), in reference to a new movement in New Testament studies, was

1 Hans Conzelmann, *Die Mitte der Zeit Studien zur Theologie des Lukas,* Beiträge zur historischen Theologie (Tübingen: Mohr, 1954).

2 Willi Marxsen, *Der Evangelist Markus Studien zur Redaktionsgeschichte des Evangeliums, Forschungen zur Religion und Literatur des Alten und Neuen Testaments* (Göttingen: Vandenhoeck & Ruprecht, 1956). Hans Conzelmann acknowledges the thesis: »Es handelt sich um einen methodologischen ›Fortschritt‹, der seinerseits Literarkritik und Formgeschichte voraussetzt.« Hans Conzelmann, »Marxsen, Willi, der Evangelist Markus [Rezension],« Theologische Literaturzeitung 8 (1957): 586. In his review Conzelmann also writes: »Der Rez. verzeichnet mit Freude die überraschende Übereinstimmung in der Fragestellung, zu der wir unabhängig voneinander gekommen sind.« Conzelmann, »Marxsen, Willi, der Evangelist Markus,« 586.

3 Günther Bornkamm, »Matthäus als Interpret der Herrenworte,« *Theologische Literaturzeitung* 79 (1954): 341–46.

4 Günther Bornkamm, Gerhard Barth, and Heinz Joachim Held, *Überlieferung und Auslegung im Matthäusevangelium*, Wissenschaftliche Monographien zum Alten und Neuen Testament (Neukirchen, Kreis Moers: Neukirchener Verl. d. Buchh. d. Erziehungsvereins, 1960).

5 Ibid.

6 Harold H. Buls, »Redaction Criticism and Its Implications,« *Springfielder* 36 (1973): 260 traces the origin back to Reimarus and Strauss because the »creative element in the Gospels« was noticed by them already.

coined by Willi Marxsen (1954) in a review of the work of Hans Conzelmann.[7]

Based on the observation that the method goes hand in hand with revising the image of the »evangelists« many exegetes agree that the literary revision of a text is not solely due to editorial collection but to the theological interpretation of an ancient author.[8] In other words, the revision of the socio-historical analysis gave rise to a new methodological approach to the texts of the New Testament and their interdependencies. This development caused the terms »editorial criticism« and »editorial history« to be defined differently: editorial criticism comprises critical analysis of sources and editors' variants by a »scholarly« user and will be referred to as user criticism henceforth whereas editorial history is the rather restrictive method of investigating the editing of the textual witnesses.[9] While the first methodological approach primarily focuses on the writer and his intention, in the latter case the source and its literary development are of particular interest. After the so-called cultural turn cultural, gender and ritual studies, postcolonial theories and the so-called new historicism have considered the context of an author and, in the case of exegesis, the search for the historical author and his intentions, to be of minor importance[10]. As a consequence, editorial criticism was primarily perceived as literary criticism.

This contribution will show that the separation between Redaktionskritik as user criticism and Redaktionskritik as editing text witnesses cannot be maintained in the digital age because the contextualization of a script and its provenance for the existence of this source and the emergence of versions of

7 John Donahue, »Redaction Criticism: Has the Hauptstrasse Become a Sackgasse?,« in *The New Literary Criticism and the New Testament*, ed. Edgar V. McKnight, and Elizabeth Struthers Malbon (Sheffield 1994), 28.

8 Exemplary here: »As the method emerges, its two principal features are stress on the Evangelist as author (not merely collector of traditions) and awareness that the Evangelist's literary activity is a key to his theology.« Donahue, »Reduction Criticism,« 28.

9 In this article, the term »Redaktionskritik« is used. In contrast to »Redaktionsgeschichte« »Redaktionskritik« emphasises that the sources are not only used historically but that criticism is made of the sources: On one hand the methodological, critical investigation and on the other hand the antique criticism of the editorially processed sources.

10 Andreas Nehring, and Regina Ammicht Quinn, *Religious Turns – Turning Religions: Veränderte kulturelle Diskurse – neue Religiöse Wissensformen*, Religionskulturen (2008).

this source directly link methodological capabilities. We will show that the representation of dependencies as they are undertaken in provenance studies is also useful for the further development of Redaktionskritik as editorial criticism.

THE DEVELOPMENT OF THE METHOD

CHARACTERISTICS OF REDAKTIONSKRITIK

Guiding principle for many analyses of Redaktionskritik was that the theological profile of the ancient authors should be appreciated.[11] This has to do not least with larger theological questions about New Testament scholarship. Harald Oliver agrees that the quest for the historical Jesus had a great influence:

> There are certain functional similarities between the search for the original text of the New Testament and the quest for the historical Jesus. It is not only that some of the same issues are involved in both quests. In addition, scholars are often inclined to take the same attitude toward both. Recovery of the original text and recovery of the historical Jesus are indispensable to certain modern theological positions whose representatives are reluctant to surrender the religious values of such findings.[12]

As early as in the 1960s, it became obvious that the search for the original or initial text and the complexity of the historical material should not be examined separately.[13] Oliver confirms early that

11 Harold H. Oliver, »Implications of Redaktionsgeschichte for the Textual Criticism of the New Testament,« *Journal of the American Academy of Religion* 36 (1968): 41: »The acceptance of theological creativity at the levels of oral transmission, redaction and scribal transmission is complicated, however, by the theological perspectives of the scholars themselves.« So also: Robert H. Stein, »What is Redaktionsgeschichte?,« *Journal of Biblical Literature* 88 (1969): 46.

12 Oliver, »Implications of Redaktionsgeschichte,« 42.

13 Ibid, 44.

> Redaction-criticism restores the emphasis upon the original text as an aid to the recovery of the entire history of the material. Whatever values may lie in a special emphasis upon the pre-literary or transmissional stages of the text, all such studies are made possible by the redactional text. ... Their reconstructed history of the tradition is the proper foundation for the larger tasks of New Testament hermeneutics.[14]

In order to lay the right foundation for further steps of New Testament exegesis it is important to become aware of the possibilities of editorial criticism. The differentiation between Redaktionskritik as a user criticism and Redaktionskritik as an editorial criticism of text witnesses is indispensable with regard to the changes in the digital age.

REDAKTIONSKRITIK AS A USER CRITICISM

The following section considers the paradigms of editorial criticism as user criticism and critically examines how methodological approaches have changed in the course of digitization. Among the paradigms are i) the impact of the theological profile of an author, ii) the dependence on the two-source theory, and iii) the weighting of an »original«.

The theological profile of the ancient author | If it is possible to identify changes and additions to a source, and if these are regarded expressions of the theological profile of the author, the primary task will be to identify the individual profile of the writer with regard to his source. Stein thus characterizes Conzelmann's investigations:

> Redaktionsgeschichte for Conzelmann is simply the attempt to ascertain that which ›distinguishes him [the evangelist]‹ from his sources.[15]

The Gospel of Mark occupies a special position in this effort being the Gospel written in the »twilight« between oral and written tradition. Marxsen's studies

14 Ibid, 45.

15 Stein, »What is Redaktionsgeschichte,« 48.

of Mark clearly illustrate how the author proceeded from writing down the oral tradition by the early church to editing the evangelists.[16] In the very sense of the interdependencies as described in the two-source theory it is assumed that Matthew and Luke had Mark as a model to qualify theologically.[17] If the author with his specific editorial peculiarities is the focus of a synchronous editorial criticism, then individual authors must be assumed. Before the digital revolution the unavailability of historical persons, including so-called evangelists, left exegetes and religious scholars at a loss. Today the scientific emphasis has shifted away from the quest for historical persons to a more complex scenario.

> They are shadowy figures, without biographical substance to us. We know approximately when they lived, and less positively where they lived, but that tells us very little. What we have is the unique quality of their gospel compositions, tight literary constructions which conceal the historical identity of their authors.[18]

Due to the lack of possibilities to determine historical persons behind the reconstructed texts, the focus in the history of research, here paradigmatically reproduced by Kelber, fell on historical reconstruction.

> Perhaps the most important contribution redaction criticism has made to the study of the gospels is to turn the balance in the two hundred odd years struggle over the nature of the gospels-historical versus religious-decisively in favor of the latter.[19]

Even though investigating context or author of the Scriptures examines important socio-historical aspects, thus enabling us to distinguish the texts of

16 Ibid, 49.

17 On the special consideration of the Gospel of Luke and Acts: Gottfried Schille, »Auf dem Weg zur kritischen Redaktionsgeschichte,« *Theologische Versuche* 3 (1971): 65 f: »Man darf sich darüber nicht wundern. Denn das Doppelwerk des Lukas bot sich schon deshalb der Frage nach den Eigenarten des Verfassers zuerst an, weil dafür sowohl in den beiden anderen Synoptikern wie auch in den Paulusbriefen eine einigermaßen exakt bestimmbare und theologisch greifbare Vergleichsgröße vorlag.«

18 Werner H. Kelber, »Redaction Criticism: On the Nature and Exposition of the Gospels,« *Perspectives in Religious Studies* 6 (1979): 11.

19 Ibid.

the New Testament in their orientation and profile, it has remained attached to the model of individual authors and their Scriptures. In fact, it is difficult to assume single authorship for ancient writings. The co-authorship of the Pauline Letters and the subsequent titles of the Gospels are only superficial indications that the author and his theological profile in antiquity had little significance for the editing of sources. With digitization the pluralism of sources above all makes clear that writings were collected and adapted with regard to their theological context. With digitization it becomes clear that it is not the image of the author that changes but the meaning of material writing. In other words, it is not the author who represents the collective but Scripture. Thus, a change of perspective of great importance is achieved. It is no longer assumed that the author is in the best case a representative of a collective theology[20] but that the present text is the product of a collective that manifests itself as such not only in one but in several texts that may even differ from each other. The attribution of a text to an author or to a distinct theology is not appropriate in this context. Consequently, it is not assumed that there is only one theology of the Gospel of Mark but rather that there are diverse theologies because the Gospel of Mark was handed down in a multitude of sources. Consequently, the reconstructed initial text of Mark moves into the background and the versions of Mark are gaining importance for the reconstruction of early Christianity.

Dependence on the Two-Source Theory | If Redaktionskritik is considered user criticism, then the relationship between editorial criticism and form criticism must be clarified. This is a matter of concern which was above all connected to the concept of the so-called evangelist. Stein tries to emphasize a literary distinction:

> Form criticism is primarily concerned with the investigation of the individual pericopes and the oral period. Redaktionsgeschichte is

20 Also against ibid. 12: »The evangelist was seen as the exponent of group knowledge and his gospel as a collage of typical experiences rooted in the collective consciousness. His role as an author was minimal at best.«

> concerned with the theological conception of each gospel as an individual entity.[21]

While form criticism thus refers to small literary texts and takes the oral tradition into account, Redaktionskritik deals with the theological concept of a whole gospel. Even if these differences fundamentally change the approach to the New Testament text, the similarities are obvious since Redaktionskritik always remains a variant of form criticism. Consequently, the assumptions are:

1. Before the written there was an oral tradition
2. Sayings and narratives were handed down in collections
3. Texts of the New Testament may be classified according to their form and
4. The forms were preserved because of their (liturgical) use.[22]

In the two-source theory, all these prerequisites come to bear. The theory, which says that there is written interdependency between Matthew and Mark as well as the saying source Q and that this dependency relationship also exists between Luke, Mark and Q, while there are no literary connections between Matthew and Luke, assumes above all that it is right and important to reconstruct original or initial texts. Even if we do not have any written artefacts that would suggest such a source, a text is reconstructed i.e. placed in relation to other sources in this form.[23] In distinguishing between tradition

21 Stein, »What is Redaktionsgeschichte,« 52. Vgl. Dieter Lührmann, *Auslegung des Neuen Testaments*, Zürcher Grundrisse zur Bibel (Zürich: Theologischer Verlag Zürich, 1984), 92: »Die Literarkritik […] fragte hinter die Evangelien zurück nach den zuverlässigen Quellen, aus denen der wirkliche Jesus darzustellen wäre; die Formgeschichte fragte nach der von den Evangelisten aufgenommenen Überlieferung und deren ›Sitz im Leben‹ der Gemeinde […]. Mit der Redaktionsgeschichte wandte sich das Interesse den uns vorliegenden Evangelien und damit dem speziellen Profil der einzelnen Evangelisten zu, die je auf ihre Weise versuchen, mit Hilfe der ihnen zur Verfügung stehenden Überlieferung theologische Wahrheit angesichts einer aktuellen Situation zu vermitteln.«

22 Buls, »Redaction Criticism and Its Implications,« 261. He's very free with secondary literature. Only the most important aspects are emphasized by me.

23 Therefore the evaluation of Buls is mistaken: »It should be abundantly clear that Marxsen and Conzelmann do not allow Scripture to interpret Scripture except in those cases in which such interpretation buttresses their theses.« Buls, »Redaction Criticism and Its

and editorial work reconstructed sources are consequently regarded higher than existing texts.

In the form of user criticism depending on the two-source theory it is particularly noticeable that prior to all questions of New Testament exegesis the reconstruction of an initial text is attempted. This is particularly absurd when the question does not require any reconstruction at all. For example, no reconstructed original text is needed to simply compare the sources of the New Testament texts. Only if the assumption of a historical person like the historical Jesus or the historical Paulus is relevant for exegesis, we will consider the reconstruction of an initial text as being justified. It is characteristic for this form of textological analysis that the focus is on the Gospels (literary criticism). To emphasize three out of 27 writings methodically in this way and thus place unique emphasis on them seems scientifically inappropriate. Thus, the distinction between editing and reception is also tendentious because if no clear written treatment can be assumed, the reception will be subordinated to the editing. In this case, editorial criticism would be a variant of form criticism. Considering the aforementioned, the voice of Joachim Jeremias becomes more relevant again. Jeremias explained that the hypothesis of the entire common »Logienstoff« by Matthew and Luke originating from a common written source (Q) could not be maintained.[24]

Editorial work is defined by deviations from the original only | If Redaktionskritik means reconstructing an unknown original, then this step of analysis pursues the goal of linking secondary traditions with each other and referring to a common tradition. The individual parts preserved through li-

Implications,« ibid, 278.

24 Joachim Jeremias, »Zur Hypothese einer Schriftlichen Logienquelle Q,« *Zeitschrift für die Neutestamentliche Wissenschaft und die Kunde der Älteren Kirche* 29 (1930): 149. Dazu auch Schille, »Auf dem Weg zur Kritischen,« 68: »J. Jeremias nannte die erkannten Spruchgutballungen ad-vocem-Zusammenhänge und vermehrte ihre Zahl beträchtlich. Neu ist die Erkenntnis, dass solche Ballungen nicht nur bei jeweils dem einen oder dem anderen Seitenreferenten vorliegen, sondern bei Heiden, oft sogar in unterschiedlicher Ausformung, und bisweilen in zwei deutlich voneinander abweichenden Gestalten im gleichen Evangelium, wo ein Evangelist Sprüche zweimal wiedergibt. J. Jeremias zieht aus dieser Beobachtung den Schluß, es könne keine schriftliche Logienquelle gegeben haben. In der Tat sind durch die neuen Beobachtungen die Voraussetzungen der Hypothese Q weiter abgebaut worden.«

terary criticism are then assembled into a linguistic and theological profile. Therefore, more recent drafts of editorial criticism also suggest that the aim of editorial analysis must remain to find out how a particular text producer deals with written or oral pretexts for each editing stage. Finnern and Rüggemeier emphasize that in biblical studies one concentrates on creating the final editing stage, i.e. the stage that is considered to have become canonical.[25] The problem involved is obvious: On the one hand, only the information needed to reconstruct an initial text is used from (fragmentarily) transmitted sources. On the other hand, it is also decided according to theological criteria which editorial level is the last before canonization. In other words, an original text will only be allowed to be as original as canonization permits. With this reservation, exegesis is hypothesis-driven and implies insights that are not made transparent. What distinguishes a final editorial stage before canonization? What does canonization mean for the text form? Is canonization a process or a unique, conscious intervention? Questions that cannot be answered easily and, above all, have little to do with the critical starting position of the text.

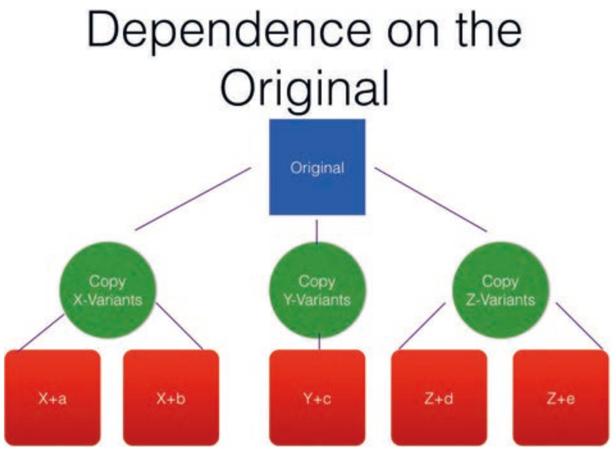

Figure 1: Dependence on the original

Let us therefore turn to the original problem: dependence on the original. The traditional model shows the interdependence of original and copy in the form of a family tree. The following preconditions are fulfilled:

25 Sönke Finnern, and Jan Rüggemeier, *Methoden der neutestamentlichen Exegese ein Lehr- und Arbeitsbuch*, Utb (Tübingen: A. Francke Verlag, 2016), 69.

a. There can be only one original which was »falsified« by the editors.
b. Dependency acts one-directional only. There are no cross references.
c. B is always dependent on A.
d. Editing is rated as secondary.

This model is represented, for example, in the »Potential Ancestors and Descendants« module.[26] The purpose of this module is described as follows:

> This module analyses the genealogical coherence between witnesses and can thus differentiate between potential ancestors and descendants. The relation between ancestor and descendant, and thus the genealogical coherence, is established by the proportion of variants in a witness that are prior (source variants) or posterior compared to the corresponding proportions of the compared witnesses. The degree of agreement determines the strength of the genealogical coherence.
> The genealogical coherence between ancestor and descendant is determined by which witness contains more prior variants, and the strength of coherence corresponds to the level of agreement between ancestor and descendant.
> The »Potential Ancestors and Descendants« module allows a sound judgment to be formed about the text-historical environment of a witness. It also permits a good guess to be made concerning which witnesses have the potential to be ancestors in a stemma.[27]

Phase 4 is based on this model and the information about potential ancestors and descendants is made freely available online for the Acts of the Apostles. It is obvious which variants were found by a witness, how these variants behave in comparison to the corresponding ancestors and descendants, how the text-historical environment of a witness can look like, and it can be possible to determine which witnesses have the potential to be ancestors in a stemma.

26 Guide to »Genealogical Queries – Acts« (Phase 3) - This guide is based on Gerd Mink's »Guide to ›Genealogical Queries‹ (Version 2.0)«, accessed May 07, 2019, http://intf.uni-muenster.de/cbgm2/guide_en.html.

27 »Guide to ›Genealogical Queries‹ (Version 2.0),« accessed May 07, 2019, http://intf.uni-muenster.de/cbgm2/guide_en.html.

Let us take a closer look at Acts 1:1:

Acts 1:1 In the first book, Theophilus, I wrote about all that Jesus did and taught from the beginning (NRSV)

Τον	Μεν	Πρωτον	λογον	εποιησαμην	περι	παντων	ω
2	4	6	8	10	12	14	16

Θεοφιλε	ων	Ηρξατο	ο	ιησους	ποιειν	τε	και	διδασκειν
18	20	22	24	26	28	30	32	34

The dependence ratio can be illustrated as follows:

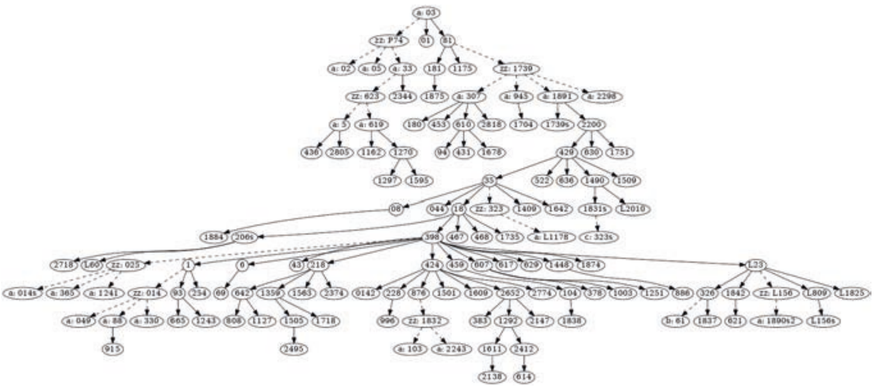

Figure 2: Figure 2[28]

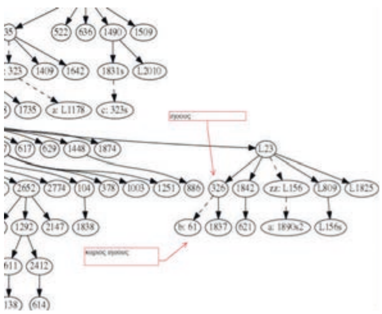

Figure 3: Detail of figure 2

28 »Genealogical Queries,« accessed May 7, 2019, https://ntg.cceh.uni-koeln.de/api/acts/ph4/textflow.png/2?range=All&mode=sim&width=1683.859375&fontsize=14.

In position 26 it is pointed out that the source reads 61 κυριοςιησους. The genealogical tree points to the fact that this could be a variant depending on 326. 326 has written down ιησους »only«. This means that 61 has made an extension of 326.

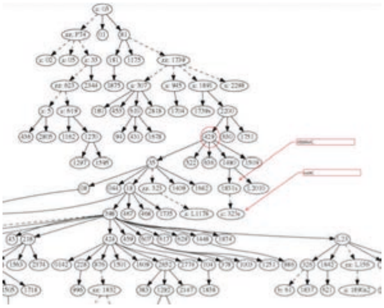

Figure 4: Detail of figure 2

According to this model the variant υιος does not depend on 326 but on 1831s. If one may nevertheless determine a common ancestor of the two variants, this would be 429.

In contrast to the text-critical apparatus of the 28th edition of NA many more variants are listed here. The reader is made aware of variants which he would not have noticed without this tool. Nevertheless, it is only possible for a layman to accept this dependency relationship since the algorithms behind the provisions are not naturally comprehensible. At first glance it becomes clear that there is only one original that has been editorially modified by the editors. It is also obvious in the graphic representation that the dependency is one-directional. There are no diagonal dependencies.

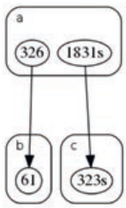

Figure 5: Dependency between the sources.
https://ntg.cceh.uni-koeln.de/acts/ph4/coherence#pass_id=50101026

Although in this example 326 and 1831s relate to the same text, a connection between the two sources is excluded. Also, a connection between 61 and 323s is excluded. In other words, it is assumed that text-critical differences arise only on the basis of the previous sources and cannot occur within an editorial level. B is always dependent on A and B1 is not influenced by B2. The valid principle is that the processing is secondary and the relevance of a source from a later editorial level must be proven first.[29]

As we said before, unlike Aland, we assume that the reconstruction of text levels must be result of and not prerequisite for exegetical work. In the digital age, editorial criticism is above all text criticism because the variants of the sources are understood as their results of editorial work. This means that the reconstructed source Q or any other »original« text can only be a result of and not a prerequisite for working with New Testament texts.[30] In order to ensure that all questions (not only those requiring the reconstruction of an initial text) can be addressed by exegetes with the New Testament textual inventory, it is vital to introduce a methodology that does not presuppose indirect theories (such as the Two Sources Theory), theological drafts (such as the assumption of the historical Jesus) or historical aporia (such as a straight-line canonization process oriented on writings). In the next section we would therefore like to vote in favour of understanding Redaktionskritik above all and exclusively as the editing of text witnesses.

PROVENANCE AND REDAKTIONSKRITIK

So far, we have outlined how different aspects of Redaktionskritik have to be considered in the age of digitization. However, digitization should not only be conceived by means of its consequences but also as a chance to further improve the traceability and quality of research. To this end, the digital shift provides new possibilities as, for instance, the collaboration in the web or the application of machine-based methods for text analysis. However, the typical

29 »Guide to ›Genealogical Queries‹ (Version 2.0),« accessed May 7, 2019, http://intf.uni-muenster.de/cbgm2/guide_en.html. Database and Premises: »We consider as a witness, not the manuscript itself, but the state of the text (without corrections) in a continuous text manuscript. Because the text of a manuscript can be much older than the manuscript itself, a witness that is preserved in a late manuscript (e.g. 10th century) can be a potential ancestor of a witness preserved in an early manuscript (e.g. 5th century).«

30 Soham Al-Suadi, »Historical Critical Exegesis and the Reappraisal of the Beginnings of Christianity in the Digital Age,« (forthcoming).

requirement for tools, which is that they have to be adapted to methods and workflows of the researcher, does no longer prevail as the new possibilities also require methods to be reconsidered with respect to the digital shift. Most of these aspects are not restricted to individual methods but rather become visible due to the massive amount of data suddenly available to interconnected researchers. The concept of linked data allows to build formally structured knowledge bases that provide information about semantic relations between individual entities. The most prominent examples of such structured knowledge bases are Wikidata (https://www.wikidata.org) and DBpedia (https://dbpedia.org/), which mainly consist of public domain knowledge. Provenance – a model of the source of information – could also be considered as such knowledge base, if structured appropriately. In the following, we will briefly introduce provenance modelling and its potential application in Redaktionskritik. While the available methods for provenance modelling such as PROV[31] or OPM[32] target some of these aspects, they do by no means entirely support all aspects.

THE GENERAL CONCEPT OF PROVENANCE

Provenance describes the origin of data and thus provides a convenient way for traceability of processes and their results. Today, provenance is mainly used in the computational, natural, and life sciences to enable users of research results to understand the entire scientific workflow beginning from raw data which eventually lead to scientific results and decisions based upon them[33]. Several different entities are typically involved in such workflows. This includes *entities* such as data, software or devices but also *activities* such as measuring natural phenomena or software aided data analysis. Moreover, different *agents*, e.g. persons or institutions, incorporating different roles are

31 Paul Groth and Luc Moreau, »Prov-Overview. An Overview of the Prov Family of Documents,« *Project report, World Wide Web Consortium* (April 2013).

32 Luc Moreau et al., »The Open Provenance Model: An Overview,« in *Provenance and Annotation of Data and Processes*, ed. Juliana Freire, David Koop, and Luc Moreau (Berlin, Heidelberg: Springer, 2008).

33 See, for instance, Max Schröder et al., »Provenance Patterns in Numerical – Modelling and Finite Element Simulation Processes of Bio-Electric Systems,« *41st International Engineering in Medicine and Biology Conference* (EMBC) Berlin, Germany (July 2019).

involved in the scientific investigation. Typically, complex interactions and influences between agents, entities and activities exist that have to be modelled to understand the actual workflow but also the reasons that lead to a particular decision. In the same vein, Belhajjame et al. define provenance as

> a record that describes the people, institutions, entities, and activities involved in producing, influencing, or delivering a piece of data or a thing. In particular, the provenance of information is crucial in deciding whether information is to be trusted, how it should be integrated with other diverse information sources, and how to give credit to its originators when reusing it.[34]

In addition to the original intention of recording the entities' development process provenance could also be used *within the process* of finding the interdependencies of different sources to an entity at hand. While the former assumes full knowledge about the relations to be described, the latter represents different states of knowledge about the relations and thus represents an actually developing knowledge base. In the following, we provide a description of PROV, a formal modelling mechanism based on the concept of linked data, illustrate its usage in Redaktionskritik, and discuss further requirements to be addressed.

PROV AS FORMAL MODELLING MECHANISM

PROV[35] provides a *formal* method to represent the interactions mentioned above. PROV builds upon the concept of linked data but restricts the available elements to those related to provenance. For this purpose, PROV distinguishes between types and relations.[36] Types describe underlying concepts, while relations describe interdependencies between types. Figure 6 exemplifies a PROV model depicting the generation of a 3D model for a computed tomography scan of the mandible using appropriate software.

34 Khalid Belhajjame et al., »Prov-Dm: The Prov Data Model. Technical Report,« *URL*: https://www.w3.org/TR/2013/REC-prov-dm-20130430/ (October 2013).

35 Groth and Moreau, »Prov-Overview. An Overview of the Prov Family of Documents.«

36 Belhajjame et al., »Prov-Dm: The Prov Data Model. Technical Report.«

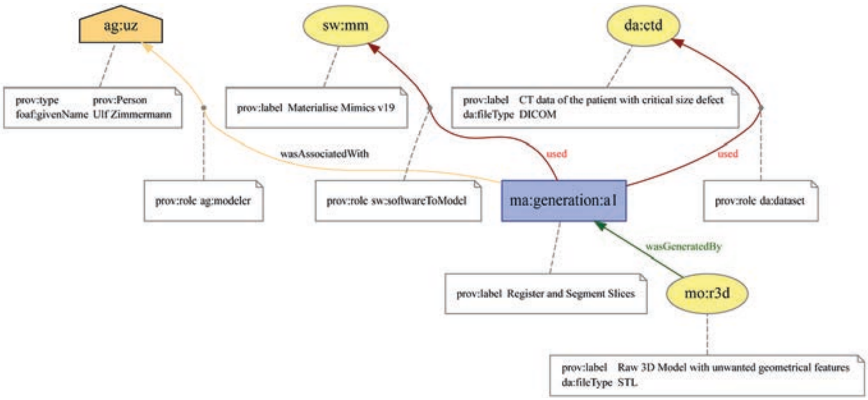

Figure 6: The key concepts of PROV. Types are represented by boxes of different shapes (yellow ellipses represent entities, blue rectangles activities, and orange pentagons agents), relations by arrows.[37]

As can be seen from the graph three different types exist:

- *Entities* represent physical, digital or other *things* with properties such as datasets, software or devices, but also documents, sentences or individual words. In Figure 6, entities are, for instance, sw:mm (the software), da:ctd (the CT data), and the resulting 3D model mo:r3d.
- *Activities* represent processes that create entities such as recording sensor data or translating a document. The activity in the provided example is the registration and the segmentation (ma:generation:a1) of the individual slices of the CT data.
- *Agents* are responsible for the execution of activities and thus influence the process of execution. Persons, groups or organisations are typical examples for agents but agents possibly represent the influence of entire cultures. The agent ag:uz executed the activity in the example above.

To actually represent the interdependencies of entities, activities and agents

37 Example taken from Schröder et al., »Provenance Patterns in Numerical – Modelling and Finite Element Simulation Processes of Bio-Electric Systems.«

the PROV modelling formalism provides the concept of relations. Different relations exist, as for instance:

- an activity *used* an entity: the segmentation *used* the software and the CT data,
- an entity *was Generated By* an activity: the 3D model *was Generated by* the segmentation, or
- an agent *was Associated With* an activity: the modeller *was Associated With* the segmentation.

While the above example is rather simple, it illustrates interdependencies between different types by relations. Only a small subset of the relations is used in the example. The PROV formalism provides more fine-grained possibilities to specify further relationships. An agent, for instance, might have *acted On Behalf* of another agent which might, for instance, reflect cultural influences.

REDAKTIONSKRITIK AS THE EDITING OF TEXT WITNESSES

Redaktionskritik aims at identifying the origin of individual parts of texts down to the level of single words. From a technical perspective this process of finding the source can be interpreted as establishing provenance information about a text. For each part of a given text (e.g. phrases or individual words) the source is provided. In contrast to conventional modelling mechanisms such as the genealogical view, which specifies the origin by means of a simple tree-like structure, the application of PROV would allow each kind of linking topology. Moreover, PROV facilitates the inclusion of activities and agents in order to specify more fine-grained information about influences and reasons that lead to decisions about potential sources. The explicit modelling of the influence of agents, e.g. the cultural influence, extends the information about the source of individual words by information concerning their use. To this end, the application of a PROV like modelling formalism would allow to distinguish between user criticism and editorial criticism. For instance, a PROV-like model could include different agents that influence activities which are executed by different agents. By using different kinds of relations PROV provides a more powerful formalism to illustrate interdependencies of different sources. However, text criticism typically focuses on providing explicit information about the origin of particular words or phrases only. The origin of the remaining text is deemed implied. Employing a formal mechanism (in the sense of information modelling) allows for explicit modelling the origin of all parts of the text which in return provides a well-defined model in terms of interpretability.

The investigation of a) the sources understood as entities, b) the influences on the editorial process understood as activities, and c) the differentiated consideration of ancient authors understood as agents poses the following hypothesis:

e. Sources (entities)
   There is no fragmentation of texts within one source.
   Although editorial criticism under digital conditions is not a narrative criticism, it is becoming increasingly clear that fragmentation of texts within one source is not conducive. In this sense, the development is examined within a comprehensible framework by considering the dependencies of the sources and their supplements and omissions
   Texts may have undergone many editorial changes. Thus, reconstructing the initial text or the final editing fades into the background
   Dependencies are examined contextually and are not static (A may be dependent on B in case 1; A may be dependent on C in case 2).
f. Editorial Process (activity)
   Environment and intention can be considered equal in influence.
   This means that no difference is made between theologically motivated editorial work and socio-politically motivated editorial work.
   The dichotomies established between theology and culture, between religious and pagan, or between religious groups are thus dissolved.
   An editor is no longer regarded stereotypical representative of a certain milieu.
   Influences are considered (liturgical, ritual actions). Here it is possible to take up ritual or other sociological-cultural influences and use them as a foundation for text production.
g. Authors (agents)
   No differentiation is conducted between an author and his text in his socio-political environment. Understanding authors as agents offers an opportunity to involve writers, clients and editors in the

interpretation of a source. Their roles can relate to the entire editing process or to parts only. In addition, one person may be responsible for several tasks.

Theological developments of the early church can be reconstructed. This aspect is particularly important for interdisciplinary work. Many sources can only be interpreted if church historians, New Testament scholars and papyrologists work together.

Redaktionskritik is therefore understood as an editing process. This also applies to text-critical observations. It is therefore only logical that textual criticism should also be regarded as editorial criticism and thus from an editorial point of view. In our opinion, the analysis of the development of New Testament sources in the digital age changes these three essential aspects of New Testament text research.

CONCLUSION

With this interdisciplinary approach, two essential aspects in particular are reformulated: a) modelling uncertainty and b) collaborative versioning.

a. Modelling uncertainty
   Redaktionskritik can be seen as retrospectively establishing provenance information about texts. In contrast to the application of provenance in the information sciences, where the origin of each entity is known for sure, the retrospective application introduces ambiguities about the origin. These uncertainties should be included as confidence values in an interdependence model of the texts. These confidence values might then be used in order to allow for automated reasoning about entire texts or origins.
b. Collaborative versioning
   Redaktionskritik is active research where relations between entities (A is origin of B) are constantly changed. Also, when using the proposed method of provenance, the influence of agents might be changed in the different versions of the model. The state of knowledge evolves over time or differs between researchers. This development of the

inferred interdependencies of sources calls for the maintenance of versions. The concept of versioning allows to trace the unfolding cultural reproduction. Versioning is for instance used in software development where different persons collaboratively develop a software in order to keep track of decisions and other issues.

Starting from the observation that Redaktionskritik has adapted to scientific developments and has continuously changed its character, the potentials of the text-critical method in the digital age were examined. The Latin word provenire, which refers to an emergence or development, aptly characterizes the change of perspective offered by interdisciplinary cooperation between theology and engineering. Redaktionskritik is understood as a process and as an active method. This means that all data belonging to a source are made usable for the reconstruction of the development. Metadata are not only collected to answer a question but also serve as a basis for other research questions. For the »emergence« an interaction between agents, activities and sources is assumed. This interaction of people gives rise to questions the other models do not evoke. It should be noted that this is not an extension of the previous model but a better representation of ancient knowledge networking. We would like to increase the potential for posing new research questions which we have not asked so far because we can display all available knowledge in the graphs. The next steps would be to transfer PROV to Redaktionskritik in actual cases and to carry out a feasibility study to identify necessary extensions. This may result in an understanding of Redaktionskritik as variant criticism in the future, thus liberating the method from theological preconditions and adapting in to interdisciplinary application.

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III
DIE DIGITALISIERUNG DES CODEX SINAITICUS UND DIE FRAGE NACH DER VERANTWORTUNG DES ERINNERNS

CODEX SINAITICUS – DIE GESCHICHTE EINER WISSENSCHAFTSSENSATION

CHRISTFRIED BÖTTRICH

Die (Wieder-)Entdeckung[1] des *Codex Sinaiticus* ist als eine der großen Wissenschaftssensationen des 19. Jahrhunderts in Erinnerung geblieben. Sie fällt in eine Zeit, in der die Gelehrten der westlichen Welt scharenweise in den Orient strömen und ihren Schreibtischsessel bereitwillig gegen einen Kamelsattel eintauschen. Ihr großes Ziel ist vor allem die Auffindung neuer Quellen, namentlich in Gestalt von Artefakten sowie von Handschriften antiker Texte in diesem bislang noch weitgehend unbekannten Teil der Welt. Neugierde und Entdeckerfreude gehen dabei Hand in Hand mit der Entwicklung neuer Editionsmethoden und textkritischer Grundsätze. Die Handschriftenreisen dieser Epoche fördern in großem Umfang jenes Material zutage, das an den Universitäten Europas und Amerikas die Klassischen Altertumswissenschaften erblühen lässt und die Sammlungen vieler Nationalmuseen begründet.

Gefördert und flankiert wird diese Entwicklung durch einen nicht weniger faszinierenden Aufbruch an neuen Reisemöglichkeiten. Am Anfang des Jahrhunderts reist man noch mit der Postkutsche und zu Pferde; am Ende stehen ein immer dichter werdendes Eisenbahnnetz und eine boomende Dampfschifffahrt.

Constantin Tischendorfs (1815–1874) Vorstoß zum Bibeltext des 4. Jahrhunderts fügt sich in diesen atemberaubenden Aufbruch einer neuen Forschergeneration ein. Seine Funde lassen sich durchaus mit der Entdeckung der Oxhyrinchos-Papyri, der Qumran-Schriften oder der Nag-Hammadi-Bibliothek im 20. Jahrhundert vergleichen. Denn allen diesen Funden und Textbeständen ist eines gemeinsam: Ihre Erschließung startet heute – im digitalen Zeitalter – noch einmal eine zweite, neue Entdeckungsgeschichte.

Wann immer verschollen geglaubte Texte aus entfernten Bibliotheken, Höhlen oder Gräbern auftauchen, dürfen sie sich eines großen Medieninter-

1 Vgl. dazu Christfried Böttrich, »Supplements to the Re-Discovery of Codex Sinaiticus in the Nineteenth Century,« *Early Christianity* 8/3 (2017): 395–406.

esses sicher sein. Das ist ganz besonders im Falle des *Codex Sinaiticus* so: Ein alter Bibelcodex aus dem 4. Jahrhundert in Majuskelschrift, den überhaupt nur Spezialisten lesen können, füllt jahrzehntelang die Spalten der internationalen Journale, bringt Diplomaten aller Regierungen in Bewegung, lockt ein breites Bildungsbürgertum in Sonntagsvorlesungen und bleibt bis in unsere Tage ein beliebter, gern benutzter Aufmacher für die großen Zeitschriften, wenn es wieder einmal um das Phänomen »Bibel« geht. Das Thema *Codex Sinaiticus* wird jedenfalls von 1859 an zu einem Lieblingskind der Medienwelt und löst immer neue Wellen der Aufmerksamkeit aus: zur Entdeckungszeit in den 1860er Jahren, im Umfeld des spektakulären Verkaufs nach London 1933, während der neuen Funde im Sinai-Kloster in den 1970er Jahren, im Rahmen der Kolonialismus- und Beutekunst-Debatte am Ende des 20. Jahrhunderts. Aufmerksamkeit gilt dabei freilich nicht nur der Handschrift selbst, sondern auch den abenteuerlichen Umständen ihrer (Wieder-)Entdeckung und ihres Transfers nach Europa. Mit dem Digitalisierungsprojekt 2005-2009 hat dieses Medieninteresse schließlich einen erneuten und vorläufig letzten Höhepunkt erreicht.

Die Erschließung des *Codex Sinaiticus* ist auf exemplarische Weise zu einem Impuls geworden, innovative Publikationsformen zu entwickeln. Tischendorf legt bei der Edition der Handschrift in allen ihren Teilen ein enormes Tempo vor: Die ersten Blätter von 1844 erscheinen bereits zwei Jahre später;[2] der Hauptbestandteil des Fundes von 1859 wird innerhalb von drei Jahren unter komplizierten logistischen Bedingungen und angesichts großer methodischer Herausforderungen mustergültig zum Druck gebracht.[3] Die Technik des Faksimiledruckes beschreitet mit dieser Edition neue Wege. Tischendorf und die Leipziger Druckerei von Giesecke & Devrient erringen auf der Londoner Weltausstellung im Mai 1862 (auf der sie erste Druckbögen präsentieren) »die große Preismedaille«. Mit der Digitalisierung der verstreuten Bestandteile des Codex in den Jahren 2005–2009 entwickeln die Fachleute eine Art der Textdarstellung, die man mit Fug und Recht als

2 Constantin Tischendorf, *Codex Friderico-Augustanus sive fragmenta* … (Leipzig: Franz Koehler, 1846).

3 Constantin Tischendorf, *Bibliorum Codex Sinaiticus Petropolitanus* … (Petropoli: Giesecke & Devrient, 1862). Ein von Tischendorf gern und nicht ohne Stolz herangezogenes Gegenbeispiel stellt die Edition des *Codex Vaticanus* durch Kardinal Angelo Mai dar, der dazu 30 Jahre (1828–1858) benötigte.

Pionierleistung bezeichnen kann. Dementsprechend titelt auch der britische Textkritiker James K. Elliott am 29. Januar 2010 in *Times Literary Supplement*: »Bible united. Codex Sinaiticus online: a gold standard for ancient texts in the digital age«.[4]

Die Geschichte hat noch eine weitere Seite. An kaum einem anderen Handschriftenfund sind die Kontroversen um Eigentumsrechte derart heftig diskutiert worden wie gerade hier. Im 19. Jahrhundert gelangen Kulturgüter aus dem Orient in großer Zahl in die westeuropäischen und amerikanischen Sammlungen – und das meist auf verwickelten, zum Teil auch chaotischen Wegen. Die Lage ist einigermaßen kompliziert. Einerseits gibt es einen schwunghaften Handel mit Artefakten oder die Praxis von Schenkungen (die oftmals nichts anderes ist) – auch wenn wir die Umstände und Konditionen solcher Geschäfte heute sehr viel differenzierter beurteilen, als sie damals beurteilt wurden. Andererseits kommt es in großem Umfang zu illegalen Aneignungen beziehungsweise schlicht zu Raub – auch wenn dadurch das eine oder andere unersetzliche Objekt für die Nachwelt gerettet worden sein mag. Vor diesem Hintergrund eröffnet die Digitalisierung ganz neue Möglichkeiten, alte Kontroversen zu überwinden und neue, gemeinsame Verantwortlichkeiten zu begründen. Der *Codex Sinaiticus* erscheint als eine Art Musterbeispiel dafür, wie alte, einst verschollene Quellentexte heute auf neue Weise zugänglich gemacht und für die Arbeit eines weiten Expertenkreises bereitgestellt werden können. An seiner Geschichte lassen sich sämtliche Probleme, Missverständnisse, Umwege sowie Irrungen und Wirrungen ablesen, die mit diesem Problemkreis verbunden sind. Das neue, digitale Format zeigt hingegen die Chancen und Potentiale, die ein kluger Einsatz moderner Technik bereithält. Deshalb soll der *Codex Sinaiticus* mit seiner bemerkenswerten Geschichte hier auch noch einmal in Erinnerung gerufen werden.[5]

4 James K. Elliott, »Bible united. Codex Sinaiticus online: a gold standard for ancient texts in the digital age,« *Times Literary Supplement* (29. Januar 2010): 14.

5 Vgl. dazu umfassend Christfried Böttrich, *Der Jahrhundertfund. Entdeckung und Geschichte des Codex Sinaiticus* (Leipzig: EVA, 2011).

CODEX SINAITICUS/FRIDERICO-AUGUSTANUS/ PETROPOLITANUS

Der so genannte *Codex Sinaiticus* ist die einzige der großen Pergament-Handschriften aus dem 4. Jahrhundert, die in vier Spalten geschrieben ist.[6] Darin besteht sein auffälligstes Charakteristikum. Der Name »Sinaiticus« verweist auf die Herkunft, denn die längste Zeit seiner Geschichte war der Codex im Sinaikloster beheimatet. *Codex Sinaiticus* fungiert dabei zugleich als Sammelbezeichnung für alle seine einzelnen Bestandteile, wobei stets zu beachten ist, dass auch andere Handschriften vom Sinai den Zusatz Sinaiticus tragen.

Die Entstehung des Codex hat mit der Geschichte des Klosters zunächst nichts zu tun. Als das »Heilige und Kaiserliche Kloster des von Gott betretenen Berges Sinai« im 6. Jahrhundert unter Justinian gegründet wird,[7] ist der Codex bereits knappe 200 Jahre alt. Vermutlich entsteht er in der Mitte des 4. Jahrhunderts in Cäsarea; gelegentlich wird auch Alexandria ins Spiel gebracht. Es war Tischendorfs Idee, den Codex mit jenem berühmten Bibelauftrag des Kaisers Konstantin in Verbindung zu bringen. Dagegen sprechen jedoch mehrere Gründe – vor allem der, dass der Codex mit seinen ursprünglich circa 730 großen, nahezu quadratischen Blättern und der vierspaltigen Anordnung für den von Konstantin intendierten liturgischen Gebrauch (»leicht zu lesen und bequem für den Gebrauch, leicht zu transportieren, bestimmt für die Verkündigung der Kirche«) denkbar ungeeignet wäre.[8] Deshalb legt sich die Vermutung nahe, dass die Funktion dieser aufwändigen Handschrift wohl eher im Bereich des Textstudiums und der Textproduktion zu suchen ist. Theodore Skeat hat die These aufgestellt, dass der *Codex Sinaiticus* das Modell gewesen sei, um die Herstellung von »Vollbibeln« zu erproben. Am *Sinaiticus* habe man gleichsam geübt und am *Vaticanus* dann die gesammelten Erfahrungen umgesetzt. Der *Sinaiticus* aber sei dann als eine Art ständig aktualisierte und bearbeitete »Mutterkopie« im Scriptorium von

6 Das betrifft alle erzählenden Bücher; die poetischen Bücher sind im Layout zweispaltig angelegt.

7 Ihor Ševčenko, »The Early Period of the Sinai Monastery in the Light of its Inscriptions,« DOP 20 (1966): 255–264; G. H. Forsyth, »The Monastery of St. Catherine at Mount Sinai: The Church and the Fortress of Justinian,« DOP 22 (1968): 1–19, 43 Bildtafeln.

8 Christfried Böttrich, »Codex Sinaiticus and the use of manuscripts in the Early Church,« *ET* 128/10 (2017): 469–478.

Cäsarea weiterverwendet worden.[9] Manches bleibt an dieser These spekulativ. Doch zweifellos verdankt sich der Codex jenem Aufschwung in der Handschriften-Produktion, der unter Konstantin einsetzt. Die Suche nach innovativen Wegen von Textgestaltung und Textanordnung ist ihm als Signatur eingeschrieben. Von Anfang an ist das Ringen um Theorie und Praxis von Texteditionen schon ein Teil der Geschichte dieser einzigartigen Handschrift.

Wie aber kamen die in Cäsarea bereits stark bearbeiteten Pergamentblätter auf den Sinai? Schon früh wählen Eremiten den Moseberg in der Wildnis des südlichen Sinai zum Ort asketischen Lebens.[10] Doch erst 530 gründet Kaiser Justinian hier eine befestigte Klosteranlage, die 548–560 auch eine neue, der Verklärung Christi geweihte Kirche erhält. Von da an beginnt die eindrucksvolle Geschichte des Klosters, das allen Stürmen trotzt und – niemals zerstört – bis auf den heutigen Tag existiert. Vom 11. Jahrhundert an heißt es das »Kloster der Heiligen Katharina«, deren Reliquien man nun bewahrt und verehrt.[11] Für die Übersiedlung des Codex auf den Sinai gibt es zwei Möglichkeiten: Entweder wird er um 530 herum als kaiserliches Geschenk dem neu gegründeten Kloster überreicht, oder er gelangt 638, als Cäsarea von den Arabern erobert wird, im Gepäck von Flüchtlingen auf den Sinai. Die zweite Möglichkeit ist die wahrscheinlichere. Der Codex wird in den Mauern des Klosters, gemeinsam mit anderen Büchern, zunächst in Sicherheit gebracht. Dass er sich zuvor auch tatsächlich in Cäsarea befand, belegen die Kolophone am Schluss der Bücher Esra und Esther, die sich den Korrektoren der Gruppe C (6. Jahrhundert?) zuordnen lassen.[12]

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9 Theodore C. Skeat, »The Codex Sinaiticus, the Codex Vaticanus and Constantine,« *JThS* 50 (1999): 583–625; James K. Elliott, »T. C. Skeat on the Dating and Origin of Codex Vaticanus,« in *The Collected Biblical Writings of T. C. Skeat*, ed. James K. Elliott. (Leiden: Brill, 2004), 281–294.

10 Peregrinatio 1,1–5,12; CCSL 175, 1965, 37–90. Egeria weiß um 396 zu berichten, dass es am Fuße des Moseberges viele Einsiedeleien sowie eine Kirche mit Priester gäbe.

11 Carlo Rossi und Augusto de Luca, *Das Kloster Sankt Katharina im Sinai und seine biblische Geschichte* (Wiesbaden: White-Star-Verlag, 2006).

12 Zur Geschichte der Bibliothek von Cäsarea vgl. ausführlich Andew J. Carriker, *The Library of Eusebius of Caesarea* (VigChr.S. 67, Leiden/Boston: Brill, 2003); Marco Frenschkowski, »Studien zur Geschichte der Bibliothek von Cäsarea,« in *New Testament Manuscripts. Their Texts and Their World*, hg. Thomas J. Kraus und Tobias Nicklas (Texts and Editions for New Testament Study 2; Leiden/Boston: Brill 2006), 53–104.

AUFBRÜCHE DER TEXTKRITIK IM 19. JAHRHUNDERT

Die (Wieder-)Entdeckung des *Codex Sinaiticus* verbindet sich wesentlich mit einem Namen: Constantin (von) Tischendorf.[13] Geboren wird er am 18. Januar 1815 in Lengenfeld als Sohn eines Gerichtsarztes. 1834–38 studiert er in Leipzig Theologie, wo für ihn besonders Johann Georg Benedict Winer (1789–1858)[14] als Lehrer prägend wird. Winer, der Tischendorfs philologische Begabung entdeckt, treibt ihm die poetischen Flausen[15] aus und lenkt sein Interesse auf die Textkritik.

Um den Text des Neuen Testaments ist es in der Mitte des 19. Jahrhunderts nicht gerade zum Besten bestellt. Seit dem *Novum Testamentum Graece* des Erasmus von 1516 hatte es immer nur Korrekturen, Verbesserungen und Ergänzungen gegeben – im Ganzen eine gelehrte Flickschusterei, der es vor allem an einer stringenten Methodik fehlte. Den jüngsten Stand bietet 1831 das *Novum Testamentum Graece* von Karl Lachmann (1793–1851), das jedoch nach wie vor auf der späten byzantinischen Texttradition basiert.[16] Tischendorf, von seinem Lehrer Winer auf die Spur gesetzt, will an den frühen Text heran.[17] Das Objekt seiner Begierde ist deshalb zunächst der *Codex Vaticanus* in Rom, der unter Verschluss gehalten wird und von dem nur ausgewählte Lesarten bekannt sind.

Nach dem Studium in Leipzig wird Tischendorf für ein Jahr (1838–1839) Hauslehrer im Pfarrhaus von Großstädteln. Hier setzt er zu einem großen Wurf an und erarbeitet im jugendlichen Übermut eine neue Methodik zur Konstituierung des neutestamentlichen Textes. Zugleich verbindet er damit weitreichende Pläne. Er will zurück zu den ältesten Quellen, um den Text des Neuen Testaments jenseits von Korrekturen auf eine völlig neue Basis zu stel-

13 Vgl. Christfried Böttrich, Art. Tischendorf, Constantin von, *TRE* 23 (2001): 567–570; dazu ders., *Tischendorf-Lesebuch. Bibelforschung in Reisabenteuern* (Leipzig: EVA, 1999).

14 J. G. B. Winer war gerade mit einem bedeutenden Werk hervorgetreten, das insgesamt sechs Auflagen erlebte: *Grammatik des neutestamentlichen Sprachidioms* (Leipzig: Vogel, 1822). Tischendorf hat später seinem Lehrer einen Nachruf gewidmet in: *Beilage zur Allgemeinen Zeitung*. Augsburg (Nr. 143, 23.5. 1858): 2297–2298.

15 Tischendorf fühlt sich zunächst als Dichter; er veröffentlicht 1838 eine Gedichtsammlung und 1839 eine Novelle.

16 Karl Lachmann, *Novum Testamentum Graece* (Berlin: Reimer, 1831).

17 Programmatischen Charakter hat in dieser Hinsicht: Constantin Tischendorf, »Zur Kritik des Neuen Testaments,« *ThStKr* 15/2 (1842): 496–511.

len. Diese Quellen aber müssen erst noch gesammelt, aufgesucht und überhaupt aufgefunden werden. Einstweilen erarbeitet er eine erste eigene Edition des *Novum Testamentum Graece*, die 1841 in Leipzig erscheint.[18] Mit deren Prolegomena habilitiert er sich am 26. Oktober 1840 in Leipzig; die Universität Breslau verleiht ihm 1843 den Dr. theol. h. c., was einem üblichen Verfahren entspricht. Diese Ausgabe von 1841 ist die erste von insgesamt 24 Auflagen nach elf selbständigen Drucken zu vier Hauptrezensionen, die in den nächsten Jahren folgen.[19]

Tischendorf ist jung, abenteuerlustig und ohne einen einzigen Gulden in der Tasche, was ihn jedoch nicht daran hindert, auf Reisen zu gehen. Am Reformationstag 1840 bricht er mit der Postkutsche Richtung Paris auf – ein hochgestimmter Lutheraner, durchdrungen von einer konservativen Wort-Gottes-Theologie. Sein Ziel ist es, die europäischen Bibliotheken zu besuchen und alle bekannten Handschriften mit eigenen Augen zu sehen. Den Anfang will er in Paris mit dem (noch unentzifferten) *Codex Ephremi rescriptus* machen. Dass sich diese Reise zeitlich bis Weihnachten 1844 und räumlich bis in das ferne Ägypten ausdehnen wird, ist zu diesem Zeitpunkt noch nicht abzusehen.

TISCHENDORF UND DIE EIGENDYNAMIK DES REISENS

Tischendorf ist Exponent einer neuen Generation von Gelehrten: zielorientiert, enthusiastisch, ein wenig romantisch und einigermaßen unbekümmert, was politische Verhältnisse betrifft. Den Orient hat Tischendorf zunächst noch gar nicht im Blick, wenngleich das Orientfieber in Europa seit Napoleons Ägyptenfeldzug (1798–1801) und der Entzifferung der Hieroglyphen (1822) längst schon grassiert. Sein Hauptproblem heißt zunächst »Sponsoring«. Die Universität Leipzig und die sächsische Regierung lehnen eine finanzielle Unterstützung von Tischendorfs geplanter Handschriftenreise ab. Sein älterer Bruder schießt ihm etwas vor; er selbst hungert sich in Paris mit

18 *Novum Testamentum graece. Textum ad fidem antiquorum testium …* (Leipzig: C. F. Koehler, 1841).

19 Vgl. die vollständige Zusammenstellung bei Christfried Böttrich, *Bibliographie Konstantin von Tischendorf (1815–1874)* (Leipzig: Universitätsverlag, 1999).

Auftragsarbeiten und Abschriften für Leipziger Professoren durch. Erst mit den unerwarteten Erfolgen beginnen auch die Mittel zu fließen.

In der Nationalbibliothek von Paris verbringt Tischendorf am *Codex Ephraemi rescriptus* insgesamt zwei Jahre intensiver Arbeit. Die Entzifferung dieses berühmten Palimpsests wird für ihn zur Visitenkarte, die ihm neue Kontakte vermittelt. Von Paris aus bereist er Holland, Süddeutschland, Frankreich, die Schweiz und Italien. Als er sich in Livorno aufhält, entsteht die spontane Idee einer Überfahrt nach Ägypten, weil die Hapag Lloyd gerade eine neue Linie eröffnet hat. Ein Schritt ergibt sich aus dem anderen. Plötzlich ist er in Alexandria, dann in Kairo, dann auf dem Sinai. Diese Ausdehnung der Reise hat auch ihre Gefahren. Tischendorf berichtet davon in einer unterhaltsamen Reisebeschreibung, in der er den Orient wie eine Welt aus 1001 Nacht beschreibt.[20]

Im Mai 1844 trifft Tischendorf auf dem Sinai ein. Und damit beginnt eine Geschichte, die letztlich sein ganzes weiteres Leben bestimmt. In einem Korb mit schadhaften, ausrangierten Pergamentblättern entdeckt er jene Handschrift, die fortan als *Codex Sinaiticus* die gelehrte Welt in ihren Bann ziehen wird. Im Ganzen erstreckt sich die Auffindung und Sicherung des Bestandes über einen Zeitraum von 15 Jahren; nimmt man die Neuen Funde von 1975 mit hinzu, sind es 131 Jahre. Tischendorf unternimmt noch zwei weitere Reisen zum Sinai (1853 und 1859), doch erst auf der dritten gelingt ihm dann auch die Zusammenführung der längst schon zerstreuten Blätter. Zum entscheidenden Datum wird der 4. Februar 1859, an dem die verschollen geglaubten Blätter wieder auftauchen.

VERWIRRUNGEN UM EIN ALTES MANUSKRIPT

Mit den Reisen Tischendorfs rückt das Kloster auf dem Sinai gleichsam über Nacht in das Blickfeld des gebildeten Europas. Genauer geschieht das im Jahr 1859, denn bis dahin hält sich Tischendorf mit seinem Fund von 1844 noch bedeckt. Im Rückblick berichtet er darüber:

20 Constantin Tischendorf, *Reise in den Orient* (Leipzig: B. Tauchnitz jun., 1845/1846); Rez. von J. J. Fallmerayer, *Monatsblätter zur Ergänzung der Allgemeinen Zeitung*. Augsburg (Februar 1846): 79–84; (März 1847): 129–133.

> »Als ich im St. Katharinenkloster am Fuß des Sinai im Mai 1844 die Bibliothek untersuchte, stand in der Mitte derselben ein großer breiter Korb mit einer Anzahl alter Pergamentreste. Der Bibliothekar, ein wohlunterrichteter Mann, sagte mir, dass ähnliche Überreste, zwei Körbe voll, ins Feuer geworfen worden seien. Wie groß war mein Erstaunen, in der dritten Füllung des verhängnisvollen Korbes eine beträchtliche Anzahl Blätter von einer griechischen Bibel des Alten Testaments zu finden, die mir sogleich den Eindruck einer der ältesten, die ich je gesehen, machte.«[21]

Um diesen ominösen Korb hat sich seither eine lange Diskussion entsponnen. Dass man Pergament verbrennt, ist unwahrscheinlich – zum einen, weil es dabei höchst unangenehm riecht, zum anderen, weil man es noch weiterverwenden kann. Hier gab es wohl ein schlichtes Missverständnis in der Kommunikation, die vermutlich auf Französisch verlief. Richtig jedoch ist, dass es im Kloster einen solchen Korb für unbrauchbar gewordene und aussortierte Pergamentbögen gab, die zur sekundären Verwendung (etwa für Bucheinbände) gesammelt wurden. Bücher, die mit alten (beschriebenen) Pergamentblättern eingebunden sind, lassen sich bis heute im Kloster nachweisen. Auch spätere Reisende haben von vergleichbaren Körben berichtet. Anders wäre es auch gar nicht zu verstehen, dass man Tischendorf einige dieser Blätter einfach überlässt. Die Vorstellung jedoch, dass dieser Korb ein regulärer Aufbewahrungsort alter Handschriften gewesen sei, ist eher unwahrscheinlich. Wir wissen heute leider nicht mehr, wie dieser Korb aussah. Aber in Körben liegen Codices nie.

Tischendorf findet bei seinem Aufenthalt im Mai/Juni 1844 einen Stapel von 129 Blättern mit alttestamentlichem Text (LXX), 43 davon überlässt man ihm und vereinbart, die restlichen 86 im Kloster aufzubewahren. Diese 43 Blätter bringt Tischendorf mit nach Leipzig, wo sie bis heute in der Bibliotheca Albertina liegen; Tischendorf veröffentlicht sie 1846 im Faksimiledruck unter dem Titel *Codex Friderico-Augustanus*.[22]

Dass diese ersten Blätter Teil einer außerordentlichen, in dieser Form bis-

21 Constantin Tischendorf, *Wann wurden unsere Evangelien verfaßt? In allgemeinfaßlicher Weise beantwortet* (Zwickau/Leipzig: J. C. Hinrichs, [3]1865), 11.

22 Constantin Tischendorf, *Codex Friderico-Augustanus sive fragmenta Veteris Testamenti …* (Leipzig: Franz Koehler, 1846).

lang unbekannten »Vollbibel« sind, ist leicht zu erkennen. Tischendorf hat inzwischen ausreichend viele Handschriften gesehen, um die Sensation zu verspüren. Zugleich nimmt er hellsichtig und leidenschaftlich wahr, in welcher Gefahr sich diese Blätter befinden. Deshalb verfolgt er eine doppelte Strategie: Einerseits betreibt er unverzüglich die Publikation der mit nach Leipzig gebrachten 43 Blätter; andererseits behält er den Fundort für sich, um zu gegebener Zeit mit entsprechenden Mitteln wieder zurückzukehren. Lediglich in einem Brief an seinen Bruder Julius vom 15. Juni 1844 deckt er den Fundort im Vertrauen auf. Ansonsten aber belässt er es im Vorwort der Edition bei der Bemerkung, die Blätter entstammten »einem Kloster im Morgenlande«. Immerhin sind an dieser ersten Teiledition schon viele Eigenheiten der ganzen Handschrift zu erkennen: ihr besonderes Layout, die Hände der Schreiber und Korrektoren, die Kolophone, ihr vermutlicher Umfang, die sorgfältige Anlage und vieles mehr.

Die Erfolge dieser ersten vierjährigen Reise begründen die akademische Karriere des jungen Privatdozenten. Nach der Rückkehr erhält er zunächst eine feste Position an der Leipziger Universität, der er sein Leben lang die Treue hält. Er gründet einen Hausstand und stürzt sich in die Arbeit, bei der es zunächst die zahlreichen mitgebrachten Funde und Kollationen auszuwerten gilt. Im Laufe der folgenden Jahre wächst auch die Familie; schließlich erfreut sich das Ehepaar Tischendorf einer achtköpfigen Kinderschar.

Die seinerzeit zurückgelassenen 86 Blätter lassen Tischendorf jedoch keine Ruhe. Deshalb unternimmt er im Januar 1853 eine zweite Reise zum Sinai – diesmal zielgerichtet und mit finanzieller Unterstützung durch die sächsische Regierung. Doch die Reise bleibt erfolglos. Die 86 Blätter sind verschwunden. Ein einziges Relikt findet sich in Gestalt eines Lesezeichens in einem Band mit Heiligenviten. Diese Reise macht immerhin deutlich: Die Gefährdung des Codex ist weder eine fixe Idee Tischendorfs noch eine spätere Schutzbehauptung! Die Handschrift befindet sich um die Mitte des 19. Jahrhunderts herum bereits in Auflösung. Ohne Einband entbehrt sie eines äußeren Schutzes. Der erste Teil ist zur Sekundärverwertung im Sammelkorb gelandet. Die Randpartien gehen zuerst verloren; bis heute fehlen Anfang und Schluss; der Block in der Mitte hingegen bleibt am längsten erhalten. Später tauchen weitere Fragmente auf, die zu Bucheinbänden geworden sind – zuletzt noch einmal 2009 nach Abschluss des Digitalisierungsprojektes.[23] Ein vergleichbares Beispiel stellen jene Fragmente dar, die Rendel Harris 1890 publiziert hat:[24] Auch sie bewahren die Überreste von einst umfangreichen Codices auf, die eine sekundäre Weiterverarbeitung erkennen lassen.

Tischendorf kann sich mit dem Misserfolg von 1853 nicht zufriedengeben. Unverzüglich beginnt er mit den Planungen für einen dritten Anlauf, den er nun mit besonderer Umsicht vorbereitet. Über die guten Kontakte, die zwischen der sächsischen und der russischen Regierung bestehen – im konkreten Falle über den sächsischen Prinzenerzieher am Hof in St. Petersburg Freiherrn August Theodor von Grimm (1805–1878) – wird das Projekt angebahnt. Tischendorf erlangt das Wohlwollen des Großfürsten Konstantin und die Unterstützung des Ministers für Volksbildung Avraam Norov (1795–1869).[25] Gegen den Einspruch des Heiligen Synod wird der sächsische Protestant daraufhin von der russischen Regierung beauftragt, im Orient nach Handschriften des Bibeltextes zu forschen. Er reist im Auftrag von Zar Alexander II., des mächtigsten Schutzherrn der bedrängten Christenheit im Osmanischen Reich. Nicht nur der hohe Protektor dieser dritten Reise, sondern auch die großzügige finanzielle Ausstattung (8.000 Rubel) öffnen Tischendorf neue Türen. Die Mittel sind sowohl zur Deckung der Reisekosten als ausdrücklich auch für den Ankauf von Handschriften bestimmt. Damit setzen sich Kaiser und Ministerium erneut über einen Beschluss des Heiligen Synod hinweg, der fordert, Handschriften lediglich zu kopieren und an ihren angestammten Orten zu belassen.[26]

Die denkwürdige Geschichte vom Abend des 4. Februar 1859 ist oft

23 James Taylor, »Fragments from world's oldest Bible found hidden in Egyptian monastery,« *The Independent* (2. September 2009), http://license.icopyright.net/user/viewFreeUse.act? fuid=NDc5NJM.

24 Rendel Harris, *Biblical Fragments from Mount Sinai* (London: Clay, 1890).

25 Christfried Böttrich, »Constantin Tischendorf und Avraam Norov. Protestantisch-orthodoxe Bemühungen um den Bibeltext in der Mitte des 19. Jhs.,« in *Logos im Dialogos. Auf der Suche nach der Orthodoxie. Gedenkschrift für Hermann Goltz (1946–2010)*, ed. Anna Briskina-Müller, Armenuhi Drost-Abgarjan, und Axel Meißner (Forum Orthodoxe Theologie 11; Berlin: Lit 2011), 91–111.

26 Darüber sind wir informiert durch ein Dokument des Ministeriums für Volksbildung in St. Petersburg: Christfried Böttrich, Sabine Fahl und Dieter Fahl, »Das Dossier des russischen Ministers Golovnin von 1862 zur Frage des Codex Sinaiticus,« *Scriptorium* 63/2 (2009): 288–326.

nacherzählt worden.[27] Nachdem auch diese Reise ohne Erfolg zu enden droht, tauchen am letzten Abend die gesuchten Blätter überraschend doch noch auf – in einem Nebenraum der Zelle des Oikonomos und mit einem Umfang von mittlerweile 346 Blättern (also die 1844 zurückgelassenen 86 und weitere 260). Um die Überraschung vollständig zu machen, enthält der Stapel Blätter nicht nur das gesamte Neue Testament, sondern auch den Barnabasbrief und einen Teil des Hirten des Hermas. Tischendorf schreibt noch in dieser Nacht den gesamten Barnabasbrief ab. Am nächsten Morgen versucht er, den Codex käuflich zu erwerben. Das wird jedoch abgelehnt. Tischendorf reist nach Kairo, und die Blätter bleiben erneut zurück.

Mit diesem 4. Februar 1859 aber beginnt nun ein ganz neues Kapitel, das von einer rastlosen Publikationstätigkeit sowie von zahlreichen Verwicklungen auf der politischen Ebene bestimmt ist. Tischendorf fasst das 1000jährige Thronjubiläum der russischen Monarchie im Jahre 1862 als Termin ins Auge, um den Faksimiledruck des *Codex Sinaiticus* seinem hohen Gönner publikumswirksam zu Füßen legen zu können. Gleichzeitig sorgt er sich um die künftige Zugänglichkeit und Sicherung der Blätter und schlägt deshalb den Vätern vom Sinai vor, den Codex in Form einer Schenkung an Zar Alexander II. zu überreichen.

PUBLIKATIONSWEGE UND EIGENTUMSRECHTE

Das ehrgeizige Publikationsvorhaben gelingt. Zum Zwecke der ständigen Kontrolle erhält Tischendorf die kostbaren Blätter leihweise ausgehändigt und begibt sich sofort an die Arbeit. Der Faksimiledruck, der 1862 erscheint, stellt eine Meisterleistung dar. Tischendorf erweist sich dabei erneut als Pragmatiker und Organisator. Da St. Petersburg als Verlagsort vereinbart ist, der Druck jedoch bei Giesecke & Devrient in Leipzig erfolgt, reist Tischendorf mehrfach zur Berichterstattung zwischen Leipzig und St. Petersburg hin und

27 Ihre Urfassung (oder »vulgate version«, wie sie Ihor Ševčenko genannt hat), findet sich in: Constantin Tischendorf, *Die Sinaibibel. Ihre Entdeckung, Herausgabe und Erwerbung* (Leipzig: Giesecke & Devrient, 1871).

her. Um den Titel wird noch einige Zeit lang gerungen. Schließlich lautet er: »Bibliorum Codex Sinaiticus Petropolitanus«.[28]

Tischendorf erklimmt mit dieser Arbeit den Gipfel internationalen Ruhmes. Sein Porträt ziert die Titelblätter führender Zeitschriften. Die Codex-Geschichte ist in allen Medien präsent. Ihr Protagonist wird mit Orden dekoriert und mit Ehrendoktorwürden ausgezeichnet.[29] Er bewegt sich auf diesem Parkett mit Geschick und nutzt seine Popularität für die Anbahnung weiterer Forschungsvorhaben aus. Zugleich beginnen jedoch auch die diplomatischen Verwicklungen. Dass Tischendorf den Codex nur auf Leihbasis mit sich führt, wird durch eine Quittung dokumentiert. Ihr Text lässt keinen Zweifel daran, dass die 346 Blätter weiterhin das Eigentum des Klosters sind.[30] Das ist insofern von Belang, als das von Tischendorf angeregte Schenkungsprojekt stagniert. Der Gedanke wird von den Vätern zunächst positiv aufgenommen, denn die Schenkung bietet ihnen eine gute Möglichkeit, den Zaren als ihren Schirmherren zu ehren und noch fester an das Kloster zu binden. Leider fällt das Projekt jedoch in eine Phase, in der gerade ein neuer Erzbischof zu wählen ist. Dieses Interim dauert von 1859 bis 1869 an und gerät, je länger je mehr, zu einer Zeit heftiger Richtungskämpfe. In diesen Turbulenzen droht die Schenkung unterzugehen. Tischendorf, mit seinen paläographischen Arbeiten überlastet, vermag die Entwicklungen vor Ort schon längst nicht mehr zu durchschauen. Erst als 1869 mit Kallistratos (1867–1885) ein neuer, nun auch von allen Seiten akzeptierter Kandidat als Erzbischof installiert wird, ist der Weg frei. Nun wird das Schenkungsprojekt erneut aufgenommen und mit Hilfe des russischen Gesandten in Konstantinopel, des Grafen Nikolaij

28 *Bibliorum Codex Sinaiticus Petropolitanus. Auspiciis augustissimis imperatoris Alexandri II.* …, Bde. I-IV, I: Prolegomena. Commentarius. Tabulae, II: Veteris Testamenti pars prior, 87 Blatt, III: Veteris Testamenti pars posterior, 112 Blatt, IV: Novum Testamentum cum Barnaba et Pastore, 148 Blatt (Petropoli: Giesecke und Devrient, 1862; Nachdr. Hildesheim: Georg Olms, 1969).

29 1869 erhält Tischendorf von der russischen Regierung den erblichen Adel verliehen, den die sächsische Regierung bestätigt; seither trägt sein Name den Zusatz »von« Tischendorf.

30 Sie wurde zuerst publiziert von Ihor Ševčenko, »New Documents on Constantine Tischendorf and the Codex Sinaiticus,« *Scriptorium* 18 (1964): 55–80; vgl. auch Böttrich, *Jahrhundertfund*, 139–148.

Pavlovič Ignatiev (1864–1876), auf relativ geräuschlose Weise zum Abschluss gebracht.[31]

Die Schenkungsdokumente, die lange Zeit verschollen waren und vom Kloster in Abrede gestellt wurden, sind 2007 in Moskau wieder aufgetaucht. Sie liegen heute publiziert vor und lassen keinen Zweifel mehr an der Rechtmäßigkeit des Vorganges zu.[32] Unter anderem findet sich in der Schenkungsurkunde der folgende Satz:

> »Nun aber erklären, bestätigen und beglaubigen wir, Erzbischof Kallistratos vom Sinai und die bei uns versammelte heilige Synaxis der Väter, der hiesigen und der Sinaitischen Eremiten, von neuem mit dem vorliegenden Dokument die Schenkung der Sinaitischen Handschrift des Alten und Neuen Testamentes an Seine Kaiserliche Hoheit, welche Handschrift infolge dessen in Deren vollständigen Besitz übergeht und als unanfechtbares, unbezweifelbares Eigentum Seiner Kaiserlichen Hoheit gilt.«[33]

Das Dokument wird mit dem Siegel des Erzbischofs sowie den Unterschriften der Funktionsträger beider Konvente beglaubigt. Der Gabe folgt umgehend eine Gegengabe von 9.000 Rubeln. Auch sie ist dokumentiert. Tischendorf ist also definitiv kein Dieb, wie immer wieder behauptet worden ist. Allerdings findet die Schenkung unter Rahmenbedingungen statt, die den Vätern vom Sinai wenig Spielraum für ihre Entscheidungen lässt. Sie befinden sich nicht eben gerade in der Situation, aus freien Stücken generös zu sein. Das Wohlwollen und die finanzielle Unterstützung der russischen Regierung hingegen sind für sie am Ende des Erzbischöflichen Interims eine Überlebens-

31 Darüber gibt ein umfangreicher Briefwechsel Auskunft: Aleksej A. Dmitrievskij, *Graf Nikolaj P. Ignat'ev, kak cerkovno-političeskij dejatel na pravoslavnom vostoke. (Po neizdannym pismam ego k načalniku Rus. Duchovnoj missii v Ierusalime o. archim. Antoninu Kapustinu)*, (St. Petersburg, 1909).

32 Anna V. Zacharova, »Istorija Priobretenija Sinajskoj Biblii Rossiej v Svete Novych Dokumentov iz Rossijskich Archivov,« *Montfaucon. Études de paléographie, de codicologie et de diplomatique* 1 (2007): 209–267.

33 Die ganze Urkunde ist übersetzt bei: Christfried Böttrich, »Neue Dokumente zur Geschichte des Codex Sinaiticus,« *Early Christianity* 1/4 (2010): 605–613; ebenso Böttrich, *Jahrhundertfund*, 121–135.

frage. So bleibt ein Schatten auf dem Schenkungsprojekt liegen, der sich auch während der folgenden 150 Jahre nicht mehr aufhellt.

Zwischen 1862 und 1869 befindet sich der Codex in St. Petersburg. Er ist zwar politisch korrekt gleich einem diplomatischen Gast im Außenministerium untergebracht. Doch eigentlich hätte der Text der Quittung von 1859 Tischendorf verpflichtet, den Codex unmittelbar nach Abschluss der Publikation auf den Sinai zurückzubringen. Dass der Codex in St. Petersburg bleibt, geschieht im Vorgriff auf die erwartete Schenkung und rückt Tischendorf als Überbringer in ein Zwielicht, aus dem er erst sieben Jahre später befreit wird. Dann zieht der Codex, nun rechtmäßiges Eigentum der russischen Regierung, in die Publičnaja Biblioteka zu St. Petersburg um und erhält dort einen Ehrenplatz unmittelbar neben dem berühmten Evangelienbuch von Ostromir.

ANSPRÜCHE AUF DEN RUHM DER ENTDECKUNG

Während der Publikationsphase kommt es plötzlich zu einem unerwarteten Konflikt. Noch im Entdeckungsjahr 1859 meldet sich der russische Archimandrit Porfirij Uspenskij (1804–1885) zu Wort und erhebt Anspruch auf die Entdeckung des *Codex Sinaiticus*. Uspenskij ist eine interessante und ein wenig schillernde Figur. Er gilt als einer der wichtigsten Orientexperten der russischen Kirche. Palästina hat er mehrfach bereist und beschrieben. In Jerusalem regt er die Gründung einer russischen Mission an. Im Katharinen-Kloster hält sich Uspenskij in den Jahren 1845 und 1850 auf – also genau zwischen Tischendorfs erstem und zweitem Besuch. Im Jahre 1856 veröffentlicht er eine Reisebeschreibung, in der er auch von seinen Studien in der Bibliothek des Klosters berichtet.[34] Darin beschreibt er offensichtlich auch den *Codex Sinaiticus*. Jene 346 Blätter, die Tischendorf noch sucht, hält er bereits 1850 in der Hand. In seiner Beschreibung verkennt er jedoch sowohl das Alter als auch die textgeschichtliche Bedeutung dieser einzigartigen Handschrift. Jedenfalls käme niemand auf den Gedanken, aufgrund dieser

34 Porfirij Uspenskij, *Pervoe Putešestvie v Sinajskij Monastyr' v 1845 gody* (St. Petersburg: Akad. nauk, 1856); V*toroe Putešestvie Archimandrita Porfirija Uspenskago v Sinajskij Monastyr' v 1850 gody* (St. Petersburg: Akad. nauk, 1856).

Notizen weiter nachzuforschen.[35] Kennt Tischendorf diese Beschreibung von 1856, als er drei Jahre später aufbricht? Hat ihm vielleicht Avraam Norov die fragliche Passage während der Reisevorbereitungen übersetzt?[36] Tischendorf jedenfalls schreibt, er habe erst nach seiner Rückkehr 1859 von der Beschreibung Uspenskijs Kenntnis erhalten.

In der Folge entwickelt sich ein bizarrer Streit. Uspenskij behauptet, der wahre Entdecker des Codex zu sein; Tischendorf stehe nur das Verdienst zu, die Handschrift publiziert zu haben. Gleichzeitig aber unterstellt er dem Codex einen häretischen Charakter und versucht, die Drucklegung unter den Auspicien des Kaisers zu verhindern.[37] Hier bricht offenbar ein alter Konflikt auf, denn eigentlich hätte der Heilige Synod lieber Uspenskij mit der kaiserlichen Mission betraut gesehen als den sächsischen Protestanten. In St. Petersburg läuft Uspenskij jedoch ins Leere. Nicht Tischendorf selbst, sondern der gelehrte Norov widerlegt Uspenskijs Häresievorwürfe mit einer kleinen Broschüre.[38] Uspenskij beklagt sich daraufhin bei der Kaiserin. Schließlich kommt es auch zu einer Begegnung mit Tischendorf, zu der Uspenskij seine eigenen Funde mitbringt. Aber Freunde werden die beiden Männer nicht mehr.

RETTUNG DES CODEX – ZWEITER AKT

In St. Petersburg liegt der Codex zunächst gut und sicher. Er wird sachgemäß aufbewahrt und ist für die Gelehrtenwelt bequem erreichbar. Doch mit dem Revolutionsjahr 1917 ziehen auch für die »nördliche Residenz« schwere Zei-

35 Eine ähnliche Situation gibt es knapp 100 Jahre früher: 1761 besucht der italienische Naturforscher Vitaliano Donati (1717–1762) das Kloster und beschreibt einige der dortigen Handschriften; eine seiner Beschreibungen könnte ebenfalls schon den *Codex Sinaiticus* vor Augen haben. Vgl. dazu Böttrich, *Jahrhundertfund*, 33–35.

36 Beide treffen sich im August 1857 in Leipzig, wohin Norov während seines Kuraufenthaltes im böhmischen Franzensbad einen Abstecher macht, und verbringen miteinander einen ganzen Tag im Hotel Bavière.

37 Porfirij Uspenskij, *Mnenie o Sinaijskoj rukopisi, soderžaščej v sebe Vetchij Zavet nepolnyj, i ves' Novij Zavet s poslaniem svjatago apostola Varnavy i knigoju Ermy* (St. Petersburg: Akad. nauk, 1862).

38 Avram S. Norov, *Zaščita sinajskoj rukopisi biblii ot' napadenij o. Archimandrita Porfirija Uspenskago* (St. Petersburg: Akad. nauk, 1863).

ten herauf. Die Wertschätzung alter Bibelhandschriften nimmt drastisch ab. Der Bedarf an Devisen hingegen steigt. Anfang der 1920er Jahre beginnen die Bolschewiki, im großen Stile Kunstschätze aus ihren Museen und Sammlungen nach Westeuropa zu verkaufen.[39] Dabei gerät auch der *Codex Sinaiticus* ins Visier der Händler. Während des Jahres 1933 wird der Deal eingefädelt.[40] Im Dezember trifft der Codex in London ein und findet eine neue Heimstätte in dem altehrwürdigen British Museum.[41] Insgesamt 100.000 Pfund bringt die britische Regierung dafür auf, wovon die Hälfte durch Spenden aus der Bevölkerung abgedeckt wird. Später wechselt der Codex in die British Library über, wo er bis heute in der John Ritblat Gallery aufbewahrt wird.

In dieser Situation meldet sich am 29. Januar 1934 auch das Kloster noch einmal zu Wort. Erzbischof Porphyrios vom Sinai nimmt den Verkauf zum Anlass, erneut das Eigentumsrecht an dem Codex zu reklamieren. Seit den 1870er Jahren vertritt man im Kloster die Auffassung, dass der Codex nur entliehen sei und weist dafür die »Quittung« von 1859 vor. Von Anfang an gab es wohl nicht nur Befürworter des Schenkungsprojektes. Diese Opposition setzt sich nach dem Tod von Erzbischof Kallistratos durch. Sie prangert sowohl den Transfer nach St. Petersburg als auch den neuerlichen Verkauf nach London an.

Der Ankauf des *Codex Sinaiticus* durch das Britische Museum gestattet nun erstmals seit längerer Zeit wieder einen ungehinderten Zugang zu der alten Handschrift. Sie wird gründlich untersucht und am Ende neu gebunden. Inzwischen gibt es für alle kodikologischen Fragen auch deutlich verbesserte Analysemethoden. Die beiden Handschriftenexperten Herbert J. M. Milne und Theodore C. Skeat fassen 1938 diese Untersuchungen schriftlich zusammen. Ihr Buch ist das Beste, was man bis dahin über den Codex lesen kann.[42]

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39 Maria D. Moričeva, »… Vydat' v rasporjaženie v/o ›Antiquariat‹ inkunabuly i rukopisy …«, in *Rossijskaja Nacional'naja Biblioteka: Stranicy Istorii. Sbornik Statej* (St. Petersburg, 2001), 98–115.

40 Das entscheidende Protokoll des ZK der Kommunistischen Partei datiert vom 5. Dezember 1933 und ist von I. Stalin persönlich unterzeichnet.

41 Vgl. zu dem ganzen Vorgang Maurice L. Ettinghausen, *Rare Books and Royal Collectors. Memoirs of an Antiquarian Bookseller* (New York: Simon and Schuster, 1966), 169–183 Chapter XIII; Böttrich, *Jahrhundertfund*, 155–167.

42 Herbert J. M. Milne und Theodore C. Skeat, *Scribes and Correctors of the Codex Sinaiticus* (London: British Museum, 1938).

NACHSPIEL UND NEUSTART

Die (Wieder-)Entdeckung des *Codex Sinaiticus* erlebt in der zweiten Hälfte des 20. Jahrhunderts noch einmal eine unerwartete Fortsetzung. Bei Bauarbeiten an der Nordmauer des Katharinen-Klosters, unterhalb der St.-Georgs-Kapelle, tritt am 26. Mai 1975 ein verschütteter Raum zutage, der sich als alter Aufbewahrungsort schadhaft gewordener Manuskripte und Bücher entpuppt. Unter den vielfältigen Materialien finden sich überraschender Weise auch noch einmal weitere Blätter des *Codex Sinaiticus*, die jedoch nur vereinzelt vorliegen und zudem stark beschädigt sind.[43] Alles in allem handelt es sich dabei um circa 18 Blätter. Doch diesmal bewahren die Väter vom Sinai Stillschweigen. Erst drei Jahre später, im Mai 1978, sickern erste Informationen über den aufsehenerregenden Fund durch. Im Oktober 1981 gibt Erzbischof Damianos auf dem Byzantinistenkongress in Wien den Fund öffentlich bekannt.[44] Die *editio princeps* der Blätter erfolgt nicht mehr wie einst als Faksimiledruck, sondern sofort online im Zuge des 2005 beginnenden großen Digitalisierungsprojektes.

Mit der Auswertung und Bearbeitung der neuen Funde sind zunächst griechische Gelehrte befasst. Die Klosterbibliothek ist inzwischen mit moderner Technik ausgestattet und personell mit bestem Knowhow versehen. Vater Justin, der Bibliothekar, versteht es auf souveräne Weise, in seiner Person die alte asketische Spiritualität vom Sinai mit der Handhabung der notwendigen Digitalisierungstechnik zu verbinden.

KOOPERATION IM DIGITALEN ZEITALTER

Der *Codex Sinaiticus* wird heute an vier verschiedenen Standorten aufbewahrt: in Leipzig mit 43 Blättern von 1844, in London mit 346 Blättern von 1859, in St. Petersburg mit circa acht Fragmenten aus der Sammlung

43 James H. Charlesworth, *The New Discoveries in St. Catherine's Monastery. A Preliminary Report on the Manuscripts. With a Foreword by D. N. Freedman* (Winona Lake: American Schools of Oriental Research, 1981).

44 Damianos, Archbishop of Sinai, »Eisēgēsis epi tōn neōsti heuretentōn palaiōn cheirographōn en tē hiera monē sina,« in *XVI. Internationaler Byzantinistenkongress Wien, 4–9. Oktober 1981. Akten* II/4 (JÖB 32/4; Wien: Austrian Academy of Science Press, 1982), 105–116.

Porfirij Uspenskijs, im Katharinen-Kloster auf dem Sinai mit 18 Blättern aus den neuen Funden von 1975. Eine physische Wiedervereinigung dieses Bestandes stieße bei allen beteiligten Institutionen nach wie vor auf erhebliche Schwierigkeiten. Einer virtuellen Wiedervereinigung aber steht im digitalen Zeitalter nichts mehr im Wege. Diese Erkenntnis führt 2005 (nach einer längeren Vorbereitungsphase) zu jener denkwürdigen Partnerschaftsvereinbarung, deren Gegenstand die Digitalisierung aller noch erhaltenen Bestandteile des *Codex Sinaiticus* ist. Damit wird ein völlig neues Kapitel nicht nur in der Geschichte dieser einen Handschrift, sondern auch in der Erschließung alter, zerstreut aufbewahrter und insgesamt schwer zugänglicher Textbestände überhaupt aufgeschlagen.

Die Kooperationspartner vereinbaren fünf ehrgeizige Ziele: 1. Konservierung der Pergamentblätter nach gemeinsamen Standards, 2. Digitalisierung aller Bestandteile in einem gemeinsamen Format, 3. Transkription des Textes und wissenschaftliche Kommentierung, 4. Publikation des Codex im Internet, 5. Erforschung der Codexgeschichte. Alle diese fünf Ziele sind heute erreicht. Als Anfang Juli 2009 die Konferenz zum Abschluss des Projektes in der British Library in London stattfindet,[45] zieht der Codex erneut ein großes Medieninteresse auf sich: In der ersten Woche nach ihrer Freischaltung am 6. Juli 2009 registriert die Website www.codex-sinaiticus.net bereits 100 Millionen Besucher!

Die sechs Jahre gemeinsamer Arbeit erweisen sich für die beteiligten Projektpartner als ein wichtiger Lernprozess. Erzbischof Damianos hält zu Beginn der Londoner Konferenz einen Vortrag, in dem er die Eigentumsfrage noch offen lässt – ein Statement, das Kooperation anbietet und gleichzeitig Verständnis und Respekt für das Kloster und seine Dilemmata im 19. Jahrhundert einfordert. Er selbst spricht vor allem über die neuen Funde von 1975, über den Hirten des Hermas und über das spirituelle, asketische Leben auf dem Sinai. Was Gelehrte wie Tischendorf im 19. Jahrhundert nur mühsam begreifen konnten, ist auch heute noch längst nicht im allgemeinen Bewusstsein angekommen: Klöster sind keine Akademien, und Handschriften wie der *Codex Sinaiticus* sind mehr als nur Studienobjekte eines modernen

45 Deren Beiträge sind dokumentiert in: Scot McKendrick, David Parker, Amy Myshrall, und Cillian O'Hogan, hg., *Codex Sinaiticus. New Perspectives on the Ancient Biblical Manuscript* (London: The British Library/Hendrickson, 2015).

Wissenschaftsbetriebes! Die Zustimmung des Klosters zur Beteiligung an dem Projekt erfolgt nur deshalb, weil die Digitalisierung einen ganz neuen Raum zur Begegnung anbietet. Die Publikation findet statt, ohne dafür auch nur ein einziges Blatt bewegen zu müssen. Das Kloster kann die neuen Funde weltweit zur Verfügung stellen und sie zugleich an ihrem angestammten Ort belassen. Es liegt auf der Hand, dass damit ein Modell auch für die Aufarbeitung all seiner anderen Schätze gefunden ist. Erzbischof Damianos verweist in seinem Vortrag auf den Geist, der hinter dem Wort verborgen ist – und verbindet mit der digitalen Edition die Hoffnung, eine neue Quelle spirituellen Lebens in unserer modernen Welt erschließen zu können.

Zur konkreten Textdarstellung des Codex in seinem Online-Format möchte ich abschließend noch vier Beobachtungen formulieren:

1. Nachdem die Handschrift gut 150 Jahre der nur schwer zu erreichende Gegenstand vieler verschiedener Interessen war, ist sie heute für jede Studentin und jeden Studenten zugänglich, rund um die Uhr und an jedem Ort dieser Welt, an dem es einen Internetzugang gibt - und das in deutlich besserer Qualität, als es im Original je möglich war.
2. Die Bildschirmdarstellung des Codex bietet Navigations- und Verknüpfungsmöglichkeiten, die dem Textstudium völlig neue Dimensionen eröffnet und Wahrnehmungen anbietet, die es so vorher noch nicht gab.
3. Was es bedeutet, dass dieses wertvolle Kulturgut ein Besitz der gesamten Menschheit ist, lässt sich jetzt erst in einem globalen Sinne wirklich begreifen.
4. Die Schönheit der alten Majuskelschrift offenbart völlig neue Seiten, wenn man tief in den Text hinein zoomt und dabei etwas von jener spirituellen Kraft des Wortes zu erahnen beginnt, von der die Schreiber ergriffen waren und an die zu erinnern Erzbischof Damianos nicht müde wird.

Die kodikologischen Fragen, die sich mit der digitalen Erfassung der Handschrift noch einmal neu stellen, sind inzwischen umfassend von David Parker, *spiritus rector* des ganzen Unternehmens, und seinem Team in Birmingham aufgenommen worden. Was 1936 das Buch von Milne und Skeat war, ist 2010/12 Parkers Studie geworden, deren detaillierte Informationen zum

Codex auf dem Fundament der jüngsten, am digitalen Befund gewonnenen Forschungen stehen.[46]

Inzwischen ist die Website www.codex-sinaiticus.net schon zehn Jahre online. Ihre Existenz beginnt, Selbstverständlichkeit zu gewinnen. Was ihre Benutzung für das Alltagsgeschäft der exegetischen Arbeit bedeutet, bleibt indessen noch abzuwarten. Auf jeden Fall bietet sie weit mehr als nur gediegene Ansichten eines Artefaktes, mit deren Hilfe man im Proseminar die wundersame Welt antiker Schreibkunst vorführen kann. Vielmehr lädt der Codex im Netz dazu ein, die formative Phase der neutestamentlichen Textentstehung gleichsam im Vollzug mitzuerleben und damit wieder einen Schritt hinter die kritischen Editionen der Gegenwart zurückzutreten. Es ist der »lebendige Text« des Neuen Testaments, der uns hier in bislang unerreichter Unmittelbarkeit begegnet.

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46 David C. Parker, Codex Sinaiticus. *The Story of the World's Oldest Bible* (London: The British Library/Hendrickson, 2010); dass. dts.: *Codex Sinaiticus. Geschichte der ältesten Bibel der Welt*, übers. von T. Gabel (Darmstadt: WBG, 2012).

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BEWAHREN UND ERINNERN – UND DIE FRAGE NACH DER VERANTWORTUNG. DIE DIGITALISIERUNG DES CODEX SINAITICUS IN ETHISCH-THEOLOGISCHER REFLEXION[1]

GOTLIND ULSHÖFER

DIE BEDEUTUNG DER DIGITALISIERUNG DES CODEX SINAITICUS UND DIE PERSPEKTIVE DER VERANTWORTUNG

Es steht außer Frage, dass die Digitalisierung des Codex Sinaiticus von grundlegender Bedeutung für Wissenschaft und Gesellschaft ist. Mit der Digitalisierung dieser Handschrift wurde ein direkter virtueller Zugang zum Manuskript ermöglicht und dadurch ein Beitrag zur Bewahrung der Handschrift und auch zur Erinnerungskultur nicht allein christlicher Traditionen geleistet. Dabei war der Codex Sinaiticus auch schon vor seiner Digitalisierung für das Christentum und für die Geschichte der antiken Welt und damit sowohl theologisch als auch historisch ein wichtiges Dokument. Dies liegt an drei Aspekten, die mit ihm verbunden sind:

Erstens enthält der Codex Sinaiticus die älteste Gesamtversion des Neuen Testaments und weitere Schriften früher christlicher Autoren wie den Brief des Barnabas und die Didache.[2] Er ist also relativ umfassend, und sein materieller Zustand ist immer noch gut. Der Codex ist ein wichtiger Zeuge für die Textüberlieferung – und somit auch für die kollektive Erinnerung.

Zweitens sind seine Entstehung und seine Geschichte höchst bemerkens-

1 Der Text ist eine überarbeitete und übersetzte Fassung meines Artikels: »Changes in Remembrance? The Digitalization of Biblical Texts under Theological and Ethical Considerations«, der erschienen ist in: *Cursor_Zeitschrift Für Explorative Theologie*. Retrieved from https://cursor.pubpub.org/pub/ulshoeferremembrance (Zugriff: 19. 10. 2020) Lizenz unter CC-BY 4.0 Standard. Ich danke den Herausgeber*innen von Cursor für die Möglichkeit zur Wiederaufnahme.

2 David Parker, »Ancient Scribes and Modern Encodings: The Digital Codex Sinaiticus,« in *Text Comparison and Digital Creativity, The Production of Presence and Meaning in Digital Scholarship,* hg. Wido van Peursen, Ernst D. Thoutenhoofd, und Adriaan van der Weel (Leiden und Boston: Brill 2010), 173–188.

wert,[3] denn es handelt sich um eine neue Form der Verschriftlichung – den Codex. Die Beschreibungen der Vorgehensweise bei der Digitalisierung des Codex Sinaiticus machen darauf aufmerksam, dass es bei dem Umgang mit dem Codex damals wie heute ähnliche Problematiken gab, die im Vorfeld der Bearbeitung geklärt werden mussten. Da die Form nicht mehr die Schriftrolle war, sondern der Codex, gab es auch damals, im wahrscheinlich 4. Jahrhundert, Diskussionen um grundlegende Fragen hinsichtlich dieser neuen Veröffentlichungsvariante. Diese wurden vermutlich auch in einem Team entwickelt, das sich neue Standards, Arten der Textgestaltung und Arbeitsaufteilungen überlegen musste, um zur Form des Codex zu gelangen.[4] Die Erinnerungsgeschichte des Codex umfasst dazuhin die Historie, wie dieser vom Katharinenkloster, das heißt von seinem Ort der Auffindung durch Konstantin von Tischendorf Mitte des 19. Jahrhunderts, in die Bibliotheken nach Leipzig, nach St. Petersburg und nach London kam. Diese Geschichte ist insofern bemerkenswert, weil der Codex durch die Jahrhunderte verbunden ist mit Fragen nach der Zugänglichkeit zu ihm sowie des Bewahrens sowohl des Textes als auch des Codexes insgesamt.

Und drittens geschieht mit der Digitalisierung des Codex etwas, das ihn in seine ursprüngliche Fassung bringt, denn die Digitalisierung eröffnet die Möglichkeit, dass die verschiedenen Blätter des Codex – jenseits der Bibliotheken, in denen sie sich befinden – virtuell wieder zusammengefügt werden und den Corpus bilden, den sie einmal umfassten. Dies führt dazu, dass der Codex Sinaiticus ebenso in seiner digitalisierten Form von grundlegender Relevanz ist. Die Bedeutung dieser Digitalisierung liegt dabei in den grundlegenden technischen Entscheidungen, die für die virtuelle Darstellung vom Codex, von den Übersetzungen und Kommentierungen gefunden werden mussten. So dient der Codex auch als Vorbild für weitere Digitalisierungen und damit für den Umgang mit Überliefertem.

Warum interessiert mich der Codex Sinaiticus als Ethikerin? Mir geht es im Folgenden weder um die Rekonstruktion der Inhalte des Codex Sinaiticus, noch um Fragen der Provenienzforschung, die beim Codex Sinaiticus als geklärt gelten können, oder dem passenden und gerechtfertigten Aufenthaltsort.

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3 Z. B.: Christfried Böttrich, *Der Jahrhundertfund. Entdeckung und Geschichte des Codex Sinaiticus* (Leipzig: Evangelische Verlagsanstalt, 2011).

4 Parker, »Ancient Scribes and Modern Encodings: The Digital Codex Sinaiticus,« 174.

Mir geht es auch nicht so sehr um detaillierte Fragen bei der technischen Umsetzung, welche Normen und Werte sich hier implizit in den Codierungen finden, im Sinne der Critical Coding Studies.[5] Im Blick auf die Geschichte der Digitalisierung des Codex Sinaiticus und bei dem Digitalisat stehen für mich Fragen nach der Verantwortung, die sich aus der herausragenden Stellung des Codex ergeben, im Vordergrund.

Verantwortung ist für mich insofern eine Schlüsselkategorie des Ethischen, weil dadurch ein ganzes Beziehungsgeflecht von Verantwortungsträgern und -trägerinnen und deren Handlungen in den Blick rückt. Verantwortung ist als relationaler Begriff zu verstehen, der aus ethisch-theologischer Perspektive dazuhin Fragen nach Gerechtigkeit, Freiheit und Liebe umfasst.[6] Im Folgenden will ich das Thema Verantwortung auf die Frage nach den Möglichkeiten, Chancen und Grenzen zuspitzen, die Digitalisierungen mit sich bringen, hinsichtlich dessen, was und wie erinnert und bewahrt werden soll. Der Codex Sinaiticus und seine Digitalisierung sollen dabei exemplarisch für die Möglichkeiten stehen, die sich mit Digitalisierung, den Digitalisaten und damit auch den Digital Humanities auftun. Dabei soll unter Digital Humanities Folgendes verstanden werden:

> »Digital Humanities ist ein wichtiges multidisziplinäres Feld, das Forschung an der Schnittstelle zwischen digitalen Technologien und Geisteswissenschaften unternimmt. Es zielt darauf ab, Anwendungen und Modelle zu produzieren, die neue Arten von Forschung ermöglichen, sowohl in den geisteswissenschaftlichen Disziplinen als auch in den Computerwissenschaften und in den mit ihnen verbundenen Technologien. Sie untersucht auch den Einfluss dieser Techniken auf kulturelles Erbe, Institutionen des Erinnerns beziehungsweise Gedächtnisses, Bibliotheken, Archiven und digitaler Kultur.«[7]

5 Benjamin Jörissen und Jan Verständig, »Code, Software und Subjekt. Zur Relevanz der Critical Software Studies für ein nicht-reduktionistisches Verständnis ›digitaler Bildung,‹« in *Das umkämpfte Netz,* hg. Ralf Biermann, und Dan Verständig (Wiesbaden: Springer VS, 2016), 37–50.

6 Gotlind Ulshöfer, *Soziale Verantwortung aus protestantischer Perspektive. Kriterien für eine Ethik der Handlungsräume angesichts der Corporate Social Responsibility-Debatte* (Stuttgart: Kohlhammer, 2015).

7 Eigene Übersetzung, zitiert nach: Claire Clivaz, »Internet Networks and Academic Research: The Example of New Testament Textual Criticism,« in *Digital Humanities in Bibli-*

TEXT – TECHNIK – KONTEXT. WAS UMFASST DIE DIGITALISIERUNG EINES »HEILIGEN TEXTES«?

DER CODEX SINAITICUS ALS »HEILIGER TEXT« UND SEINE EDITIONEN ALS DENKMAL

Beim Codex Sinaiticus handelt es sich um eine Variante eines »heiligen Textes« der Bibel. Dabei soll mit »heiligem Text« nicht »eine Form von ritueller Sakralität« verstanden werden, sondern im Anschluss an Jörg Lauster[8] und darüber hinaus geht es um die »prägende kulturelle Kraft« biblischer Texte. Diese prägende kulturelle, und ich möchte auch hinzufügen: geistige und geistliche Kraft – verbunden mit der Textintention und der Rezeption – lässt Texte zu heiligen Texten werden. Kennzeichen eines »heiligen Textes« ist also, dass dessen prägende Kraft durch Jahrzehnte beziehungsweise Jahrhunderte erhalten bleibt. Dies impliziert auch, dass die Texte weiter tradiert werden. Die Tradierung umfasst deren Gebrauch als Glaubenszeugen und deren wissenschaftliche Bearbeitung, die in Form von Exegese, oder im Hinblick auf die Materialität des Codex und dessen Bewahrung als Artefakt in entsprechenden Editionen stattfindet. Dass letztgenannter Aspekt wichtig ist, machte schon Tischendorf deutlich, als er 1859 angesichts der Edition von 132.000 Zeilen der Handschrift, die er abgeschrieben hatte, anmerkt: »diese Edition [wird] ein unzerstörbares Denkmal für Kirche und Wissenschaft aufrichten. Ich weiß, dass die ganze Christliche Welt, soweit sie davon Kenntnis erhält, diese kostbare Gabe mit dankbarer Freude empfangen wird.«[9]

Wird die Textedition und damit auch der Text als Denkmal verstanden, so zeigt sich darin, dass es um »Erinnerungspflege« und um das Erinnern geht. Dabei soll hier jedoch nicht an Robert Musils Diktum über Denkmäler im städtischen Raum angeknüpft werden, denen er eine Paradoxie nachweist: Er geht davon aus, dass nach der feierlichen Einweihung Denkmäler nicht mehr wahrgenommen werden und so ihre Funktion verlieren. Aleida Ass-

cal, Early Jewish and Early Christian Studies, hg. Claire Clivaz, Andrew Gregory, and David Hamidovič (Leiden und Boston: Brill, 2013), 155–175, 157.

8 Jörg Lauster, *Prinzip und Methode. Die Transformation des protestantischen Schriftprinzips durch die historische Kritik von Schleiermacher bis zur Gegenwart* (Tübingen: Mohr Siebek, 2004).

9 Zitiert nach: Christfried Böttrich, *Der Jahrhundertfund*, 102.

mann wendet dagegen ein: »Musil blendet in seiner Reflexion über Denkmäler die Dimension des kulturellen, politischen und sozialen ›Handelns an Denkmälern‹ völlig aus.«[10] Nimmt man diesen Gedanken auf und bezieht ihn auf Digitalisate wie den Codex Sinaiticus, so kann davon gesprochen werden, dass er ein Denkmal ist, auch in seiner digitalen Form, und damit auch seine Funktion des Erinnerns erfüllt, weil immer wieder mit ihm weitergearbeitet werden kann, gerade auch durch die digitalen Möglichkeiten.

Das Erinnern manifestiert sich dazuhin in vielfältigen Ausdrucksformen – wie in Kommentaren, Textkritik und der Entwicklung neuer Texte. Gleichzeitig wird im Glaubensgeschehen ein Erinnern der Texte mit religiösem Gehalt aktualisiert.

> »Die Erinnerung, die durch die biblische Ausdrucksgestalt der ursprünglichen Transzendenzerfahrung geleistet wird, ist damit ein affektiv besetzter und kulturell geformter Versuch, über den Bruch [also die Erkenntnis, dass Vergangenes vergangen ist] hinweg einen prägenden Bezug zu dieser Transzendenzerfahrung herzustellen«.[11]

Die Textauslegung kann – so Jörg Lauster – als »ein wesentliches Element einer schriftlichen Erinnerungskultur«[12] ausgemacht werden.

Nun stellt sich die Frage, inwiefern sich Erinnerungskulturen und die damit verknüpften Interpretationsformen durch die Digitalisierung ändern. Blickt man auf die Digitalisierung des Codex Sinaiticus, so lässt sich diesbezüglich zunächst darauf hinweisen, dass hierbei technische Geräte eingesetzt werden, welche die Texte sowohl in Abbildung als auch in Formen der Verknüpfung für alle diejenigen, die Zugang zum Internet haben, zugänglich machen. Also lässt sich erstens die Zugänglichkeit als ein wesentliches Merkmal der Veränderung darstellen. Zweitens ermöglichen die Digital Humanities einen neuen Zugang zum digitalisierten Text, weil sie mit Methoden wie beispielsweise der Computerphilologie neue Bezüge innerhalb des Textes und mit anderen Texten darstellen können und es so zu noch nicht bekannten Ergebnissen kommen kann beziehungsweise auch in chronologischer Weise

10 Aleida Assmann, *Formen des Vergessens* (Bonn: Wallstein, 2018), 73.

11 Lauster, *Prinzip und Methode,* 458.

12 Ibid, 461.

Bezüge hergestellt werden können. Drittens stellt die Visualisierung der Digitalisate eine neue Zugangsweise dar, weil sie jenseits des originalen Artefakts das Objekt aus unterschiedlichen Perspektiven und unter verschiedenen analytischen Ebenen für die Betrachtenden erschließen kann.

DIE DIGITALISIERUNG DES CODEX SINAITICUS ALS BEISPIEL FÜR DAS VERHÄLTNIS VON THEOLOGIE UND TECHNIK – UND DER GEWINN AN FREIHEIT UND SELBSTVERSTÄNDNIS

Aus theologischer Perspektive kann die Digitalisierung des Codex Sinaiticus auch als Beispiel interpretiert werden, wie sich Theologie und Technik zueinander verhalten können. Die zunehmende Technisierung des Lebens ist sowohl in der Philosophie als auch in der Theologie oft als Kulturverfall gedeutet worden.[13] Blickt man jedoch die Entwicklungen der Digitalisierung an, soll hier mit dem Philosophen Luciano Floridi behauptet werden, dass wir in einer »Infosphäre«[14] leben. Gerade digitale Technologien befinden sich inzwischen überall. Mit Infosphäre bezeichnet Floridi den gesellschaftlichen Zustand, dass eine Trennung von Online-Sein und Offline-Sein nicht mehr deutlich zu machen ist. Informationen sind das prägende Element für ihn – online und offline. Es geht jedoch nicht um eine Verfallsgeschichte, sondern neben die alten Formen des Überlieferns wie gedruckte Bücher treten neue Formen wie die Digitalisierung von Texten, die wiederum veränderte Zugangsweisen zu den Texten und deren Verständnis eröffnen. In diesem Kontext ist die Digitalisierung des Codex Sinaiticus als ein Beitrag zur beziehungsweise ein Teil der Infosphäre zu verstehen.

Dies bedeutet auch: Wie sich an der Digitalisierung des Codex Sinaiticus zeigen lässt, ist es genau die Technisierung, die es ermöglicht, dass Kultur, in diesem Fall die biblischen Texte, mit Hilfe der Technik in ganz neuer Weise tradiert werden können. Die systematische Theologin Elisabeth Gräb-Schmidt schreibt hinsichtlich des Verhältnisses von Technik und Mensch:

13 Elisabeth Gräb-Schmidt, »Der Homo Faber als Homo Religiosus. Zur anthropologischen Dimension der Technik,« in *Technik und Transzendenz. Zum Verhältnis von Technik, Religion und Gesellschaft* hg. Katharina Neumeister, Peggy Renger-Berka und Christian Schwanke (Stuttgart: Kohlhammer,2012), 39–55.

14 So schon der Titel seines Buchs: Luciano Floridi, *Die 4. Revolution. Wie die Infosphäre unser Leben verändert* (Berlin: Suhrkamp, 2015).

> »Im [technischen, G. U.] Werk begegnen und erkennen wir uns selbst. Das Werk steht uns zwar als Objekt gegenüber, aber als das, was WIR geschaffen haben. Insofern ist Technik auch für das Moment der Reflexivität ausschlaggebend. Die Technik ist durch das Werk insofern geradezu Initiator menschlicher Reflexivität und Freiheit. So ist es in seinem Werk, wodurch sich der Mensch als Selbst, als Freiheit erfährt.«[15]

Wenn wir dieses Verständnis von Technik auf die Möglichkeiten, die die Digitalisierung von Texten bietet, anwenden, dann lässt sich zunächst feststellen, dass sich der Aspekt der Freiheit in dieser Form der Technik tatsächlich darin manifestiert: Neben der freien Zugänglichkeit des Textes ist auch ein Distanznehmen gegenüber der direkten Wahrnehmung des Textes möglich, denn die digitale Aufbereitung des Textes führt zwar zur Zugänglichkeit, aber gleichzeitig auch zur digitalen Distanz. Das Haptische des Codex oder auch des Buches fehlt beispielsweise. Dies kann zur Freiheit gegenüber dem Text führen, die sich auch auswirken kann als Freiheit im Hinblick auf die Rezeption des Textes. Werden dann auch Methoden der Digital Humanities zur Analyse der digital aufbereiteten Texte genutzt, so zeigt sich darin eine neue Freiheit gegenüber dem Text, denn angesichts der Datenmenge und der Möglichkeiten zum Beispiel Korrelate herzustellen, können sich bis jetzt noch nicht entdeckte Ergebnisse zeigen.

Gräb-Schmidt sieht eine Grenze in der Freiheitsbestimmung der Technik darin, dass Technik selbst wieder rückzubinden ist an die Voraussetzungen von Freiheit, die diese selbst nicht entwickelt.

> »Die Technik ist zwar das Realisationsprinzip unserer Freiheit, dies ist sie aber immer auf dem Grund nicht selbst gesetzter Möglichkeiten. Genau das ist ihre Grenze, und nur unter Wahrung dieser Grenze bleibt technische Freiheit frei. Und es ist diese Erkenntnis der Grenze der Freiheit in ihrer Unverfügbarkeit, die in und mit der Technik deren Transzendenzbezüge sichtbar machen, die sie an die Gestaltung der menschlichen Person bindet. Es sind diese Aspekte der Grenzen, die für die Steuerung der Freiheit auch der Technik verantwortlich

15 Gräb-Schmidt, »Der Homo Faber als Homo Religiosus,« 47. (H. i. O.).

> sind, die in die Ethik hinüberweisen. Sie kennzeichnet die ethischen Aspekte der Freiheit.«[16]

Die Grenzen des Einsatzes von Digitalisaten und mit ihnen von Digital Humanities liegen darin, dass bei ihrer Nutzung im Blick bleibt, dass es sich nur um Abbildungen handelt, und beim Einsatz von Digital Humanities, dass es sich um eine auf Daten und Informationen fokussierte Auswertung des Textes handelt. Daher kann der Text als Gesamtkunstwerk und als lebendes Gewebe, das zum Leser oder zur Leserin spricht, nur schwer wahrgenommen werden. Dieser Transzendenzaspekt eines Textes, gerade wenn es sich um heilige Texte handelt, ereignet sich auf einer anderen Analyse-Ebene beziehungsweise in anderen Nutzungszusammenhängen. Daher zeigen sich auch bei den Digitalisaten Grenzen der Technik auf.

Die Digitalisierung des Codex Sinaiticus kann insgesamt betrachtet als Exempel dienen, wie theologische Arbeit durch Digitalisierung neue Bezugsmöglichkeiten und Perspektiven auch durch den Einsatz von Digital Humanities findet. Es geht hier um Aspekte der Referenzialität, die aufgrund der Digitalisierung neue Möglichkeiten der Verknüpfung und Auswertung von Texten findet, sowie um Gemeinschaftlichkeit, die eine Kultur der Digitalität prägt, und sich auch beim Codex Sinaiticus zeigt, wenn er zum Beispiel als Dokument der christlichen Gemeinschaft verstanden wird, und der Algorithmizität, um hier die drei Aspekte aufzugreifen, die Felix Stalder als kennzeichnend für Digitalität ausmacht.[17] Technik ermöglicht hierbei Freiheiten und dient zugleich zur Selbstkonstitution des Menschen, der sich mit Hilfe von digitalisierten Manuskripten beispielsweise in eine kulturelle Menschheitsgeschichte einreihen kann. Gleichzeitig zeigen sich an diesem Beispiel aber auch die Grenzen von technischen Möglichkeiten, weil die Heiligkeit, die mit den Texten verbunden wird, nur schwer digital wiederzugeben ist.

DIGITALISIERUNG ALS KULTURELL-GEPRÄGTE TECHNIK

Die Möglichkeiten der Digitalisierungstechniken sind eingebunden in kulturell-normative Prägungen. Beispielsweise berichtet Carolyn S. Schroeder von

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16 Ibid, 50.

17 Felix Stalder, *Kultur der Digitalität* (Berlin: Suhrkamp, 2016).

ihrer Forschung im Bereich des Koptischen. Dabei macht sie darauf aufmerksam, dass selbst bei großen Sammlungen koptischer Handschriften wie in der British Library – zumindest zum Zeitpunkt der Veröffentlichung ihres Textes, dem Jahr 2016 – koptische Dokumente eher relativ selten digital veröffentlicht worden waren.[18] Dabei ist ihr klar, dass das Koptische innerhalb der biblischen Wissenschaften einen relativ marginalen Stand hat. Für sie ist das ein Beleg, dass mit der Digitalisierung Entscheidungen, die für eine Offline-Welt kennzeichnend sind, ihren Weg in die Online-Welt finden. Sie macht dann noch am Beispiel der fehlenden Kennzeichnungen bei der TEI, der Text Encoding Initiative, für Manuskriptteile, die über verschiedene Bibliotheken verteilt sind, darauf aufmerksam, dass diese normative Entscheidung der Marginalisierung des Koptischen sich auch im TEI und damit in dessen Programmierung niederschlägt. Dabei stellt sie jedoch auch klar, dass das TEI so flexibel ist, dass Änderungen und Anpassungen kein Problem sind.[19]

Aus diesen Beispielen ergibt sich, dass bezüglich des Verhältnisses von Theologie und Technik nicht nur zu berücksichtigen ist, dass Technik Teil des kulturellen Seins der Menschen ist, das ihnen Freiheit, Distanznahme und Selbstreflexion ermöglicht. Dies zeigt sich in der Digitalisierung des Codex Sinaiticus insbesondere auch hinsichtlich der Zugänglichkeit für alle Nutzerinnen und Nutzer sowie in dessen vielfältigen Informationsebenen, die dazu dienen können, dass es mit digitaler Hilfe zur Reflexion kommt. Grundlegend ist auch, wie an den Beispielen von Carolyn S. Schroeder zu sehen ist, dass Technik und hierbei gerade auch die Möglichkeiten der Digitalisierung verwoben sind mit Machtzusammenhängen sowie mit Werten und Normen und gesellschaftlichen Wertigkeiten. Dies manifestiert sich beispielsweise in Entscheidungen, wer Zugang bekommt und was überhaupt gezeigt und aufbereitet werden soll. Mit Carolyn Schroeder lässt sich hier vom »kulturellen Kapital« im Sinne von Bourdieu reden, das mit Digital Humanities vermittelt und erworben wird. In diesem Zusammenhang werden dann auch ethische Fragen relevant, die mit Hilfe der Frage nach der Verantwortung gestellt werden können.

18 Caroline T. Schroeder, »The Digital Humanities as Cultural Capital: Implications for Biblical and Religious Studies,« *Journal of Religion, Media and Digital Culture* 5, 1 (2016): 21–49, 26 f.

19 Ibid, 36.

ETHISCHE PERSPEKTIVEN ANGESICHTS DER DIGITALISIERUNG DES CODEX SINAITICUS: ERINNERN UND BEWAHREN ALS AUSDRUCK VON VERANTWORTUNG

Die technologischen Entwicklungen der Digitalisierung tragen dazu bei, dass sich auch hinsichtlich des Erinnerns und Bewahrens deren Relevanz und Möglichkeiten verändern. Es ist der Philosoph Bernard Stiegler, der darauf hinweist, dass Gedächtnis, Erinnern und Tradieren sowie Technik eng verbunden sind. So sieht er in der Technik keinen Gegensatz zur Kultur, sondern: »Technik ist vielmehr die Bedingung der Kultur, insofern als sie deren Weitergabe und Übertragung allererst ermöglicht.«[20] Dies wird insbesondere bei der Digitalisierung deutlich. Diese bestimmt auch die Weitergabe von Kultur. Im Blick auf die Digitalisierung von Handschriften wie dem Codex Sinaiticus bedeutet dies auch, dass es zu einer Weitergabe von Kultur im Sinne eines Erinnerns und Bewahrens kommen kann. Dabei soll mit Aleida Assmann differenziert werden zwischen Erinnern und Speichern:

»Speichern kann an Maschinen abgegeben werden, Erinnern dagegen können nur Menschen, die unverwechselbare Standpunkte, eingeschränkte Perspektiven, sowie Erfahrungen, Gefühle und Ziele haben.«[21]

Erinnern umfasst also einen Gegenwartsbezug und hat konstruktiven Charakter.[22] Dies zeigt sich auch in den Analysen von Digitalisaten durch Digital Humanities und in der Aneignung von Digitalisaten durch Künstlerinnen und Künstler. Unter Bewahren verstehe ich die digitale Aufbereitung von Texten wie zum Beispiel beim Codex Sinaiticus, die abgespeichert und öffentlich zugänglich sind.

20 Bernard Stiegler, *Denken bis an die Grenzen der Maschine* (Zürich und Berlin: Diaphanes, 2009), 60. Er macht dabei aber auch deutlich, dass Technik zunächst nicht gemacht ist, um Traditionen weiterzugeben beziehungsweise als »Gedächtnisträger«, sondern eine bestimmte technische Funktion erfüllen soll.

21 Assmann, *Formen des Vergessens*, 215.

22 Vgl. Astrid Erll, *Kollektives Gedächtnis und Erinnerungskultur* (Stuttgart: J. B. Metzler, Part of Springer Nature – Springer-Verlag GmbH, 2005), 7.

DIE DIGITALISIERUNG DES CODEX SINAITICUS ALS FORM VON ERINNERN UND BEWAHREN

Was umfasst beim Codex Sinaiticus das Erinnern und Bewahren? Betrachtet man die Webseite des digitalisierten Codex Sinaiticus, so zeigt sich, dass das Erinnern und Bewahren hierbei mehrdimensional ist: Das Abbild des Codex ist dort genauso zu finden wie Übersetzungen, Kommentare und weitere Informationen. Die offene Webseite ermöglicht es, dass »wir« an den Codex Sinaiticus, an den Text und seine Geschichte und an die Codexform erinnert werden, und diese so auch bewahrt werden. Ulrich Johannes Schneider schreibt dazu:

> »Der *Codex Sinaiticus* ist in seiner Internetedition aus den streitigen Zusammenhängen seiner Entdeckung, Verschiebung und Veräußerung herausgetreten und ruht gewissermaßen in sich, an einem Ort, der niemandem gehört, außer denjenigen, die für seine Errichtung bezahlt haben und denjenigen, die die Präsenz weiter aufrecht erhalten – Textliebhaber mit öffentlicher Unterstützung.«[23]

Er spricht dazuhin von einem »Schritt in eine friedliche digitale Zukunft«.

In jedem Fall geht es bei dieser Form der Übermittlung auch um die Möglichkeit, dass »wir« uns an die Vergangenheit erinnern. Das »wir« umfasst dann nicht nur diejenigen, die für die Digitalisierung Verantwortung tragen. Beim »wir«, das ein Kollektiv ausdrückt, stellt sich die Frage, auf welches Kollektiv es sich bezieht. »Wir« kann hierbei idealerweise die gesamte Menschheit umfassen beziehungsweise jedoch zumindest alle diejenigen, die sich dafür interessieren oder die Teil einer Forschenden- oder Glaubensgemeinschaft sind. Die Digitalisierung des Codex Sinaiticus kann so auch als »geteilte Erinnerung«[24] im Sinne von Avishai Margalit verstanden werden. Der israelische Philosoph unterscheidet dabei zwischen »gemeinsamer Erinnerung« als einem »Begriff, der eine Summe zum Ausdruck bringt. Er umschließt Menschen, die sich alle an eine bestimmte, von jedem Einzelnen

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23 Ulrich Johannes Schneider und Zeki Mustafa Dogan, »Digitaler Humanismus: Das Beispiel des Codex Sinaiticus,« *Bibliothek und Wissenschaft*: BuW I no. 44 (2011): 37–44, 41.

24 Vgl. Avishai Margalit, *Ethik der Erinnerung. Max Horkheimer Vorlesungen*, 2. Aufl., (Frankfurt am Main: Fischer, 2002), 33 ff.

erlebte Episode erinnern.«[25] Beispielsweise haben wahrscheinlich die Verantwortlichen für die Digitalisierung des Codex Sinaiticus solche »gemeinsamen Erinnerungen«. Uns interessieren hier jedoch im Sinne der »geteilten Erinnerung« weitere Fragen: Welche ethischen Implikationen birgt die Digitalisierung des Codex Sinaiticus, wenn wir sie unter dem Aspekt des Erinnerns und Bewahrens betrachten? Margalit beschreibt mit der geteilten Erinnerung das Phänomen, dass diese nicht nur »ein Speicher« ist, sondern der gemeinsamen Verständigung bedarf. Er schreibt:

> »Auch ist die geteilte Erinnerung geeichte, objektivierte Erinnerung, denn sie integriert, in EINE Version oder zumindest in eine kleine Zahl von Versionen […] Geteilte Erinnerung in modernen Gesellschaften […] benötigt Institutionen, wie etwa Archive, und sie bedarf öffentlicher mnemotechnischer Hilfsmittel, wie etwa Denkmäler und Straßennamen.«[26]

Diese geteilte Erinnerung hat also die Dimension, dass sie sich nicht nur auf die Einzelnen bezieht, sondern ein kollektives Geschehen ist. Auf die Frage, ob es dann eine Pflicht des Erinnerns geben kann, antwortet Margalit damit, dass es für das Kollektiv zumindest eine Verantwortung gibt, die Erinnerung zu pflegen und lebendig zu erhalten, auch wenn man als Individuum vielleicht gar nichts damit zu tun hat. Die geteilte Erinnerung kann dazuhin eine Erinnerung der Erinnerungen sein, wie sie hier bei dem digitalisierten Codex vorliegt. Dies bedeutet andererseits wiederum, dass sich in dem Artefakt, das digitalisiert wurde, Vergangenheit aktualisiert hat.[27] Dabei kann von einer doppelten Ebene des Erinnerns der Vergangenheit hinsichtlich des Codex Sinaiticus ausgegangen werden, nämlich dem Erinnern an das Artefakt, im Sinne seiner Entstehungs- und Fundgeschichte sowie dem Erinnern an den Textkorpus der Bibel, den es umfasst. Für Margalit ist es die Anteilnahme, die zu einem Kriterium wird, warum überhaupt erinnert werden soll. Die Inhalte der Erinnerung sind für ihn jedoch ganz andere: Erinnert werden

25 Ibid, 35.

26 Ibid, 35–37.

27 Vgl. Thomas Laubach, *Warum sollen wir uns erinnern? Annäherungen an eine Anamnetische Ethik* (Tübingen: Francke, 2006), 293 ff.

sollten die Dinge und Ereignisse, die die Moral untergraben haben und das radikal Böse darstellen. An diesem Punkt gilt es, die Gedanken Margalits weiterzuentwickeln. Denn: Es ist unter den gegebenen Bedingungen der »Infosphäre« nicht mehr allein die Frage, dass der Holocaust, wie bei Margalit beispielsweise tradiert werden sollte, sondern es geht auch um die – die menschliche Kultur und Geschichte in einem positiven Sinne prägenden – Erzählungen und Artefakte, die tradiert werden, weil an sie erinnert werden sollte. Daher gilt es, auch die Frage nach dem »Was soll eigentlich tradiert werden?« mit zu reflektieren. Mir ist dabei bewusst, dass sich mit der Vorstellung der »geteilten Erinnerung« die kulturelle, theologische und ethische Bedeutung der Digitalisierung des Codex Sinaiticus nur zum Teil erfassen lässt. Daher verknüpfe ich die geteilte Erinnerung auch mit dem Aspekt des Bewahrens. Denn: Erinnern lässt sich meines Erachtens auch ohne Bewahren von beispielsweise Artefakten bewerkstelligen. Für den Codex Sinaiticus ist daher Erinnern und Bewahren wesentlich, weil auch die materiellen Aspekte bei ihm von besonderer Bedeutung sind. Dazuhin kann Erinnern und Bewahren gleichzeitig in einem prospektiven Sinne verstanden werden, so dass neben diesen beiden Aspekten auch die Nutzung beziehungsweise Verwendung beziehungsweise Auswertung oder die Rezeption des Bewahrten in den Blick treten soll. Gleichzeitig führt das Bewahren auch den Aspekt des Speicherns und damit des Archivs in sich, und so kann auch davon ausgegangen werden, dass Digitalisiertes gespeichert wird, auch wenn es nicht aktiv genutzt wird. Hier gilt es jedoch auch zu überlegen, wie und ob dies tatsächlich so der Fall ist beziehungsweise wie Digitalisate so eingerichtet werden sollten, dass sie auch bei nicht regelmäßigem Gebrauch weiterhin zugänglich bleiben.

Es zeigt sich mit der Argumentationsfigur der »geteilten Erinnerung« und darüber hinaus, dass diese sich auch auf den Codex Sinaiticus beziehen lässt. Entwickelt man die Idee weiter, dass »geteiltes Erinnern« im Kontext von Erinnern, Bewahren und der Rezeption verstanden werden sollte, dann helfen meines Erachtens wiederum Fragen der Verantwortung dabei, die ethischen Dimensionen dieser Aspekte der Digitalisierung zu thematisieren. Dabei zeigen sich auch typische Elemente der Funktion von Medien, die als Speicher und Zirkulationsinstrumente fungieren können und »Abrufhinweise« ausbilden, das heißt also selbst Anlass zum Abrufen von Erinnerungen werden, wie dies zum Beispiel bei Familienfotos der Fall ist, wobei hier von einer Einsortierung in Überlieferungszusammenhänge auszugehen ist.[28]

VERANTWORTUNGSETHISCHE GESICHTSPUNKTE HINSICHTLICH DER »GETEILTEN ERINNERUNG«

Wie wir gesehen haben, führt die Vorstellung der »geteilten Erinnerung«, die auch Bewahren und die Frage nach den Rezeptionsmöglichkeiten in den Blick bringt, zur Notwendigkeit der Verständigung über diesen Prozess des Erinnerns. Im Folgenden soll mit Hilfe der Frage nach der Verantwortung für die »geteilte Erinnerung« ein Versuch unternommen werden, ethische Aspekte im Hinblick auf die Digitalisierung biblischer Texte zu thematisieren, um so auch deren Machtaspekte in den Blick zu bekommen:

a. Zunächst geht es um die Frage nach den INHALTEN: An was soll eigentlich erinnert beziehungsweise was soll bewahrt werden beziehungsweise anders formuliert, was soll in den Prozess der Digitalisierung aufgenommen werden? David Parker macht zum Beispiel darauf aufmerksam, dass es sich bei der Digitalisierung des Codex Sinaiticus um eine äußerst sorgfältige und damit auch aufwendige Arbeit handelt, die sicherlich in dieser Form nicht bei allen Handschriften gemacht werden könne.[29] Daher hat der Akt des Auswählens in so einer Weise zu geschehen, in der die »geteilte Erinnerung« eine Rolle spielt. Das bedeutet jedoch, dass es je nach Fall nicht nur um abschreckende Beispiele geht, sondern um Wertvolles, weil es relevant für das Verständnis des Vergangenen und für die Gegenwart ist. Dabei ist zu beachten und kritisch zu durchleuchten, was Patricia Engel anspricht:

> »Die reine Tatsache, dass ein bestimmter Text digitalisiert wird, während andere Texte nicht digitalisiert werden, fügt beiden etwas hinzu – an neuen Dimensionen und Qualität, dem originalen Text und seiner digitalen Version. Die Entscheidung einen Text zu digitalisieren […] kann an der Tatsache liegen, dass er als besonders wichtig gilt, dass er in Gefahr des Verlustes ist oder dass andere Gründe vorliegen. Was auch immer der Grund dafür sein mag, jedem Digitalisie-

28 Erll, *Kollektives Gedächtniss*, 139.

29 Parker, »Ancient Scribes and Modern Encodings,« 187.

> rungsprozess gehen Interpretation und Kategorisierung voraus. Diese (Entscheidung für) eine bestimmte Kategorisierung beeinflusst die gesamte Zukunft des Originals«[30].

Wie sich an der Frage, welche der Texte und Artefakte digitalisiert werden sollen, zeigt, ist diese eng verbunden mit weiteren Aspekten: dem Grund und dem Zweck der Digitalisierung.

b. Der Grund der Digitalisierung mag, wie gerade genannt, vielfältig sein. Wichtig ist hier meines Erachtens, dass sich aus der Notwendigkeit, beispielsweise des Verfalls eines Artefakts Grade der Dringlichkeit ergeben können. Ein Grund kann auch in der Idee der Demokratisierung von Wissen liegen. Verknüpft mit der Bedeutung, die »geteilter Erinnerung« hier zugeschrieben wird, ergeben sich daraus schon normative Implikationen für den Zweck und für die Frage, wie die Digitalisierung vollzogen und wer sie vornehmen soll.

c. Der Zweck des »geteilten Erinnerns« umfasst wiederum vielfältige Perspektiven – wie sich am Beispiel des Codex Sinaiticus zeigt: Die Digitalisierung dient zum einen dem Bewahren, damit auch weitere Forschergenerationen Zugang zum Text haben. Die Erkenntnisse, die mit Hilfe des Codex Sinaiticus möglich sind, sollen und können geteilt werden. Außerdem kann der Digitalisierung auch zugeschrieben werden, dass sie zur Identitätsstiftung beiträgt. Die Identitätsbildung, die der digitalisierte Codex Sinaiticus bewirkt, kann sich auf die wissenschaftliche Community und die Studierenden beziehen, die ihn untersuchen beziehungsweise an ihm lernen, wie Instrumentarien der Digital Humanities eingesetzt werden können, sowie auf die christliche Community, die den Text auch in seiner digitalisierten Version als Glaubenszeugen verstehen kann – und hierbei den Beleg für die eigene Tradition bildlich sehen kann. Außerdem kann er als Teil der Menschheitsgeschichte verstanden werden.

d. Die Formen, das »Wie« des Erinnerns: Immer wieder machen diejenigen Forscherinnern und Forscher, die Digitalisate erstellen, auch darauf aufmerksam, dass bei der digitalen Form des Erinnerns und Bewahrens nicht zu vergessen ist, dass es sich um Abbildungen beziehungsweise Nach-

30 Patricia Engel, »Digital Images: A Valuable Scholar's Tool or Misleading Material?,« *Journal of Integrated Information Management, Proceedings* IC-ININFO (2011): 272–276, 275, http://ejournals.teiath.gr/index.php/JIIM/issue/view/298.

bildungen handelt, die eben nicht alle »Geheimnisse des Originals« aufnehmen beziehungsweise wiedergeben können. Daher sind für den Prozess der Digitalisierung Verantwortung gefragt und Überlegungen, wie man dem zu Digitalisierenden gerecht werden kann. Beim Codex Sinaiticus wurde dem Mehrdimensionalen des Codex Rechnung getragen, indem beim Betrachten beispielsweise verschiedene Beleuchtungsmöglichkeiten angewählt werden können. Es scheint jedoch so, dass bei aller Faszination, die Digitalisierung mit sich bringt, es auch immer noch Gründe für und Vorteile der Erschließung von Texten in gedruckter Form geben kann. Dies zeigt sich insbesondere bei der Frage nach der nachhaltigen Nutzung von Digitalisaten: Wie lässt sich sicherstellen, dass diese technologisch aktualisiert werden und auch über die Jahre zugänglich bleiben? Denn wenn die technische Aktualisierung nicht gegeben ist, kann es zum virtuellen Vergessen kommen.

e. Fragen nach der Verantwortung sind immer auch Fragen, wer die Akteure und Akteurinnen, das heißt die Verantwortungsträger und -trägerinnen, eigentlich sind – und hiermit verknüpft sind auch folgende Fragen: Erstens, wer entscheidet darüber, was digitalisiert und zum Erinnern und Bewahren geführt wird? Und zweitens, wen sollen diese Phänomene der geteilten Erinnerung eigentlich erreichen? Wenn sie online gestellt sind, ist folglich der Zugang für alle möglich. Dies kann als eine Demokratisierung von Wissen und auch von geteilter Erinnerung bezeichnet werden. Die Zugänglichkeit ist hierbei ein wichtiger Faktor, der jedoch gerade unter verantwortungsethischen Gesichtspunkten wiederum zu hinterfragen ist: Ist tatsächlich eine weltweite Zugänglichkeit gewährleistet? Ist diese sinnvoll? Und wenn dieses Ziel angestrebt ist, was bedeutet dies für die Darstellung beispielsweise der Manuskripte? Welche Erläuterungen werden benötigt? Und in welchen Sprachen und in welcher Wissenschaftstradition werden diese eingestellt?

Gleichzeitig ergibt sich im Blick auf das Erstellen der Edition die Frage: Wer ist hierfür verantwortlich? Wer hat die Autorität über die Entscheidungen? Oder soll es ein Projekt im Sinne einer Demokratisierung von Wissenschaft werden, an dem dann auch »citizen scholars« beteiligt sind?

Gleichzeitig ist gerade unter verantwortungsethischen Gesichtspunkten – im Hinblick auf die Verantwortung zum Beispiel gegenüber wissenschaftlichen Standards und dem Ethos von Wissenschaftlerinnen und Wissenschaftlern – zu fragen, ob tatsächlich das Wissen der Laien von Nöten ist, oder ob nicht doch genau an dieser Stelle das Expertenwissen einzusetzen ist. Hierbei kommen auch generelle Fragen der Digitalisierung bezüglich digitaler Veröffentlichungsmöglichkeiten auf, so zum Beispiel, ob sie Hierarchien im akademischen Bereich unterwandern.[31]

Analysiert man die Digitalisierung biblischer Texte unter verantwortungsethischen Aspekten, so treten eine Vielzahl von Entscheidungen in den Blick, die ethische und moralische Fragen aufwerfen. Man kann auch sagen: die normativen Vorentscheidungen umfassen. Wie diese zu beantworten sind, muss jeweils in Relation zum jeweiligen Projekt beantwortet werden. Das heißt: Diese Fragen sind nicht klar und eindeutig in Form von Checklisten zu bearbeiten, sondern sie sind als Teil eines Abwägungsprozesses zu verstehen, in dem mit Hilfe von Fragen nach der Verantwortung ethische Aspekte der zu fällenden Entscheidungen und damit auch des Handelns aufgegriffen werden können.

AUSBLICK ÜBER DEN CODEX SINAITICUS HINAUS UND DIE VORLÄUFIGKEIT VON ERINNERN UND BEWAHREN

Erweitert man den Blick über die Digitalisierung des Codex Sinaiticus hinaus, treten zwei grundlegende Aspekte in den Vordergrund: Erstens die Frage nach dem Rahmen beziehungsweise der Perspektive, die die Digitalisierung, die Digitalisate und die Digital Humanities prägt, und zweitens geht es um die Relativität im Sinne von Vorläufigkeit des Erinnerns und Bewahrens. Zum Ersten lässt sich zugespitzt formulieren, dass es bei der Digitalisierung in den Geisteswissenschaften um die grundlegende Frage geht, in welchem Rahmen beziehungsweise unter welcher Perspektive die Digitalisate erstellt werden und gemäß welcher Kriterien Digital Humanities betrieben werden. Gerade die Algorithmizität, die auch in den Digital Humanities eine immer wichtigere Rolle spielt, soll hierbei als Beispiel dienen. Algorithmen sind nicht allein als Werkzeug zu betrachten, sondern bedürfen einer Rahmensetzung, wozu

31 Katherine N. Hayles, *How We Think: Digital Media and Contemporary Technogenesis* (Chicago und London: University of Chicago Press, 2012), 4.

der Einsatz von Big Data und damit auch Algorithmen dienen kann, denn wie Cathy O'Neil feststellt:

»Big Data-Prozesse kodifizieren die Vergangenheit. Sie erfinden nicht die Zukunft. Dafür braucht es moralische Imagination und dies ist etwas, das nur Menschen leisten können.«[32]

Dies bedeutet auch, dass klar sein muss, dass Algorithmen Instruktionen sind, wie Daten ausgewertet und verarbeitet werden sollen, die von richtigen oder falschen Voraussetzungen ausgehen können oder implizite Werte beinhalten, die nicht durchdacht sind.[33] An diesem Beispiel zeigt sich, dass der Prozess der Digitalisierung nicht wertfrei ist. Sowohl bei den Methoden als auch im Blick auf die grundlegenden Vorentscheidungen zur Digitalisierung ergeben sich gerade unter einer Perspektive der Verantwortung Fragen, die Werte und Norm-Entscheidungen umfassen. Daher bedarf der Prozess der Digitalisierung auch ethischer Überlegungen.

Blickt man aus einer längerfristigen Perspektive auf Digitalisierung, zeigt sich zweitens angesichts der Veränderungen, die auch Erinnern und Bewahren mit Hilfe von Digitalisaten durchlaufen, dass die dadurch vorgenommenen Deutungen von Wirklichkeit nur in einem vorläufigen Sinne verstanden werden können, weil auch sie dem Wandel der Zeiten unterworfen sind.[34] Gleichzeitig können aber auch Digitalisate aufgrund von deren offener Zugänglichkeit zu einem gemeinsamen Sich-Erinnern führen, in dem individuelles und kollektives Erinnern zur gemeinsamen Identitätsbildung zusammenfließt.[35] Digitalisierung und die damit möglichen Digitalisate sowie die Digital Humanities als wissenschaftliches Forschungsfeld schaffen Zugänge zu historischen Quellen, wie dem Codex Sinaiticus. Diese Artefakte sind, auch als heilige Texte, die im religiösen Bereich Verwendung finden, für alle

32 Cathy O'Neil, Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy (New York: Crown, 2017), 204, eigene Übersetzung.

33 Sandra González-Bailón, Decoding the Social World: Data Science and the Unintended Consequences of Communication (Cambridge, MA und London: The MIT Press 2017), 173.

34 Zur Vorläufigkeit der historischen Erinnerungen und der Geschichte, vgl. Achim Landwehr, *Die anwesende Abwesenheit der Vergangenheit. Essay zur Geschichtstheorie* (Frankfurt: S. Fischer, 2016), 273.

35 Norbert Reck, »Sich erinnern. Beobachtungen zu objektivierenden und reflexiven Formen der Erinnerung,« in *Erinnern. Erkundungen zu einer theologischen Basiskategorie,* hg. Paul Petzel, und Norbert Reck (Darmstadt: WBG, 2003), 282–300, 296.

zugänglich und führen zu einem »Erinnerungs-Auftrag«[36]. Dieser umfasst die Erhaltung von Kulturgut und von Artefakten sowie Digitalisaten, die Deutungen der Vergangenheit ermöglichen. Damit kann die Gegenwart im Kontinuum von Vergangenheit und Zukunft wahrgenommen werden. Zu klären, was dieser »Erinnerungs-Auftrag« umfasst, ist jedoch nicht nur Aufgabe von Historikern und Historikerinnen und Exegeten und Exegetinnen, sondern ist eine gemeinsame, gesellschaftliche Aufgabe.

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36 Hier wird eine Terminologie der Assmanns aufgenommen, die den Erinnerungs-Auftrag auch bei den Medien verankern, Aleida und Jan Assmann, »Das Gestern im Heute. Medien und soziales Gedächtnis,« in *Die Wirklichkeit der Medien. Eine Einführung in die Kommunikationswissenschaft,* hg. Klaus Merten, Siegfried J. Schmidt, und Siegfried Weisenberg (Opladen: Springer, 1994), 114–140, 140.

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IV
CRITICAL DIGITAL BIBLICAL STUDIES UND DIE VERÄNDERUNGEN DURCH DIGITALISIERUNG – SYSTEMATISCH-THEOLOGISCHE ÜBERLEGUNGEN UND PÄDAGOGISCHE ANREGUNGEN

TEXTE ODER DATEIEN? DIE THEOLOGIE UND DIE DIGITAL HUMANITIES

GESCHE LINDE

EINLEITUNG: DIE DIGITAL HUMANITIES UND DAS PATHOS DER WISSENSCHAFTLICHKEIT

Geisteswissenschaftliche Digitalisierungsprojekte werden in nennenswertem Ausmaß seit den frühen 1980er Jahren durchgeführt. Die universitären Theologien waren in Gestalt von elektronischen Editionen, Synopsen und Konkordanzen schon früh daran beteiligt, zumal es sich bei dem Vorreiter der gesamten Entwicklung um einen katholischen Theologen und Philosophen handelte: Es war Roberto Busa, ein italienischer Jesuitenpater und Hochschulprofessor, dem es 1949 gelang, den IBM-Gründer Thomas J. Watson Senior – den Gründer jener Firma, deren verheißungsvoller Werbeslogan lautete: »The difficult we do right away, the impossible takes a little longer« – von dem kühnen Plan zu überzeugen, unter Einsatz eines lochkartenverarbeitenden und fabrikhallenfüllenden Computers den *Index Thomisticus* zu erstellen,[1] einen letztlich 49 physische Bände umfassenden Index zu den *Opera omnia* des Thomas von Aquin, ab den 1970er Jahren erweitert und präzisiert durch die dependenzgrammatikalisch arbeitende *Index Thomisticus Baumbank*. Der Sohn und Nachfolger des Firmengründers, Thomas J. Watson Junior, ließ sich wiederum durch diese Unternehmung dazu anregen, gezielt politisch für die Digitalisierung in den Geisteswissenschaften zu werben und IBM an den Universitäten für den prospektiven neuen Markt in Stellung zu bringen.[2] Dementsprechend sorgte er als Gründungsmitglied im Kuratorium des 1965 ins Leben gerufenen *National Endowment for the Humanities* dafür, dass »di-

1 Siehe dazu: Steven Edward Jones, *Roberto Busa, S. J., and the Emergence of Humanities Computing: The Priest and the Punched Cards* (New York, London: Routledge, 2016), 28–43, bes. 32.

2 Vgl. Margarete Pratschke, »Wie Erwin Panofsky die Digital Humanities erfand. Für eine Geschichte und Kritik digitaler Kunst- und Bildgeschichte,« *Kritische Berichte. Zeitschrift für Kunst- und Kulturwissenschaften* 44 (2016/3): 56–66, hier 58.

gitale Vorhaben in den Geisteswissenschaften zu einer zentralen Förderlinie wurden. Daraus ließe sich«, so die Kunsthistorikerin Margarete Pratschke, »der provokante Umkehrschluss ziehen, dass die US-amerikanischen Humanities erst unter der Bedingung ihrer Computerisierung forschungsförderungswürdig wurden.«[3] Wie auch immer – zumindest zeigt die Geburtsgeschichte der Digital Humanities zweierlei. Erstens: Digitalisierungsprojekte sind nicht nur von wissenschaftlichen, sondern auch von ökonomischen Interessen geleitet. Der Hinweis darauf lohnt sich deshalb, weil beide alles andere als zwangsläufig identisch sind. Zweitens: In dem Maße, im dem die endlichen Ressourcen der öffentlichen Fördergelder verstärkt in Projekte der Digital Humanities fließen – und damit für anderes nicht mehr zur Verfügung stehen – stellt unter der politisch gewollten Bedingung des Drittmitteldrucks diese Förderung einen nicht unerheblichen Anreiz für Geisteswissenschaftler und Geisteswissenschaftlerinnen dar, sich auf derartige Projekte zu verlegen, und zwar auch dann, wenn sie anderes für wissenschaftlich lohnender halten würden.

Digitale Hilfsmittel sind heute eine Selbstverständlichkeit geworden. Die Möglichkeiten des elektronischen und zudem durch Suchbefehle geleiteten Zugriffs auf Ton-, Bild- und Textmaterialien – Pergamente, Papyri, Manuskripte, Raria etc. eingeschlossen – erweitern sich ständig; und die für die Geisteswissenschaften zentrale Standardaufgabe der Literaturrecherche hat sich seit meinen Studentinnentagen, zu denen ich im Proseminar des überaus gewissenhaften Mainzer Neutestamentlers Ehrhard Kamlah noch den Umgang mit gedruckten Jahresbibliographien lernen musste, gewaltig vereinfacht – glücklicherweise. Deutsche Universitäten richten immer mehr Schwerpunkte im Bereich der Digital Humanities ein oder beanspruchen dies zumindest – beispielhaft genannt seien nur der »Interdisziplinäre Forschungsverbund Digital Humanities in Berlin«, das Münchner »LMU Center for Digital Humanities«, das »Göttingen Centre für Digital Humanities (GCDH)«, die »Digital Humanities Cooperation«, eine »Forschungsinitiative der TU Darmstadt und der Universität Konstanz«[4], der hessische LOEWE-Forschungsförderungsschwerpunkt »Digital Humanities Hessen – Integrierte Aufbereitung und Auswertung textbasierter Corpora« unter Beteiligung der Technischen

3 Ibid, 59.

4 »Digital humanities cooperation,« Unsere Philosophie, Abfrage vom 2. Mai 2018, http://www.digitalhumanitiescooperation.de/philosophy/.

Universität Darmstadt, der Goethe-Universität Frankfurt und des Frankfurter Freien Deutschen Hochstifts sowie selbstverständlich das »Deutsche Dokumentationszentrum für Kunstgeschichte – Bildarchiv Foto Marburg« der Marburger Philipps-Universität. An einzelnen Universitäten, darunter Leipzig, lassen sich bereits Studienabschlüsse in den Digital Humanities erwerben, und immer mehr Universitäten, etwa Hamburg und Paderborn, weisen Digitalisierung als fakultäts- oder sogar universitätsübergreifendes Paradigma aus. Der Blog »Digital Humanities im deutschsprachigen Raum«[5] listet in einem Beitrag des Historikers Patrick Sahle von der »Koordinierungsstelle Digital Humanities« der Nordrhein-Westfälischen Akademie der Wissenschaften am »Cologne Center fore Humanities (CCeH)« allein für die BRD, wenn ich richtig gezählt habe, zwischen 2008 und 2016/17 an insgesamt 22 verschiedenen bundesdeutschen Universitäten 48 universitäre Professurausschreibungen im Bereich der Digital Humanities auf. Dies alles lässt bereits ahnen, dass und wie schnell aufgrund des – nicht zuletzt auch politisch beförderten – Wandels der institutionellen Strukturen die bisherigen Fachkulturen sich verändern werden. Vor diesem Hintergrund erscheint die Anti-Establishment-Rhetorik, mit der sich manche Vertreter und Vertreterinnen der Digital Humanities in Szene setzen,[6] hie und da ein wenig aufgesetzt.

Während die Erweiterung und Beschleunigung geisteswissenschaftlicher Arbeitsmöglichkeiten durch digitale *Hilfsmittel* nicht nur als unproblematisch, sondern als dringend begrüßenswert betrachtet werden muss, gilt dasselbe nicht für die durch die Digital Humanities ausgerufene radikale *Erneuerung* der Geisteswissenschaften als solcher. Worin liegt das Pathos – oder zurück-

5 »DHdBlog,« Zur Professoralisierung der Digital Humanties, Abfrage vom 2. Mai 2018, http://dhd-blog.org/?p=6174.

6 So etwa die Erziehungswissenschaftlerin Shalin Hai-Jew von der Kansas State University, in ihrem »Preface«, in *Data Analytics in Digital Humanities,* hg. dies., (Cham: Springer, 2017), vii- xii, hier viii: »Often, the spirit of the digital humanities is countercultural; it fights against extant power structures and norms. The DH is often value-informed and socially active, in the pursuit of social justice. DH practitioners take a questioning stance because the world is never quite as it seems. There are elusive and latent interpreted truths to be discovered or (co)created. While its core spirit is of changing the current order, at the same time, DH work requires ever [sic] higher levels of expertise in content fields and technological methods. The work is anti-Establishment but requires some of the expertise of Establishment and accrued skills from years of development. Virtuosity in the digital humanities simultaneously requires the fiery rebel spirit and the iciness of acquired expertise.«

haltender gesagt: das Ethos –, mit dem diese Erneuerung proklamiert wird? Aus den Schriften und Vorträgen eines weiteren Italieners, des heutigen Protagonisten der Digital Humanities Franco Moretti, der 2010 das *Stanford Literary Lab* mitgründete, spricht der Ehrgeiz einer Verwissenschaftlichung, einer Szientifizierung der Geisteswissenschaften. Den kulturellen Hintergrund des Moretti-Programms bildet die angelsächsische Universitätslandschaft, in der bekanntlich zwischen den *Humanities* und den *Sciences* unterschieden wird. In dieser Terminologie liegt der Gedanke zart angedeutet, dass nur die Natur-, nicht aber die Geisteswissenschaften berechtigt seien, auf den Ehrentitel der Wissenschaftlichkeit Anspruch zu erheben. Dementsprechend heißen die Repräsentanten und Repräsentantinnen der *Humanities* freundlich – und nicht einmal respektlos – »Gelehrte«, *Scholars*, während die Vertreter und Vertreterinnen der *Sciences* eben Wissenschaftler und Wissenschaftlerinnen, *Scientists*, sind. Das Bemühen um eine Szientifizierung der Geisteswissenschaften nach naturwissenschaftlichem Vorbild ist, wissenschaftshistorisch betrachtet, keineswegs neu: Es findet sich beispielsweise bei Jeremy Bentham und John Stuart Mill, die den Quantifizierungsgedanken für die Begründung einer philosophischen Ethik fruchtbar machten. Es findet sich beim Wiener Kreis, der die philosophischen Probleme der Philosophiegeschichte als Scheinprobleme entlarven wollte und den verbleibenden Rest einer strikt empiriebasierten und logisch kontrollierten Klärung zu unterziehen trachtete; und es findet sich heute in der analytischen Philosophie, die versucht, systematische Sachfragen auf dem Weg der logischen Begriffsanalyse zu lösen, und die vor allem in Großbritannien und den USA längst auch auf die Religionsphilosophie durchgeschlagen hat.

Die Szientifizierung der *Humanities* durch das spezifische Instrument der Digitalisierung – welche die *Sciences*, so die Andeutung, nicht nötig haben, da das Digitale ohnehin ihr Element bildet (schließlich käme niemand auf die Idee, Professuren für *Digital Sciences* einzurichten) – hat zum Ziel, so muss man Moretti verstehen, mindestens zwei zentrale, am Paradigma des Laborexperiments[7] gewonnene Kriterien für Wissenschaftlichkeit, nämlich die

7 Z. B. Shalin Hai-Jew, Preface, ix: »The spirit of DH is of experimentation along the entire work chain: theorizing and conceptualization, research and data collection, content curation, data processing, data analytics, and often open publishing (of digital corpora and collections, of virtualized experiences, of publications, and of multimedial presentations).« Franco Moretti, *Distant Reading* (London, New York: Verso Books, 2013), 53:

Reproduzierbarkeit von Ergebnissen sowie deren Überprüfbarkeit, auch auf geisteswissenschaftliche Forschung anwenden zu können.[8] Nicht mehr einsam am Schreibtisch sollen Geisteswissenschaftler und Geisteswissenschaftlerinnen fortan arbeiten, mit einem Stift in der Hand, um sich in ein einzelnes Buch zu vertiefen, sondern vielmehr in einem kollektiv besetzten »Labor«, in dem man »Experimente« an einer Vielzahl von Büchern durchzuführen hat. Hinter dieser Zielsetzung, hinter dieser Umsiedlungsforderung, die auch eine Umerziehungsforderung ist, steckt der Argwohn, dass die Produkte der *Humanities* bislang erstens von den mehr oder weniger zufälligen Erfahrungshorizonten, Begabungen, Temperamenten (wie William James bemerkte) und intellektuellen Prägungen der individuellen *Scholars* abhängig gewesen seien und sich zweitens deshalb beklagenswerterweise der methodischen Kontrollierbarkeit entzogen hätten. Auf diese Weise tritt die digitale Szientifizierung der Geisteswissenschaften an, das von Charles Percy Snow 1959 nicht nur behauptete, sondern auch beklagte Verständigungsproblem zwischen den »two cultures« zu beseitigen – und zwar nicht durch Bikulturalisierung, wie es der Physiker *und* Schriftsteller Snow sich noch gewünscht hatte, sondern schlicht und einfach durch Inkulturation.

TEXTE ZU DATEN

Was sind die Mittel, mit denen diese Inkulturation erreicht werden soll? Zentral sind erstens die *qualitative* Verwandlung von Texten in Daten und zweitens die *quantitative* Erweiterung der Datenmenge. Die *qualitative* Verwandlung von Texten in Daten führt dazu, dass Texte maschinell durchsuchbar werden, dass sie sich intern rearrangieren lassen, dass sie sich mit anderen Texten bzw. Daten verlinken und gemeinsam darstellen lassen und dass sie diagrammatisch repräsentierbar werden. Die *quantitative* Erweiterung der Datenmenge führt dazu, dass auch solche Texte erfasst und einer Querschnittsanalyse unterzogen werden können, die bisher nicht berücksichtigt wurden, so dass

»See the beauty of distant reading plus world literature: they go against the grain of national historiography. And they do so in the form of an *experiment*.«

8 Moretti, *Distant Reading*, 155: »[…] the pursuit of a sound materialistic method, and of testable knowledge, occupied more and more of my attention […].« Vgl. ebd., 50–53.

sich zum einen anhand neuen Materials neue Fragestellungen entwickeln lassen und zum anderen die an den Texten erhobenen Forschungsergebnisse höheren Anspruch auf Zuverlässigkeit und Aussagekraft erheben können als bisher. Die Tätigkeit, mit der aus den zu Daten transformierten Texten solche Forschungsergebnisse extrahiert werden, heißt nicht von ungefähr »Data Mining«. Diese Metapher lässt Daten als Minen erscheinen, aus deren wertlosem Gestein das Gold der verwertbaren Resultate unter Anwendung von Zähigkeit und Fleiß sowie durch Einsatz unbekümmerter Gewalt herausgebrochen werden muss, und das heißt: ohne Rücksicht auf die von dem Text selbst vorgegebenen grammatischen, semantischen und pragmatischen Zusammenhänge. Das Mittel zum Einsatz solch unbekümmerter Gewalt besteht im *Distant Reading*, welches das *Close Reading* ablöst, in einem Verfahren also, das nicht mehr Inhalt und Form eines einzelnen Textes zu erfassen sucht, sondern das auf Mustererkennung in der Breite setzt und dafür automatisierte Verfahren statistischer Art einsetzt. Solche einzeltextübergreifenden Muster können von Themen gebildet werden, von Erzählstrukturen, stilistischen Eigenschaften, historischen Bedingungen etc. Die Ergebnisse dieser Mustererkennung können folgerichtig nicht anders denn als Regularitäten beschrieben werden, in enger Analogie zur Entdeckung von Naturgesetzen. So kann Moretti beispielsweise berichten, wie er durch – letztlich induktiv zu nennende – Testverfahren dazugelangt sei, ein »Gesetz der literarischen Evolution« aufzustellen,

> »a law of literary evolution: in cultures that belong to the periphery of the literary system (which means: almost all cultures, inside and outside Europe), the modern novel first arises not as an autonomous development but as a compromise between a western formal influence (usually French or English) and local materials.«[9]

Die metaphysische Voraussetzung dieses Verfahrens, die allerdings eine hochgradig anfechtbare ist, lautet, dass die Geistes- beziehungsweise Kulturgeschichte ähnlich wie die Naturgeschichte letztlich universalen Gesetzmäßigkeiten folge. Aus diesem Grund kann Moretti explizit die Aufdeckung *kausaler* Zusammenhänge, die ihm zufolge die Geschichte bestimmen – auch

9 Ibid, 50. Vgl. 54: »[...] the encounter of Western forms and local reality did indeed produce everywhere a structural compromise – as the law predicted [...].«

dies eine hochgradig diskussionsbedürftige These – zu seinem Forschungsziel erklären: »where the real challenge lies, and the hope for genuine break throughs, is in the realm of causality […].«[10]

Ganz unabhängig von den angedeuteten wissenschaftstheoretischen Fragestellungen verdient das, was die Digital Humanities im Blick auf den Stellenwert von Texten in den Geisteswissenschaften eingeläutet haben, als Paradigmenwechsel beschrieben zu werden, weil die Digitalisierung sich keineswegs darauf beschränkt, Texte im Medium des Digitalen zur Verfügung zu stellen und texterschließende Hilfsmittel zu erarbeiten – dies ein dringend erforderliches Unterfangen, das, wie bereits erwähnt, alle Unterstützung verdient –, sondern weil sie die beiden Hauptfunktionen betrifft und verändert, die Texte in den Geisteswissenschaften bislang innehatten: die Funktion als Forschungs*gegenstand* und die Funktion als Forschungs*medium*. Ihre Funktion als Forschungs*gegenstand* haben Texte bislang in zweifacher Hinsicht wahrgenommen: Sie zogen in der Regel um ihrer selbst willen, ihres Inhalts wegen, zuweilen auch ihrer Form, ihres Trägermaterials oder der Umstände ihres Auftretens wegen das Analyseinteresse auf sich. Zugleich konnten sie als Reaktion auf andere Texte verstanden werden (Stichwort: Intertextualität). Die Funktion als Forschungs*medium* übernahmen Texte, indem das Resultat der geisteswissenschaftlichen Arbeit selbst textförmig verfasst war: Geisteswissenschaftler und Geisteswissenschaftlerinnen pflegten sich bisher auf dem Wege der Produktion von Texten über Texte als solche, die sich ihrerseits auf weitere Texte beziehen, zu verständigen. Diese Doppelfunktion von Texten – Forschungsgegenstand und Forschungsmedium – spiegelt sich nicht nur in der bibliographischen Unterscheidung, die wir unseren Studierenden in Proseminaren und Einführungskursen beizubringen gewohnt sind, der Unterscheidung nämlich zwischen Primär- und Sekundärliteratur. Sondern sie ist auch der Grund dafür, weshalb Bibliotheken, gut ausgestattete Bibliotheken mit reichhaltigen Beständen, großzügigen Arbeitsplatzangeboten und ausgedehnten Öffnungszeiten für die Geisteswissenschaften von nicht zu überschätzender (tatsächlich jedoch häufig genug schreiend unterschätzter) Bedeutung sind.

Die digitale Verwandlung von Texten in Daten mit der Funktion des Forschungs*gegenstandes* ist unter anderem deshalb so tiefgreifend, weil die in

10 Ibid, 155.

diesem Zusammenhang anzuwendende Methode des *Distant Reading* nach Moretti eine Bedingung von Wissen bilden soll. »[…] distance«, so der um keine wirkungsvolle Provokation verlegene Moretti, »[…] *is a condition of knowledge*: it allows you to focus on units that are much smaller or much larger than the text: devices, themes, tropes – or genres and systems.«[11] Sollte Moretti unter der »condition of knowledge« eine lediglich notwendige Bedingung für Wissen verstehen, so wäre das Verfahren des *Close Reading* als ergänzende Methode immerhin noch zugelassen. Sollte er darunter hingegen eine hinreichende Bedingung verstehen, dann wäre *Close Reading* verzichtbar, überflüssig. Und in der Tat scheint Letzteres gemeint zu sein, denn das Ausmaß der Entfernung vom Text verhält sich nach Moretti proportional zum Ausmaß des angestrebten Wissens über den Text: »[…] the ambition is now directly proportional *to the distance from the text*: the more ambitious the project, the greater must the distance be.«[12] Nach dem 1968 von Roland Barthes ausgerufenen Tod des Autors ist es nun also des selig verblichenen Autors Text, der verschwinden soll: »And if, between the very small and the very large, the text itself disappears, well, it is one of those cases where one can justifiably say, Less is more.«[13] Und mit dem Text verschwindet naturgemäß auch der Leser beziehungsweise die Leserin.

Die digitale Verwandlung von Texten in Daten unter ihrer Funktion als Forschungs*medium* hat zur Folge, dass die Ergebnisse, zu denen diese Daten verarbeitet werden, nicht mehr selbst als Texte, sondern diagrammatisch, in Gestalt von Visualisierungen, präsentiert werden können. Moretti spricht von »Graphs, Maps, Trees« – so ein bekannter Buchtitel[14] –, und auch hier lassen sich naturwissenschaftliche Anleihen beobachten, diesmal bei der Evolutionsbiologie und der Physik. »Cultural history«, so Moretti, »is made of trees *and* waves«[15], indem nämlich Baumdiagramme Differenzierungs- und Wellen beziehungsweise Kurven Vereinheitlichungsprozesse, Baumdiagram-

11 Ibid, 48 f.

12 Ibid, 48.

13 Ibid, 49. Vgl. 48: »[…] literary history quickly become very different from what it is now: it will become ›second hand‹: a patchwork of other people's research, *without a single direct textual reading.*«

14 Franco Moretti, *Graphs, Maps, Trees. Abstract Models for Literary History* (London: Verso Books, 2005).

15 Moretti, *Distant Reading,* 60.

me diskrete Entwicklungsschritte und Kurven Kontinua repräsentieren und diese beiden wiederum »the two mechanisms«[16] allgemeiner Art bilden sollen, aus deren (offenbar selbst nicht algorithmisierbarer?) Interaktion heraus sich die individuellen Einzelfälle ergeben. Das ist der Grund, aus dem Graphen die letztlich adäquate beziehungsweise maßgebliche Darstellungsweise abgeben sollen, wobei diese Graphen zugleich aufgrund ihrer Anschaulichkeit in der Lage sein sollen, ihrerseits sowohl neue Erkenntnisse[17] als auch weitere Fragestellungen zu generieren beziehungsweise Experimente zuzulassen.

DATEN UND ZEICHEN

Die Philosophin Sybille Krämer hat darauf aufmerksam gemacht, dass die Digitalisierung der Geisteswissenschaften das gemeinsame Fundament der »two cultures« freilege. »Denn die Zeichenpraktiken des Numerischen und des Alphabetischen«, so Krämer – also die Zeichenpraktiken der *Sciences* und der *Humanities* –

> »sind keineswegs Abkömmlinge einander fremder Planeten, vielmehr Mitglieder einer Familie. Mutterboden dieser Familienähnlichkeit ist der Schriftcharakter. Schriften sind diskrete Organisationsformen des Graphischen […]. […] sowohl die an Zahlen orientierten numerische Schriften wie die an Sprache orientierten alphabetischen Schriften [können] als Formen digitalisierbarer Symbolsysteme gelten. […] Alphanumerische Schriften sind nicht nur digitalisierbare Symbolsysteme, sondern sie sind digitale Systeme. Ihre Übersetzung

16 Ibid, 61.

17 Vgl. Sybille Krämer und Christina Ljungsberg, »Thinking and diagrams – An introduction«, in *Thinking with Diagrams. The Semiotic Basis of Human Cognition, h*g. Sybille Krämer, und Christina Ljungsberg, (Boston, Berlin: Walter de Gruyter, 2016), 1–19, hier 8: »Diagrams do not only represent knowledge but they can also create knowledge – in text/diagram syntheses. This presupposes a graphic as well constructive involvement with the diagram on the part of the reader/user. Often, the result is a flash-like insight. The visual arrangement of a figure shows something that is itself not contained and not even articulated in the constructive rules of the figure. Thus, an informative cognitively added surplus value emerges.«

> in ein Binäralphabet ist syntaktisch restlos und semantisch verlustlos möglich […].«[18]

In der Tat bietet sich der Zeichenbegriff, des Näheren der Peircesche Zeichenbegriff, an, um den Prozess der Transformation von Texten in Daten beziehungsweise die Ablösung des *Close Reading* durch das *Distant Reading* genauer zu beleuchten; und es sei hinzugefügt, dass auch Moretti selbst sich auf Peirce beruft,[19] der als Erster die kognitive Leistungsfähigkeit von Diagrammen beschrieb. Bringt man den Peirceschen Zeichenbegriff in Anschlag, so wird man allerdings möglicherweise zu einem anderen Ergebnis gelangen als Krämer (auch wenn diese sich ebenfalls auf Peirce bezieht), nämlich zu einem Ergebnis, das, wenngleich auf der Grundlage des Verbindenden, doch die Differenz zwischen den Zeichenpraxen der *Sciences* und der *Humanities* sowie zwischen *Distant Reading* und *Close Reading* in den Vordergrund rückt. Denn im Kontext menschlicher Verstehensprozesse, wie sie bisher für das geisteswissenschaftliche *Close Reading* typisch waren, kommt die Zeichenfunktion nicht allein dem zu, was wir vordergründig als Zeichen zu identifizieren gewohnt sind, nämlich den Schriftzeichen als solchen, das heißt den Buchstaben beziehungsweise Buchstabenfolgen. Vielmehr wird die Zeichenfunktion von einer *Vielzahl* schriftbezogener Phänomene ausgeübt, und dies noch dazu gleichzeitig. Als Zeichen können beispielsweise die ästhetischen Eigenschaften der Buchstaben fungieren, deren Farbe etwa, die Form (der Font), die Größe,

18 Sybille Krämer, »The Humanities going digital? Vom alphanumerischen Zeichenraum zum vernetzten Datenraum,« Abfrage vom 2. Mai 2018, http://digitalitaet-geisteswissenschaften.de/the-humanities-going-digital. – Ähnlich Sybille Krämer, »Der ›Stachel des Digitalen‹ – ein Anreiz zur Selbstreflexion in den Geisteswissenschaften?« [Abstract], in *Kritik der Digitalen Vernunft* (DHd 2018 Köln). 5. Tagung des Verbands Digital Humanities im deutschsprachigen Raum e. V. Konferenzabstracts, hg. v. Georg Vogeler, http:/dhd2018.uni-koeln.de, 2018, 17, hier ebd.: »Alle Geistes- und Kulturwissenschaften zielen darauf, etwas [,] das Texten, Bildern, Artefakten implizit ist, explizit zu machen – ob nun durch traditionelle Interpretation oder algorithmische Datenanalyse. Doch bereits diese Unterscheidung von ›Interpretation‹ und ›Datenanalyse‹ hinkt, denn es gibt weder rohe Daten noch material- und texturunabhängige Interpretationen. Doch wenn das so ist: Warum sollte eine maschinelle – im Idealfall statistisch-empirische – Auswertung großer Datenbestände die herkömmlichen geisteswissenschaftlichen Verfahrensweisen in neuem Licht erscheinen lassen?«

19 Vgl. Franco Moretti, *Atlas of the European Novel 1800–1900* (London: Verso Books, 1998), 4.

der Hintergrund, das Trägermaterial etc. Diese ästhetischen Eigenschaften wiederum können auf ganz unterschiedliche semiotische Objekte bezogen werden und dementsprechend ganz unterschiedliche Interpretationsresultate, sogenannte Interpretanten, generieren: Eine bestimmte Farbe mag einfach nur in Gestalt eines bestimmten durch sie ausgelösten emotionalen Zustands interpretiert werden; sie kann aber auch als Indiz für eine bestimmte Herkunft des Texts dienen oder sogar als gezielt eingesetzter symbolischer Bedeutungsträger wahrgenommen werden, der eine Botschaft transportieren soll. Als Zeichen können die Buchstaben beziehungsweise Buchstabenfolgen zugleich ebenso fungieren, indem sie semantisch oder operativ (synkategorematisch) verstanden werden und auf diese Weise in Begriffe und Funktionen als die Interpretanten übersetzt werden. Auch dabei können qualitativ verfasste (emotionsförmige) Nebenprodukte entstehen. Begriffsförmige Interpretanten wiederum können ihrerseits aufeinander bezogen werden, und zwar so, dass die einen dabei an die Zeichen-, die anderen an die Objektstelle treten und so neue Interpretanten generiert werden, die nun urteilsförmig ausfallen und auf diese Weise eine Positionierung des Interpretierenden in Gestalt von Ablehnung oder Zustimmung gegenüber der Aussage des Textes (wie vom Interpretierenden verstanden) darstellen. Solche Positionierungen sind es übrigens, die die systematischen Fächer – mein eigenes Fach, die Systematische Theologie eingeschlossen – methodisiert haben. In jedem Fall entstehen im Zusammenhang menschlicher Lesevorgänge aus der Vielzahl gleichzeitig ablaufender und ineinandergreifender Zeicheninterpretationsprozesse mitunter interessante Interdependenzen. So konnten empirische Studien zeigen, dass ein ungewohnter Font dazu beitragen kann, Inhalte besser im Gedächtnis zu behalten, oder dass in Begriffe übersetzte Ausdrücke zumeist auch emotional bewertet werden. Diese wenigen Andeutungen müssen reichen, um der These Nachdruck zu verleihen, dass menschliche Lesevorgänge als vieldimensionale, vernetzte und nicht restlos steuer- beziehungsweise kontrollierbare sowie hochgradig individuelle Prozesse zu gelten haben: Sie sind emotional besetzt und sie münden in Positionierungen.

Was geschieht demgegenüber beim *Distant Reading*? Zum einen reduziert *Distant Reading* in radikaler Weise die Komplexität menschlicher Lesevorgänge, indem es alles Emotionale, Spontane und damit auch die Interdependenzen zwischen gleichzeitig ablaufenden Interpretationsprozessen ausklammert und stattdessen Lesen gezielt als einen algorithmisierbaren Dekodierungsvorgang modelliert. Damit hängt zusammen, dass im *Distant Reading* Zeichen zwar verlust-, aber auch mehrwertfrei in äquivalente Interpretanten übersetzt werden können, während *Close Reading* durch die Differenz zwischen Zeichen und Interpretanten gekennzeichnet ist: Die Interpretanten besagen in beinahe allen Fällen (bis auf den Fall der *Deducent Signs*) stets mehr und anderes als die Zeichen, die sie verarbeiten. Zum anderen erzeugt *Distant Reading* neue semiotische Objekte. Denn *Distant Reading* stellt einzelne Texte zu Textkorpora zusammen, um in diesen Textkorpora allgemeine Formen (z. B. Lemmata) ausfindig zu machen, über die sodann Aussagen getroffen werden, indem als Zeichen die Zahl der Einzelfälle herangezogen wird: Von einem bestimmten Schema (z. B. dem Yeats-Zitat »things fall apart«) gilt, dass es da und da (z. B. in den britischen Tageszeitungen der Jahre 2015 bis 2017) so und so oft auftritt. Das heißt: Die Gegenstände oder die Anwendungsgebiete des *Distant Reading* sind nicht mit den Gegenständen oder den Anwendungsgebieten des *Close Reading* identisch. *Distant Reading* macht zu Objekten Muster, die als solche erst durch einen Abgleich verschiedener Texte identifiziert werden müssen. Die Zeichen, die auf jene Objekte bezogen werden, sind letztlich numerische Fälle, und die daraus entstehenden Interpretanten können als Zeichen für andere, textferne Objekte herangezogen werden (z. B. für die öffentliche Wahrnehmung des Brexits in den Jahren 2015 bis 2017). Die damit einhergehende Entsemantisierung des (ehemaligen) Textes wird von Moretti nicht nur eingeräumt, sondern sogar zum Programm erhoben, indem die Diltheysche Unterscheidung zwischen geisteswissenschaftlichem Verstehen und naturwissenschaftlichem Erklären herangezogen wird, um die Digital Humanities nun dem Erklären und damit den Naturwissenschaften zuzuordnen: »Where as interpretation relates meaning to meaning, for explanation meaning is only half of the story. In Ricœur's paradigmatic example (Freud's *Traumdeutung*), to explain a text implies a movement *outside* the semantic sphere […].«[20]

> »We do not need more interpretation […], not because they have nothing to say, but because, by and large, they have already said what

20 Moretti, *Distant Reading*, 153.

> they had to. A lot of good work has been done on the relation between meaning and meaning; far too little on meanings and forces.«[21]

FOLGEN

Was wären die Konsequenzen, denen sich die Theologie aufgrund eines wachsenden Einflusses der Digital Humanities ausgesetzt sähe? Dazu elf kurze Thesen beziehungsweise Fragen:

1. Zunächst lassen die Digital Humanities eine Veränderung von Forschungsperspektiven in den historisch arbeitenden Fächern erwarten, sowohl, was die Beendigung bestehender, als auch, was die Eröffnung neuer Debatten betrifft. Zum Beispiel: Von der Anwendung statistischer Methoden auf stilometrische Forschungsgegenstände ließe sich etwa erhoffen, dass literarkritische Probleme einer zuverlässigen Lösung zugeführt würden, anstatt dass, plakativ gesagt, zehn verschiedene Kommentare zehn verschiedene Vorschläge zur Quellenscheidung unterbreiteten, alle im gleichen Brustton der Überzeugung vorgetragen. Die Zusammenschau biblischer Texte mit einer Fülle weiterer antiker Literatur, keineswegs nur aus dem hellenistischen Raum, könnte wiederum zu detaillierten Vergleichen und zur Erschließung neuer Zusammenhänge führen.
2. Für Theologen und Theologinnen und im Zusammenhang mit dieser Tagung mag die Beobachtung zunächst nicht uninteressant sein, dass Moretti seine Position mit der Polemik gegen eine in seinen Augen offenbar theologisierte Literaturwissenschaft, wie man vielleicht sagen könnte, verbindet. Denn *Distant Reading* erweitert nicht nur die Datenbasis, sondern egalisiert sie auch, das heißt verwischt qualitative Differenzen und stemmt sich so gegen die Idee eines Kanons vorzugswürdiger (z. B. »heiliger«) Texte:

   > »[…] if you want to look beyond the canon […], close reading will not do it. It's not designed to do it, it's designed to do the opposite.

21 Ibid, 154.

At bottom, it's a theological exercise – very solemn treatment of very few texts taken very seriously – whereas what we really need is a little pact with the devil: we know how to read texts, now let's learn how not to read them.«[22]

Sophokles-Dramen sind aus dieser Sicht genauso viel oder wenig »wert« wie Mickey Mouse, Shakespeare genauso viel oder wenig wie Rosamunde Pilcher, und Kant genauso viel oder wenig wie Richard David Precht. Obwohl völlig unstrittig ist, dass auf diese Weise wertvolle kulturgeschichtliche bzw. alltagskulturelle Erkenntnisse gewonnen werden können, dürfte auch Nicht-Theologen und -Theologinnen der Gedanke einer vollständigen Verbannung des Normativen zugunsten der Alleinherrschaft des Deskriptiven, des Qualitativen zugunsten des Quantitativen, des Kriteriums der argumentativen Sachhaltigkeit zugunsten des Kriteriums der medialen Reichweite nicht vollständig geheuer sein.

3. Die Texte, an denen im Sinne der Digital Humanities gearbeitet wird, werden gewissermaßen positiviert: Sie werden vorgefunden, so wie Gesteinsformationen, Wolfspopulationen oder Sumpfgas vorgefunden werden. Auf diese Weise wird eine deutliche Grenzlinie zwischen dem Forscher und seinem Forschungsgegenstand gezogen: Der Forschungsgegenstand wird objektiviert. Das bedeutet erstens, dass ein *affektives* Verhältnis zum Forschungsgegenstand an Bedeutung verliert. Man muss beispielsweise das Neue Testament, plakativ gesagt, nicht *mögen*, um am Neuen Testament *Distant Reading* betreiben zu können. Zweitens bedeutet es, dass ein *normatives* oder *evaluatives* Verhältnis zum Forschungsgegenstand an Bedeutung verliert. Man muss an die Botschaft des Neuen Testaments nicht *glauben*, um am Neuen Testament *Distant Reading* betreiben zu können. Faktisch gilt dies nicht für das *Distant Reading*, sondern hat auch auf das *Close Reading* schon immer zugetroffen. Doch eine *programmatische* Berücksichtigung dieser Einsicht könnte zu institutionellen Erschütterungen der theologischen Fakultäten führen, an die bislang nur berufen wird, wer Mitglied einer Religionsgemeinschaft ist

22 Ibid, 48. Vgl. auch 88: »[...] ›explaining‹ means organizing the evidence we have so as to account for a given result: it doesn't mean maintaining that that result was inevitable. That's not history; that's theodicy.«

und gegebenenfalls so die Fiktion aufrechterhalten kann, er habe sich innerlich gebunden.

4. Wenn Arbeitsprozesse zu sehr rationalisiert werden, verlieren sie ihr innovatorisches und kreatives Potential. Die Effektivität des *Distant Reading*, das nur dasjenige findet und finden kann, was ihm in Form entsprechender Programmierung zu finden aufgetragen war, führt dazu, dass die zufälligen Funde, die Funde im Vorbeigehen, die nebensächlichen Funde, die so wichtige Anregungen für künftige Forschungsfragen bieten können, unterbleiben.
5. Indem die Digital Humanities Texte nicht aus einer systematischen beziehungsweise semantisch-normativen, sondern aus einer streng historischen Perspektive untersuchen, setzen sie mit zunehmendem Einfluss die systematischen Fächer unter Druck und verstärken innerhalb der Theologie die ohnehin bereits bestehenden Fliehkräfte, welche die systematisch und die historisch arbeitenden Fächer auseinandertreiben.
6. Indem das *Distant Reading* auf statistisch abgesicherte Verfahren und überprüfbare Hypothesen setzt, erlaubt es den Digital Humanities, mit dem Anspruch eines mehr oder weniger linear verlaufenden Erkenntnisfortschritts aufzutreten, der das zeitlich Spätere, das heißt das jüngere Forschungsergebnis, besser oder zuverlässiger als das zeitlich Frühere, das heißt das ältere Forschungsergebnis, erscheinen lässt. Das zeitlich Frühere findet dann bestenfalls noch das Interesse der Wissenschaftshistoriker. Das widerspricht der Lesepraxis der systematischen Fächer, die das Spätere keineswegs immer dem Früheren vorziehen müssen, sondern die sich an argumentativer Wertigkeit und an Diskussionszusammenhängen orientieren.
7. Der Algorithmisierbarkeitsanspruch, den die Digital Humanities an die geisteswissenschaftliche Arbeit stellen, führt dazu, dass Geisteswissenschaftler und Geisteswissenschaftlerinnen im herkömmlichen Sinne dann, wenn sie dem Vorwurf der Beliebigkeit und der mangelnden Kontrollierbarkeit entgehen möchten, sich fragen lassen müssen, was sie eigentlich tun, wenn sie forschen: Welche Begriffe wählen sie, und welche Denkoperationen führen sie aus? Mit anderen Worten: Die Digital Humanities zwingen die Geisteswissenschaften zu einer – durchaus wohltuenden – methodologischen Selbstverständigung. »[D]as, was wir denkendes Argumentieren nennen«, so die Philosophin Petra Gehring,

»[gerät] auf den Prüfstand – und mehr noch werden unsere Erwartungen an die für eine solche Prüfung für adäquat gehaltenen Methoden geprüft: Fülle und Form technogener Entscheidungszwänge fordern auf raffinierte Weise ein Explizitmachen des Impliziten heraus. Digitalität gleicht so einem Nadelöhr, durch das man Forschungspraxen – auch solche der Philosophie – treiben kann, um sie besser zu verstehen.«[23]

8. Der ehemalige Gelehrte der Geisteswissenschaften wird im Zusammenhang der Digital Humanities zum Techniker, der Methoden so anwendet, wie sie jeder andere auch anwenden könnte oder würde, der demzufolge reproduzier- und standardisierbare Ergebnisse hervorbringt, der als Forscher ersetzbar ist und der im Kollektiv arbeitet. Das wird etwa auf der Homepage des Stanford Literary Lab ausgesprochen, auf der es heißt: »At the Lab, all research is collaborative, even when the outcome ends up having a single author. We hold frequent group meetings to evaluate the progress of the experiments, the status of existing hypotheses, and the promise (and problems …) of future developments.« Der einzelnen mehr oder auch weniger genialisch begabten Persönlichkeit, die in ihrer Kammer ein künstlerisches Verständnis für den Text entwickelt beziehungsweise sich in den Text einfühlt, wie das 19. Jahrhundert es sich vorstellte, machen die Digital Humanities endgültig den Garaus – damit aber auch den individuellen Verstehenshorizonten, den unerwarteten Verknüpfungen, den intelligenten Assoziationen etc.
9. Dort, wo sich noch *Close Reading* ereignet, scheint das *Close Reading* im digitalen Medium weniger erfolgreich zu sein als eines, das sich der Printmedien bedient, wie die Leseforschung zeigt. Historisch betrachtet hat jeder Medienwechsel auch neue Lesetechniken erzeugt, weil die Materialeigenschaften das Spektrum der Verwendungsmöglichkeiten abstecken: Vor allem der in der Spätantike erfolgende Wechsel von der Schriftrolle zum Kodex war einschneidend, weil der Kodex es gestattete, verschiedene Texte physisch so zusammenzubinden, dass eine fixierte, dauerhafte Verbindung zwischen ihnen hergestellt wurde. Das digitale Medium bietet, dies ist völlig unstrittig, die vorteilhafte Innovation, dass per Verlinkung

23 Petra Gehring, »Digitalisierung, Digitalisate und Digitalität von Forschungsprozessen: Wo findet sich die Philosophie?« (Konzeptpapier zu: Digitalität. Theorien und Praktiken des Digitalen in den Geisteswissenschaften), Abfrage vom 4. Mai 2018, https://digigeist.hypotheses.org/138.

etliche weitere Textebenen beziehungsweise Zusatztexte (Hypertexte) sichtbar gemacht und auf diese Weise vielfältige Kontexte erschlossen werden können. Zugleich allerdings ist das Lesen am Bildschirm neuartigen Herausforderungen ausgesetzt: Hyperlinks stellen vor die ständige Entscheidung, sie zu ignorieren oder nicht, und produzieren so eine höhere kognitive Last; farbig unterlegte Textteile lenken ab und verkürzen die Aufmerksamkeitsspanne;[24] Scrollen scheint das Verstehen zu behindern;[25] E-Readers erzeugen haptische Dissonanz, indem ihre physischen Qualitäten nicht den an den Text gerichteten Erwartungen beziehungsweise nicht den Erfahrungen mit dem Text entsprechen,[26] und hindern offenbar am Zurückblättern;[27] und daneben verlockt das Internet beständig dazu, ins Web abzudriften. Kurz: »[…] the physicality of a text is important for comprehension […].«[28] »[…] the findings suggest that medium type matters in comprehension […]. […] although participants read more quickly in digital medium, it led to a shallower processing of the text. In effect, under these circumstances, medium type plays a more significant role in comprehension outcomes.«[29] »[…] students who read texts in print scored significantly better on the reading comprehension

24 Vgl. M. Julee Tanner, »Digital vs. print: Reading comprehension and the future of the book,« *SLIS Student Research Journal* 4/2 (2014): 1–12, hier 5 f.

25 Vgl. Lauren M. Singer und Patricia A. Alexander, »Reading on Paper and Digitally: What the Past Decades of Empirical Research Reveal«, *Review of Educational Research* 87/6 (Dez. 2017): 1007–1041, hier 1034; Christopher A. Sanchez und Jennifer Wiley, »To Scroll or Not to Scroll: Scrolling, Working Memory Capacity, and Comprehending Complex Texts,« *Human Factors* 51/5 (Okt. 2009): 730–738, hier 734. 737; Anne Mangen, Bente R. Walgermo, und Kolbjørn Brønnick, »Reading linear texts on paper versus computer screen: Effects on reading comprehension,« *International Journal of Educational Research* 58 (2013): 61–68, hier 65.

26 Tanner, *Digital vs. print:* »In the case of e-books, this would translate to an expectation that a book should have bound, turnable, paper pages; a heft and thickness that reflects its length; a cover and binding with a non-technical feel that reflect its quality and durability; and a condition of use that reflects its age. Indeed, these were among the many physical qualities that a group of avid readers reportedly missed in their experience of the e-reader platform. Other comments made by the e-reader test group were that the e-reader felt ›artificial‹, ›disturbing‹, and ›distant‹ […].«

27 Vgl. Ibid, 8 f.

28 Vgl. Ibid, 5.

29 Singer, Alexander, Reading on Paper and Digitally, 1034.

test than students who read the texts digitally.«[30] »[…] even so-called digital natives are more likely to recall the gist of a story when they read it on paper because enhanced e-books and e-readers themselves are too distracting. Paper's greatest strength may be its simplicity.«[31] Diese Voten decken sich mit den Erfahrungen, die man an der Deutschen Nationalbibliothek vor einiger Zeit sammelte, als man versuchte, am Frankfurter Standort die Regelung durchzusetzen, dass bei doppeltem Versionenangebot, analog und digital, standardmäßig die digitale Version an den Hausrechnern der Bibliothek zu lesen und die analoge Version nur noch mit besonderer Begründung erhältlich sei, um die Buchbestände zu schonen. Der Proteststurm tobte zuletzt bundesweit durch die Zeitungen und veranlasste die Bibliothek schließlich dazu, die Regelung abzuändern. Eine mündliche Nachfrage ergab, dass in circa 85 % der Fälle das gedruckte Buch der digitalen Version vorgezogen wird, und zwar unabhängig vom Alter der Leser und Leserinnen. Es scheint, als sei das, was der kanadische Journalist David Sax die »Rache des Analogen«[32] genannt hat, im vollen Gange.

10. Geisteswissenschaften haben, ob implizit oder explizit, stets auch Gegenwartsdiagnose und Gegenwartskritik betrieben und zwar mit Hilfe von Begriffen. Begriffe sind die genuinen Produkte der Geisteswissenschaften und zugleich ihre Werkzeuge: Sie strukturieren die Erfahrungswirklichkeit. Geisteswissenschaftliche Begriffe beziehen sich allerdings in der Regel nicht auf Gegenstände, die empirisch so eindeutig abgrenzbar und auffindbar wären wie Gegenstände der natürlichen Welt – beispielsweise Gänseblümchen oder Blutgefäße. Vielmehr haben sie oft genug kommunikativen und normativen Charakter: Menschenwürde etwa »gibt« es nur, wenn und sofern die Mitglieder einer Gemeinschaft sich auf deren Anerkennung verpflichten. Lassen die Digital Humanities, die sich ja als ausschließlich deskriptiv arbeitend verstehen, dieses Projekt der Kritik fallen – und woher wollen sie, wenn sie es nicht fallen lassen, die Maßstäbe ihrer

30 Mangen, Walgermo, Kolbjørn Brønnick, *Reading linear texts on paper versus computer screen,* 61.

31 Ferris Jabr, »Why the Brain Prefers Paper,« *Scientific American* (2013/11): 48–53, hier 48.

32 David Sax, *Die Rache des Analogen. Warum wir uns nach realen Dingen sehnen. Aus dem kanadischen Englisch von Pauline Kurbasik*, 2. Aufl. (Salzburg, Wien: Residenz Verlag, 2017).

Kritik beziehen? Diese Frage stellt sich zumal in einer Zeit, in der autoritäre Systeme auf dem Vormarsch sind und staatliche, wirtschaftliche und gesellschaftliche Kontrollmechanismen allerorten ausgedehnt werden.

11. Unverkennbar sind die Digital Humanities keine Hilfswissenschaften mehr: Dazu ist ihr technisches Instrumentarium bereits zu ausgeklügelt, ist die mit ihnen verbundene Expertise zu weit vorangeschritten und sind ihre Fragestellungen zu differenziert. Die weitere Entwicklung wird zeigen, ob sie die herkömmlichen Geisteswissenschaften ablösen wollen und werden, ob sie sich in diese integrieren lassen können oder ob sie neben sie treten werden so wie Geschichte, Philologie etc. einst neben die Theologie traten. Aber gerade weil die Digital Humanities keine bloßen Hilfswissenschaften mehr sind, ergibt sich umso dringender die Notwendigkeit, die Algorithmen, mit denen sie arbeiten, und die Ontologien, die sie voraussetzen, explizit zu machen und gegebenfalls der Kritik zu unterziehen, denn, so Kathrin Braungardt, eine Wissenschaftsdidaktikerin an der Ruhr-Universität Bochum: »[…] Nutzer*innen oder Lerner*innen [haben] mehr Möglichkeiten […], sich Wissen anzueignen, aber auch gleichzeitig [werden] Rahmenbedingungen intransparenter und wenig beeinflussbar […].«[33] Darum gilt, wie der Literaturwissenschaftler Gerhard Lauer konstatiert:

> »Für die digitale Modernisierung der Geisteswissenschaften ist die Kritik der Methoden und der Theorien immer auch eine algorithmische Kritik, eine Kritik der in Anschlag gebrachten rechnenden Verfahren […]. Die neuen Verfahren werden schließlich nicht von Rechenmaschinen entwickelt, und sie ergeben sich auch nicht aus dem Material selbst. Womit kann man den Abstand zwischen Texten besser messen, mit Burrows Delta oder dem Euklidischen? Welche phylometrische Methode aus der Biologie ist am besten geeignet, um stammesgeschichtliche, langfristige kulturelle Trends aufzuzeigen? Welche Vorteile bietet das SplitsTree-Verfahren gegenüber Dendro-

33 »Digitalisierungsprozesse zwischen Anpassung und Kritik – Überlegungen zu digitalisierungskritischen Praktiken in der Hochschule,« in *Digitale Transformation im Diskurs. Kritische Perspektiven auf Entwicklungen und Tendenzen im Zeitalter des Digitalen, deposit_hagen,* hg. Christian Leineweber, und Claudia de Witt (Fernuniversität in Hagen, Publikationsserver der Universitätsbibliothek, 2018), 179–196, hier 192.

grammen, wenn kulturelle Verwandtschaften dargestellt werden sollen?«[34]

AUSBLICK

Den weiteren Horizont der Digital Humanities bildet letztlich die KI-Forschung, die in einem rapiden Tempo Fortschritte verzeichnen kann. AlphaGo Zero war offenbar in der Lage, sich anhand weniger Anfangsdaten das Go-Spielen beizubringen, motorische beziehungsweise physische Tätigkeiten wie Autofahren sind dabei, durch automatisierte Prozesse abgelöst zu werden, Expertentätigkeiten wie das Erstellen medizinischer Diagnosen oder die Beratung in Steuerfragen sollen künftig von Computern ausgeführt werden können und es zeichnet sich ab, dass dasselbe sogar für kreative Prozesse wie das Malen von Bildern und die Abfassung von literarischen Texten, von Drehbüchern[35] etc. eintreten kann. Wäre es also vorstellbar, dass sich auch geisteswissenschaftliche Forschungstätigkeiten automatisieren lassen, und zwar nicht

34 Gerhard Lauer, »Die digitale Vermessung der Kultur. Geisteswissenschaften als Digital Humanities,« in *Big Data. Das neue Versprechen der Allwissenheit,* hg. Heinrich Geiselberger (Berlin: Suhrkamp [editionunseld], 2013), 99–116, hier 112.

35 Dem Informatiker Ross Goodwin gelang es 2016, mit einem Drehbuch, das von dem durch ihn programmierten künstlichen Autor Benjamin verfasst worden war, unter die ersten zehn Preisträger eines Filmwettbewerbs aufgenommen zu werden, Abfrage vom 2. März 2018, https://medium.com/artists-and-machine-intelligence/adventures-in-narrated-reality-part-ii-dc585af054cb: »To call the film […] surreal would be a dramatic understatement. Watching it for the first time, I almost couldn't believe what I was seeing – actors taking something without any objective meaning, and breathing semantic life into it with their emotion, inflection, and movement. After further consideration, I realized that actors do this all the time. Take any obscure line of Shakespearean dialogue and consider that 99.5% of the audience who hears that line in 2016 would not understand its meaning if they read it in on paper. However, in a play, they do understand it based on its context and the actor's delivery. As Modern English speakers, when we watch Shakespeare, we rely on actors to imbue the dialogue with meaning. And that's exactly what happened in Sunspring, because the script itself has no objective meaning. On watching the film, many of my friends did not realize that the action descriptions as well as the dialogue were computer generated. After examining the output from the computer, the production team made an effort to choose only action descriptions that realistically could be filmed, although the sequences themselves remained bizarre and surreal. The actors and production team's interpretations and realizations of the computer's descriptions was a fascinating case of human-machine collaboration.«

nur in Gestalt der Antworten, sondern auch in Gestalt der Fragen? Wäre es vorstellbar, dass eine KI in der Lage wäre, Interpretationsketten selbsttätig so zu organisieren, dass ein Forschungsprozess dadurch vorangetrieben würde?

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ON THE FUTURE OF TEACHING IN DIGITIZED ENVIRONMENTS

DANIEL PAULING/ANJA SWIDSINSKI

INTRODUCTION

Two developments have significantly changed university education in recent years. Firstly, there is a *general shift towards digital* data and computer aided research methodology. This volume is to reflect to what extent this development has already influenced the field of New Testament Studies. However, doubt remains whether the use of digital technology is indeed a game-changer. Many digital tools are simply digital copies of established methods for information retrieval, annotation, communication or edition.

Secondly, the *shift from teaching to learning*[1] has profoundly changed university education and its methodology. Education is no longer seen as the art of instruction, i.e. the transmission of knowledge from teachers to learners. Instead, students are considered active constructors of knowledge and competence. Accordingly, the role of teachers is not to provide instruction but to create learning scenarios that initiate and facilitate students' acquisition of knowledge and competence. Other than an instructive approach according to which instructors preselect contents to be transmitted to their students, the constructivist approach entails awareness and close observation of the mental operations involved in students' learning.

This paper combines these two fields of innovation and explores their impact on the future of teaching New Testament Studies. Our guiding research question is: What learning outcomes can be achieved by incorporating digital

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1 This is not only a general movement in university education but already implemented in various specific fields. Cf. for the field of NT Studies e.g. Oliver Reis, and Monika Scheidler. »Der ›Shift from Teaching to Learning‹ als Anliegen der Theologiedidaktik,« in *Vom Lehren zum Lernen. Didaktische Wende in der Theologie?*, ed. Monika Scheidler, and Oliver Reis (Zürich, Münster: LIT, 2008), 5–18; Richard S. Ascough, »Learning (About) Outcomes. How the Focus on Assessment Can Help Overall Course Design,« *Canadian Journal of Higher Education/Revue canadienne d'enseignement supérieur* 41 (2) (2011): 44–61.

methods into the teaching of New Testament Studies? As a secondary research issue, we will discuss in how far the examples of digital methodology discussed here produce other learning outcomes than established analogue learning scenarios as used in the field of New Testament Studies. We focus on three teaching scenarios tried and tested at Dresden Technical University.[2]

The authors of this paper provide an experienced yet interdisciplinary view from outside the field (namely from Higher Education Didactics, Literary Studies, and Classics) which helps to pinpoint the specifics of teaching New Testament Studies in an increasingly digitised world.

DECODING THE DISCIPLINES

Digital Humanities are a *hybrid entity*. On the one hand, they are *subject, i.e. area of research*. On the other hand, they can be described as a *paradigm shift* in any field of studies throughout humanities.[3] As in other disciplines, this paradigmatic shift *challenges* every teacher of New Testament Studies because in most cases they have not grown up as digital natives, and the digital realm was of little significance in their own education. Therefore, they have little prior experience with digital tools or methodology. In the increasingly digital realm of academia, however, they are required to reflect the impact of digital

2 We focus on the following three seminars. 1.) A seminar on Textual Criticism which was held at the Institute for Protestant Theology by Matthias Klinghardt in summer term 2017. 2.) An exegesis seminar at the Institute for Protestant Theology by Jan Heilmann in winter term 2015/16. 3.) An introductory seminar to programming for linguists held at the Institute for Applied Linguistics by Joachim Scharloth in summer term 2017. In these seminars we took part not as teachers but as observers and counsellors. Our discussion of the teaching scenarios is based upon field notes from classroom observations, teaching materials and scripts, as well as evaluative interviews with teachers and students. We use examples from real life classrooms, not from distance learning via MOOCs or similar methods. On the matter of distance learning Richard S. Ascough, »Designing for Online Distance Education. Putting Pedagogy Before Technology,« *Teaching Theology and Religion* 5 (1) (2002): 17–29. Richard S. Ascough, »Welcoming Design. Hosting a Hospitable Online Course,« *Teaching Theology and Religion* 10 (3) (2007): 131–136.

3 Patrick Sahle, »Digital Humanities und die Fächer. Eine schwierige Beziehung?,« In *Digital Humanities*, ed. Stefan Fischer, and Thomas Wagner (Tübingen: Narr Francke Attempto, 2017), 7–28.

tools on their respective field of study, use digital methodology in teaching, and enable students to learn in a digital environment.[4]

Digital tools, however, are not necessarily innovative per se. Much of the digital infrastructure that has replaced elder, analogue tools is just a digital substitute that does not necessarily imply radically new ways of thinking or teaching. Online library catalogues may provide faster and easier access than the card catalogue cabinets that used to be the heart of every library. Yet, their function is basically the same. The same holds true for online databases that have replaced printed volumes.

Other tools have indeed provoked changes that are more substantial. Wikis allow collaborative writing in a way that would be difficult to realize with pen and paper. Also, analytic tools and query languages allow significantly more detailed evaluation of big corpora. Both kinds of digital tools, however, are relatively new or unfamiliar to New Testament scholars. *This is an asset from a didactic perspective because it potentially helps uncovering the mental tasks to be performed by New Testament scholars.* In a constructivist approach to teaching knowledge about these mental tasks is essential in order to successfully plan didactic interventions.

Because of the unfamiliarity caused by digitisation teachers of all disciplines are forced to abandon established routines. The implementation of new digital tools disrupts the ordinary and can be used to identify mental operations that would otherwise be subconscious. According to Middendorf's, Miller's and Pace's concept of »decoding the disciplines« uncovering mental tasks needed to solve problems in any field of study is a substantial step necessary to facilitate students' learning.[5]

A thorough look into which mental operations are involved in the application of digital tools on New Testament Studies allows teachers to better understand which of these competences are used when performing in their

4 For an overview on e-learning tools see Patricia Arnold, Kilian Lars, Anne Maria Thillosen, and Gerhard M. Zimmer. *Handbuch E-Learning. Lehren und Lernen mit digitalen Medien* (Bielefeld: W. Bertelsmann Verlag, 2018).

5 Joan Middendorf, Janice Miller-Young, and David Pace. »Decoding the Disciplines. Improving Student Learning,« accessed July 30, 2019, http://decodingthedisciplines.org/. A rich bibliography on the topic is to be found at decodingthedisciplines.org/bibliography/, last viewed July 23, 2019.

field. On this basis they can decide what their students really need to practice and plan successful learning scenarios.

All in all, our analysis will show that while digital tools do enable novel ways of teaching, a substantial part of digital technology is only a faster and more accessible substitute for well-established instruments within the discipline. Both outcomes, however, slow down established routines in New Testament Studies and therefore help to uncover which competences are used and practiced by New Testament scholars. Knowledge about these mental operations in turn are the essential input to a constructivist approach to education as reflected in the shift from teaching to learning.

THE SHIFT FROM TEACHING TO LEARNING

Parallel to the growing importance of digitisation in teaching, another paradigmatic shift has deeply changed university education: the shift from teaching to learning, first described by Barr and Tagg in 1995. In their view, institutions of higher education used to focus on what is called an »objectivist«[6] or »instruction paradigm«[7], i.e. the »transfer [of] knowledge from faculty to student«[8]. In such a setting, teaching is predominantly preoccupied with questions such as which topics to teach and how to transmit knowledge from teacher to student.[9]

They, however, detect a novel approach in higher education which they describe as the »*learning paradigm*«[10]. According to this, students are at the centre stage of attention and »a college is an institution that exists to produce learning«[11] in students. Main goal of higher education is to »elicit student discovery and construction of knowledge.«[12] Knowledge cannot be transferred to students but must be optimally fitted to their cognitive capacities and

6 Biggs, »Enhancing Teaching Through Constructive Alignment,« 347 f.

7 Barr and Tagg, »From Teaching to Learning,« 16.

8 Ibid.

9 Reis and Scheidler, »Der ›Shift from Teaching to Learning,‹« 7 f., on Johannes Wildt's triangle of Higher Education as adopted to Theology.

10 Barr and Tagg, »From Teaching to Learning,« 16.

11 Ibid, 13.

12 Ibid, 16.

needs.[13] As a consequence, learning is not the passive reception of knowledge but a construction of knowledge.

A constructivist approach to teaching has proven to influence students' *intrinsic motivation*. Reportedly, students found it highly motivating to come into close contact with the digital foundations of New Testament Studies.[14] Where this was successful, it was achieved by giving students an opportunity to learn in highly experimental and exploratory ways. It was unsuccessful when students were confronted with high amounts of information to be transferred rather passively.[15] Obviously, traditional lecturing is not helpful because students simply cannot comprehend nor utilize the technical information until they can experiment with it themselves. The reason for this is simple: Students of the humanities usually lack the mental frame set to contextualize information on computer sciences and programming because it usually plays no role in their training.

In the light of the paradigmatic shift from teaching to learning it becomes clear that teaching digitisation entails two aspects. Firstly, teachers of New Testament Studies need to gain knowledge about the impact of digitisation on their field[16]. Has digitisation indeed changed the way New Testament Studies are conducted or has it only transferred traditional practice of the field into the digital realm?

Secondly, and more importantly for the aim of this paper, however, teachers need to determine what kind of learning they want to induce in their students and define clear learning objectives.[17]

LEARNING OUTCOMES

If the use of digital tools has changed the mental operations needed to successfully perform in New Testament Studies, then clearly the desired learning

13 Reis and Scheidler, »Der ›Shift from Teaching to Learning,‹« 7 f.

14 Künzl and Wegscheider, »Faszination Digital Humanities«.

15 Munson, »Natural Language Processing,« 88 f.

16 Cf. in addition to the papers presented in this volume, e.g. Clivaz et al.

17 Scheidler and Reis, *Vom Lehren zum Lernen,* and Ascough, »Designing for Online Distance Education« with the same recommendation for the field of New Testament Studies in general.

outcomes of teaching New Testament Studies would need to be adjusted in consequence.

Constructivist theories of education emphasize »that learners arrive at meaning by actively selecting, and cumulatively constructing, their own knowledge, through both individual and social activity.«[18] Learning objectives are therefore not defined in terms of textbook knowledge to be transferred to students but in terms of student performance indicating that a specific competence has been acquired.

Taxonomies of learning outcomes vary in gradation as well as components. Bloom's »original Taxonomy provide[s] carefully developed definitions for […] six major categories in the cognitive domain [i.e.] Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. With the exception of Application, each of these was broken into subcategories.«[19] Dee Fink's Taxonomy of Significant Learning lists six categories: Foundational Knowledge, Application, Integration, Human Dimension, Caring and Learning How to Learn[20]. It is obvious that both taxonomies focus on much more than the acquisition of knowledge. They are representative for a broader approach to learning.

This approach is not limited to academic debate about teaching and learning. It has already been implemented in official documents that guide university politics as reflected by the EU's TUNING-Project or Germany's Standing Conference of the Ministers of Education and Cultural Affairs of the Länder (»KMK«). TUNING is a project that attempted to apply the political objectives of the Bologna Process to higher education. It distinguishes instrumental competences, interpersonal competences and systemic competences[21]. These competences have been adopted by Germany's Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in

18 Biggs, »Enhancing Teaching Through Constructive Alignment,« 348.

19 Krathwohl, »A Revision of Bloom's Taxonomy.«

20 Fink, »A Self-Directed Guide to Designing Courses,« 9.

21 »Instrumental competences: cognitive abilities, methodological abilities, technological abilities and linguistic abilities; Interpersonal competences: individual abilities like social skills (social interaction and co-operation); Systemic competences: abilities and skills concerning whole systems (combination of understanding, sensibility and knowledge; prior acquisition of instrumental and interpersonal competences required).« http://www.unideusto.org/tuningeu/images/stories/documents/General_Brochure_final_version.pdf, 9.

their Framework for Qualifications in Higher Education.[22] Since the teaching scenarios we are working with in this paper stem from a German context, the KMK's taxonomy will be our point of reference. It is meant to be the guiding principle for higher education in Germany:

Fachkompetenz, i.e. *professional competence* includes knowledge and understanding (Wissen und Verstehen).[23] Methodenkompetenz, i.e. *methodological competence* includes the application of knowledge as well as the creation of new knowledge (Einsatz, Anwendung und Erzeugung von Wissen)[24], Selbstkompetenz, i.e. *personal competence* encompasses a scientific as well as professional attitude (Wissenschaftliches Selbstverständnis/Professionalität)[25], and Sozialkompetenz, i.e. *social competence* implies skills in communication and cooperation (Kommunikation und Kooperation)[26].

The guiding question of this paper is to determine which kinds of student learning are elicited by the use of digital teaching scenarios. Our data shows that all of the four competences discussed above can be fostered by a teaching style employing digital methodology. In order to achieve this, however, it is not enough to superficially add the use of digital tools to established teaching scenarios. Instead, it is necessary to incorporate them into their design.

CONSTRUCTIVE ALIGNMENT

Once educators have analysed the competences necessary for successful scientific practice in their field and decided on which of these to focus in a particular teaching scenario it is easy to fall into the trap of adding digital technology as a fashionable ornament or even a burden to teaching scenarios that would function without it: »Attempts to enhance teaching need to address the system as a whole, not simply add ›good‹ components, such as a new curriculum or methods.«[27]

22 »Kultusminister Konferenz,« 2017. Qualifikationsrahmen für deutsche Hochschulabschlüsse, accessed July 30, 2019, https://www.kmk.org/fileadmin/Dateien/veroeffentlichungen_beschluesse/2017/2017_02_16-Qualifikationsrahmen.pdf.

23 Ibid, 4.

24 Ibid, 4.

25 Ibid, 4.

26 Ibid, 4.

27 Biggs, »Enhancing Teaching Through Constructive Alignment,« 350.

Such an approach would not facilitate learning and teaching but create additional work. To prevent this, it is necessary to consider the constructive alignment of the teaching scenario that is being planned. The concept of Constructive Alignment, developed by John Biggs, identifies three crucial points within instructional design that need to be aligned in order to elicit student performances adequate to higher education: goals i.e. teaching objectives, teaching methods, and assessment tasks. These three need to be systematically coordinated in order to create an effective learning scenario.

What is meant by that is firstly that »the curriculum or unit objectives are clearly stated in terms of [...] levels of understanding that imply appropriate performances.«[28] Biggs works with his own scale of levels of understanding[29] but any taxonomy that defines learning outcomes in terms of student performance can be used as a reference point for alignment. Next, »the teaching methods require students to be placed in contexts that will likely elicit those performances, and the assessment tasks address those same performances.«[30] Last but not least, adequate assessment methods play a crucial role in successful teaching scenarios. As Biggs states, »In deciding the assessment tasks, it is necessary to judge the extent to which they embody the target performances of understanding, and how well they lend themselves to evaluating individual student performances.«[31]

Following Biggs' approach to aligned teaching, the discussion in our paper will likewise focus on the three components described by Biggs. *We will not only discuss which learning outcomes are fostered by the teaching scenarios presented here but look into how they are aligned with teaching and testing methods.*

28 Ibid, 361.

29 Ibid, 351.

30 Ibid, 361.

31 Ibid, 365.

TESTED TEACHING SCENARIOS

In the following we will discuss *three tested teaching scenarios* involving digital tools nowadays commonly used in digital New Testament research[32]. We are going to investigate which mental tasks are trained in these scenarios in order to explore which learning outcomes they can facilitate. We will also discuss their constructive alignment. Particular attention will be paid to the discussion on the extent to which the use of digital technologies leads to different learning outcomes compared to traditional teaching methods and learning scenarios.

These scenarios are grounded on different digital frameworks, backend technologies and platforms. We will shed light on the usage of online repositories as well as programming languages. The following paragraphs are labelled according to the software and level of immersion into the development process expected from the students. This way, we believe to achieve two goals.

Firstly, it enables the interested reader and potential Digital Humanities lecturer to easily find the starting point for reflections according to the level of technological depth they plan to immerse their students in. This is the most common starting point of ideas for seminars – e.g. »Let's do a coding workshop for Theology students!«

Secondly, our approach tries to label the teaching scenarios according to their most prominent impact on students' competences. We focus on and reflect the educational effects for teaching and learning that are implied by the choice of technological tools used in the classroom. Because, why do a coding workshop in particular, what might be the benefit of it? As detailed above, digital media are merely the tools, not the keys to finding the appropriate educational methodology. The choice of tools has to follow the selection of competences to be learnt because all tools have their specific fields of use and require specific skills for application. Our guiding questions must be the following: What is the intended benefit or our seminar for the students attending? How can we enable them to achieve these goals by our choices of digital and of educational tools?

32 For more discussions on teaching scenarios and their impact of digital methods on New Testament Studies see the special issue on »Digital Humanities« of »Verstehen von Anfang an«, Fischer and Wagner, Digital Humanities, especially Garcés and Heilmann, »Digital Humanities und Exegese«.

DATABASES AND REPOSITORIES – KNOWING WHERE TO LOOK

The digitisation of data has established a great variety of tools and online services that are concerned with the presentation of digital data. They rely on databases and repositories to give the user access to research data. Well known tools are Logos or Accordance. They provide enriched textual data for New Testament Studies. Online repositories and platforms that provide online presentations of various source materials are much more numerous, e.g. the online material provided by Deutsche Bibelgesellschaft[33], the enormous amount of transcribed manuscripts at the New Testament Virtual Manuscript Room (NTVMR)[34], or the online presentation of Codex Sinaiticus[35]. The richest and most well-known open access repository for digitised classical (and other) texts is the Perseus Digital Database[36]. Search engines for literature such as open access repositories, library catalogues, or cross catalogue services such as Web of Science, specialised research literature services like ATLAS by Ebsco, and others belong to this category as well.

These resources have a straightforward usability: They provide access to materials for further research via various search, presentation, find, and retrieval mechanisms. These functions could be performed in a classical library setting as well but thanks to digitisation their accessibility, speed, translocality, and quantitative yield improved dramatically. (Most of the aforementioned also provide more complex analytical services as well but are mostly used and focussed on for their data retrieval services in this chapter [37].)

To get access to this research data, students foremost require *professional*

33 »Deutsche Bibelgesellschaft,« Startseite, accessed March 30, 2019, https://www.die-bibel.de/.

34 Bezold, »Online-Portale zu antiken Texten und Manuskripten,« 99 f, on the functionality of NTVMR. See the resource at Institut für Neutestamentliche Textforschung (ntvmr.uni-muenster.de/manuscript-workspace).

35 British Library, Leipzig University Library, St Catherine's Monastery at Sinai and the National Library of Russia, accessed Jul 24, 2019, http://www.codexsinaiticus.org/. It is discussed in the paper by Gotlind Ulshöfer and Juan Garcés in this volume; Bezold, »Online-Portale zu antiken Texten und Manuskripten,« 98 f.

36 Gregory Crane, Perseus Digital Library. Collections/Texts, accessed July 30, 2019, http://www.perseus.tufts.edu/hopper/collections. On its utilisation in seminars as an easy way to confront students with texts in their original languages cf. Crane et al., »Participatory Philology,« and Künzl and Wegscheider, »Faszination Digital Humanities,« 58 f.

37 For those more advanced components see below, chapter »Software Tools and Digital Editions«, 218 f.

competence (Fachkompetenz). They have to learn how to use the repositories and their query mechanisms, which resources are most relevant for them, what they provide, and how to extract usable data from them.

There are actually two aspects and learning outcomes necessary to foster this professional competence. First, students have to get to know what resources are available in their field. Secondly, they have to learn how to use them.

The first objective is usually achieved in tutorials in Germany. Tutors, i.e. advanced undergraduate students demonstrate the functions of selected tools deemed relevant by the professors. If successful, students acquire the professional competence to know which tools to use and how to perform basic tasks[38].

Learning how to use resources for scientific research, however, requires the development of methodological competence. Learning activities targeting this competence include the retrieval of data from repositories, their comparison, evaluation, and for the students to reach own conclusions.

The teaching scenario to be analysed in this section is a seminar on Textual Criticism which was held at the Institute for Protestant Theology at Dresden Technical University by Matthias Klinghardt in the summer term of 2017. Its object of research was the reconstruction of Marcion's Gospel according to Matthias Klinghardt and its justifications and obstacles.[39] Primary digital resource was the online table of textual variants Klinghardt had collected for each pericope.[40]

The intended learning outcomes were twofold: Students should be able to use the most current textual data available in online repositories such as the NTVMR and the Digital Vatican Library (professional competence). In addition, they should be able to perform textual criticism on their own (methodological competence). Positive side effect of this teaching scenario for

38 Tutorials for this matter should be held in computer cabinets so that students at least have to load the respective pages themselves. This simple task helps them remember the resources presented for later use, even though they acquire mere overview knowledge at this stage.

39 Matthias Klinghardt, *Das älteste Evangelium und die Entstehung der kanonischen Evangelien. I: Untersuchung; II: Rekonstruktion, Übersetzung, Varianten*. Tübingen: Narr Francke Attempto, 2015.

40 Daniel Pauling, Matthias Klinghardt, »Marcion Variants,« 2016, accessed July 3, 2019, https://marcionbible.tu-dresden.de/marcionvariants.html.

the teacher was that his evaluation of variants was double checked by the students. This aspect served students' motivation as well since they were included in his current research thereby enhancing their personal competences as well.

The seminar was held weekly for a whole semester as a 90 minutes course with around 15 students attending. First, an overview introduction was given in a lecture on Textual Criticism, the variants table, NTVMR, the motivation of the students, and the aim of the seminar. After that, the students formed groups of three to get their hands on the first pericopes and their variants. These supervised learning groups immediately stumbled across various obstacles such as the meaning of abbreviations, where to find the manuscript sources, which critical editions were used, etc. These obstacles were collected and saved for future seminar meetings. This way, the first meeting resulted in an overview and created a curious puzzlement in the students about the complexity of the tasks at hand.

This puzzlement was the foundation to work on during the following sessions. In each of them a new set of obstacles was discussed collectively. This way the students shared the knowledge each of them had gathered, while the lecturer took the role of a moderator and expert structurer of knowledge – mainly at the blackboard. A better solution might have been the creation of a blog or Wiki to store the growing collaborative collection of information,[41] while this way the students were themselves responsible to take individual notes of what they deemed necessary.

In each of the following seminar sessions the students worked in a supervised group environment, thereby going through the variants list while adopting their ever-growing knowledge of Textual Criticism. All groups worked on the same pericopes individually. They documented their progress and their findings – whether the data in the online table were correct or not, and what were errors – in a digital spreadsheet. These spreadsheets were compared and the findings discussed together at the end of each seminar.

The assessment of the learning outcome was didactically aligned to the teaching method as it was structured in the same way. Each student was given a set of pericopes and variants from the online table, they had to check

41 Anja Swidsinski, »Blogs im akademischen Unterricht der Geisteswissenschaften,« in *Digital Humanities*, ed. Stefan Fischer, and Thomas Wagner (Tübingen: Narr Francke Attempto, 2017), 81–85.

against manuscripts, transcripts, and critical editions. Thereby, they had to demonstrate all skills they had acquired during the course of the seminar. They were required to document their working steps, findings, and conclusions in written form. The results were to be handed in as a spreadsheet as they had worked with during the semester. The teacher could evaluate the level of skill development as well as the accuracy of results.

The first intended learning outcome of professional competence was successfully achieved by most students as proven by their documented findings. More conventional ways of assessing such as grading a thesis might not have been as helpful in the evaluation of this particular learning outcome as they require different abilities to those acquired and aimed for during the seminar.

Main objective of the teaching scenario, however, was methodological competence. To immediately apply knowledge to a clearly defined research problem empowered the students to do Textual Criticism on their own during and after the seminar.

In a similar setting a teacher would have to consider a more appropriate way to collect and structure the gathered knowledge of the working groups. Wikis or blogs might well be adopted for this end and could also serve as documentation platforms for the summative assessment of student's abilities. Their introduction to and utilisation of digitally available data such as manuscripts helped to overcome any reluctance to delve into this field of New Testament Studies.[42] At the same time they acquired an overview and evaluative abilities of many digital repositories of manuscripts and variants. This was mainly achieved by the task to apply this knowledge at all times during the seminar. A massive motivational boost was achieved by the students' active contribution to a current debate in scholarly research. This had an impact on their professional attitude i.e. their personal competence. Last but not least, the interactive, collaborative setting of the seminar helped foster the communicative, i.e. social, competence.

Do teachers and students have to deal with digital substitutes for conventional tools or with something new when retrieving data from digital repositories? The platforms and database tools mainly substitute traditional ways of publication and information retrieval, foremost the books in libraries, their paper catalogues, indices in books, and of concordances. Online transcripti-

42 Cf. similarly Künzl and Wegscheider, »Faszination Digital Humanities,« 62.

ons of manuscripts tend to become equal in importance to published critical editions in print. It is important to note that the introduction of digital resources such as NTVMR for information retrieval might appear to be merely a means to foster students' competence in professional knowledge. Yet the competences fostered with the seminar setting are more complex. Research in NTVMR to check variants in the manuscript tradition will be a very useful skill, if the goal is to criticise this variants tradition. The higher academic skills require a rather general knowledge of the available tools for information retrieval. In this the new digital media is a mere substitute for former ways of publication. A digital critical edition is in the end nothing more than that – a critical edition. But the use of the online platforms alone is just one task to do profound research in New Testament Studies. The media are just the tools, not the means of learning. Active search for information in these digital publications combined with further analysis of the data found is the means by which students foster their professional competence.

With the scholarly transition to digital critical editing this relation might soon be reversed. In this sense digitisation did not create anything new but transfered old – even ancient – data to a new technological level. What is new is the precision of search abilities. We can and even have to search across platforms for basic elements such as single words, even lemmata, or textual sources now. And we can retrieve a vast amount of results with just a few searches. This broadens the possibilities to gather data as opposed to the restricted resources of libraries. And it lowers the access barriers for novices to New Testament Studies.

SOFTWARE TOOLS AND DIGITAL EDITIONS – KNOWING HOW TO DO

This chapter is dedicated to a teaching scenario which focuses on tools and applications which make applied methods, data structure or visualizations of knowledge available and accessible to the researcher. Well-known examples for tools that provide these possibilities from within the field of New Testament Studies are, for example, Accordance, the late BibleWorks[43], the BiblIn-

43 »Deutsche Bibelgesellschaft,« die-bibel.de/.

dex project[44], as well as the evaluative components of NTVMR[45]. A good set of tools for applied linguistics in humanities seminars are AntConc and the other easy to use tools developed and made available by Laurence Anthony.[46] There are many other examples. Digital tools currently pervade New Testament Studies on all levels.

A feasible approach on how to apply software tools in academia during a seminar is to plunge right into the academic matter at hand while introducing the students to the technological backend technologies step by step. This was implemented in a seminar on Exegesis and Digital Textual Studies at Dresden Technical University, held by Jan Heilmann et al. in the winter term of 2015/16.[47] The teachers combined two objects of research: the early medieval manuscript of the Codex Boernerianus, situated at the SLUB Dresden[48], and TEI XML, which is a data annotation standard. It was visualized via the Manuscript Workspace of the NTVMR and its online editor as their tool set of choice.

The explicitly defined aim for the students was straightforward and rather product-oriented: By the end of the seminar the teachers wanted the students to produce a digital transcript of some parts of the manuscript. Therefore, the core task to be learned by the students in this seminar was how to digitally annotate a manuscript text: They had to produce something. This had the benefit of providing an easily scalable outcome since the number of parchment foils transcribed into TEI XML by the students was dependent on their learning progress during the seminar.

The planned learning outcome was intertwined with the product aimed

44 BiblIndex, Sources Chrétiennes. Index of Biblical Quotations in Early Christian Literature. accessed July 17, 2019, http://www.biblindex.mom.fr/.

45 Institut für Neutestamentliche Textforschung. New Testament Virtual Manuscript Room, accessed July 24, 2019, http://ntvmr.uni-muenster.de/.

46 Laurence Anthony, Software, accessed July 24, 2019, http://www.laurenceanthony.net/software.html.

47 Tobias Flemming, »Lernen an Handschriften. Studierende als Experten gewinnen,« in *Digital Humanities*, eds. Stefan Fischer, and Thomas Wagner (Tübingen: Narr Francke Attempto, 2017), 69-79, with a detailed report on the following, the didactic concept, and realisation of the seminar.

48 Sächsische Landes- und Universitätsbibliothek, Codex Boernerianus epistolarum Paulinarum graeco-latin, Mscr. Dresd. A. 145. b, accessed April 12, 2019, https://digital.slub-dresden.de/werkansicht/dlf/2966/.

at: The teachers wanted the students to gain sensitive insights into the history of research on textual criticism, to apply methods and processes, to foster their professional competence and help them gain methodological competence in the field of digital editing. This teaching goal was to be achieved by the implementation of »forschendes Lernen« – learning by doing research.[49]

The seminar was conducted in weekly meetings. With only six participants the group was small. This was beneficial for close collaboration and a flat classroom hierarchy. Two meetings were dedicated to getting to know the manuscript, trying to decipher the first letters and discussing the common goals and regulations together. Afterwards, the students transcribed passages in pairs of two. This was not bound to the weekly seminar meetings but conducted independently.

The workflow in the online tool used, i.e. the Manuscript Workspace of NTVMR and its transcription editor, was easy to learn because of its intuitive interface.[50] At the same time, it produced coherent TEI which means that the elements in the transcription were labelled and structured according to the standards of the Text Encoding Initiative[51]. The use of an external editor such as the Oxygen XML Editor might have given deeper insights into the regulations of TEI XML and enabled for a more detailed diplomatic transcription. But it would also have increased obstacles to start transcription. The web interface of NTVMR enabled the students to experience the whole editing workflow without the necessity to understand TEI fully before starting.

Despite the quite technical approach, the teaching scenario relied heavily on the students' communicative, i.e. social competence. They used a Wiki for setting down common rules for transcriptions, discussed problems, and documented their progress and results.[52] This »homework« gave them a good basis for regular updates and discussions during the regular seminar meetings. They met as experts. During the process they gradually became familiar with the regulations of TEI XML as well as with the conventions of the critical

49 Flemming, »Lernen an Handschriften,« 74 f.

50 The editor does not present XML but has the look and feel of widely used word processors. Flemming, »Lernen an Handschriften,« 76 f.

51 Text Encoding Initiative, TEI: Text Encoding Initiative, accessed July 23, 2019, https://tei-c.org/.

52 On the use of Wikis and blogs for similarly successful teaching scenarios Swidsinski, »Blogs im akademischen Unterricht der Geisteswissenschaften.«

apparatus of print editions. Thus, they learned to criticise digital editions as they had to decide on the most appropriate way to annotate in consensual discussions among themselves. Additionally, they used the four-eyes principle for editing in teams by producing independent transcriptions first and comparing them during later stages of the seminar. In order to do this, the students had to learn to define realistic milestones thereby gaining experience in applied computer sciences and consequently improving their personal competence.

This teaching scenario was foremost designed to improve methodological competence. It enabled the students to grasp the basics and obstacles of digital textual studies through direct confrontation with an object of research. The students pursued a common objective, the transcription, together, and therefore had to overcome similar obstacles. These required them to exchange their experience thus understanding the importance of continuous documentation during computational project workflows. This approach has a very high yield with respect to experience because the students have to perform and present themselves as professional researchers in their field. Especially the requirements towards documentation and teamwork constituted important tasks to prove (to each other as well as to the teachers) the acquisition of intended professional attitude i.e. the competence aimed at.

However, the final assessment task consisted of an exegetical essay on a small text passage. The students apply their knowledge of Textual Criticism[53] for a narrative task. This allowed for the observation of the students' methodological competence regarding Textual Criticism but not of their cooperative communicative skills. It might have been more adequate to take into account the discussions of the seminar proceedings recorded in the Wiki for the assessment as well. That way, learning objectives, teaching methods and assessment would have been combined even more productively.

The most intriguing advantage of this teaching scenario is the high intrinsic motivation for students' research because of the close interaction with sources, manuscripts, and current research projects (which still offer digitisation tasks in abundance)[54]. The transcript was even integrated into the

53 Thomas Nicklas, Der »lebendige Text« des Neuen Testaments, Der *Judasbrief* in p.72 (P.Bodmer VII). ASE 22 (1) (2005): 204.

54 Flemming, »Lernen an Handschriften,« 72.

transcription section of NTVMR on Codex Boernerianus, thus providing students the opportunity to publish a report on their findings.[55] Again, this task fosters personal competences of the students and hence their research competence. Such additional external motivation factors proved to be highly effective, while at the same time they are easily available to any teacher. Apart from the ways of publication chosen here, it would also be possible to publish documentations and results via a blog or an open access Wiki.

Now, do digital transcriptions merely substitute something long established in New Testament Studies or do they actually confront the field with something new? Textual Criticism and the edition of manuscripts belong to the core tasks performed within New Testament Studies. Critical apparatus and conventions are basically the same. However, there are three innovative aspects: Firstly, students will better understand editorial decisions and their importance having completed Textual Criticism tasks themselves using digital tools. Also, students in teaching scenarios like this one will approach critical edition tasks inductively from the manuscript text instead of the established critical editions[56].

Secondly, students are enabled to work closely on the original text thanks to the easy access to digital reproductions of original manuscripts.[57]

Thirdly, the possibility to publish digital transcriptions open access via the NTVMR increases individual efforts in editing of critical editions of the New Testament.

EDITORS AND INTERPRETERS – HACK THE SYSTEM

The following chapter is dedicated to the introduction of computational backend technologies into teaching scenarios. As opposed to the examples discussed before this means that students produce code with the help of pro-

55 Ibid, 76 f.

56 Cf. explicitly Ibid, 73.

57 Ibid, 71 f, and Daniel Dalke et. al. »Das Neue Testament in verändertem Licht? Die Digitale Transkription des Codex Boernerianus,« *BIS: das Magazin der Bibliotheken in Sachsen* 9 (2) (2016): 92–93, accessed July 14, 2019, https://nbn-resolving.org/urn:nbn:de:bsz:14-qucosa2-76146. (available online at nbn-resolving.de/urn:nbn:de:bsz:14-qucosa2-76146).

fessional editors instead of software tools providing substantial assistance in the task.

Coding is relevant for New Testament Studies in tasks such as annotating documents in TEI XML via a native XML editor such as Oxygen, scripting natural language processing (NLP) exercises and automating data retrievals from repositories via a console. Focusing primarily on the computational aspects instead of the supportive tools that are available is a feasible approach towards integrating computer programming into humanities seminars. It is about acquiring basic understanding of and becoming familiar with foundations of computation[58].

Ultimate goal of this seminar was to empower students in their development of scientific *methodological competence*. They were supposed to understand and handle fundamental backend technologies required to do digital research in the first place.

Why is this important to students of humanities? In an increasingly digital world students have to gain confidence to code in order to be able to solve complex academic problems in their field using digital methodology. Annotating and programming can enable students to understand the mechanisms as well as the limitations of available databases and tools. In a very linear, logical way they practice algorithmic thinking, divide et impera, and gain a profound understanding of the most recent developments in their field of research.[59]

Obviously, this is a very wide field requiring fundamental skills both on the teacher's and the learner's side. The close relation to studies of DH and Computer Sciences suggests assigning such courses to experts from the relevant fields. If students can take courses in Digital Humanities departments at their universities, this will be the preferable way. Also, inviting specialised guest lecturers for workshops, hackathons or summer schools seems adequate to teach students in this field.

Teaching and learning at this fundamental level simultaneously confronts the classroom with two critical tasks: Firstly, there is the *coding expertise* with its specific technical difficulties to be learned. Secondly, there is the *application* to the academic field with its specific questions. Obviously, there are a

58 We will not discuss whether to use html, XQuerry, Python, Perl, etc. We believe the choice of programming or scripting language to be of secondary importance.

59 Jannidis, »Grundbegriffe des Programmierens,« 89–92.

numerous ways to meet this dual challenge.[60] As Matt Munson elaborates, students in the humanities face difficulties in learning to code the same way a computer science student would, that is by solving abstract and ideal problems algorithmically.[61] As we witnessed throughout all the Digital Humanities seminars we held and attended, technophobia is still prevalent among humanities students and gender biases play a role as well. An encouraging empowerment of all students by the lecturer is important. Here, traditional approaches to teaching a programming language as known in the computational sciences must fail.

Teachers have to build bridges between the field known to the students and the rather foreign world of applied computer sciences. The most suitable approach to this conundrum, as Munson suggests, is to create specific, solvable tasks from within the humanities and not to aim for full fluency in any programming language.[62] New Testament Studies, for instance, provide such tasks in abundance. How to build a digital corpus of texts? What modifications are important to do research on this corpus? How to evaluate stylometric differences between texts? How to identify plagiarisms within the Canon of the New Testament? Nowadays, all these tasks are being worked on using an increasing number of programming languages.

Exemplarily, we will describe a practical teaching scenario on how to gain methodological competence in this field. It was not specifically a New Testament Studies course but its structure and the skills learned were so universal that they were adopted to New Testament Studies by students.[63] In the fol-

60 Cf. e.g. Kurz, *Digital Humanities*, who suggests a holistic approach towards guiding the students in one practical seminar via interconnected exercises from html and web applications, through XML annotations and their extraction with XQuery, to the programming of APIs for websites. This is a highly demanding schedule, suitable for a profound introduction to DH. When applied to one field alone, such as New Testament Studies, it would be difficult to combine all the required technical skills with specific subject matters of the Bible. However, such seminar can be taught over the course of several semesters providing students the possibility to raise their field-specific computational competences stepwise.

61 Munson, »Natural Language Processing,« 88 f. But he is opposed from a students' perspective, as Künzl and Wegscheider (2017) actually report that their exegetical skills benefitted highly from such seminars. As to be expected the effect on the individual student depends very much on their intentions and previous knowledge.

62 Munson, »Natural Language Processing,« 89 f.

63 Künzl and Wegscheider, »Faszination Digital Humanities,« 64 f.

lowing we discuss an introduction to programming for textual studies with Perl, a recurring seminar held at the Institute for Applied Linguistics of the TU Dresden. We attended and observed the course held by Joachim Scharloth in summer term 2017.

This teaching scenario aimed at fostering the methodological competence of students as well as their personal and professional competences by offering them insight into the computational aspects of applied linguistics. In order to do this, five crucial skills were developed. The students were supposed to know in theory how to implement and use linguistic methodology with the help of Perl scripts. They were expected to develop specialised basic Perl programming skills during the seminar along with a general ability to apply and develop algorithmic solutions to given problems. They were also supposed to learn the most important steps towards a working script from the idea to the definition of crucial steps and the implementation in code blocks. With the acquisition of these skills the students were intended to gain the ability to reflect on the working mechanisms and limitations of existing software solutions.

How was this achieved? The seminar took place once a week for 90 minutes during the course of a whole semester. The number of students attending varied between 10 and 25. Between the sessions the students were required to solve programming challenges on their own. The slides of the introductory lectures and scripts of solved tasks from sessions were made available online after each seminar. Additionally, students were given the opportunity to discuss approaches to these tasks in supervised, extracurricular tutorial courses.

Each seminar session was structured similarly. After the introduction, the first third of the session was devoted to solve last week's task collectively, thereby creating a working script with the help of the students' experience acquired during the week. As to be expected this setting encouraged students at all levels of individual skills and competence to implement their solutions on different levels of personal advancement and facilitated asking questions and discussing solutions in the group. It proved to be essential to create a collaborative atmosphere including every individual student. During the introductory sessions, when tasks were less complex, this worked well. However, over the course of the seminar the result comparison part was increasingly dominated by the experts who created a divide in the classroom. At this point, the seminar advanced at a pace some students were unable to follow. They consequently lacked several steps of understanding necessary to understand the more complex topics discussed at the end of the semester. It would have been important for the teacher to get honest feedback on the learning situation which is a crucial point of coding seminars:[64] The learning progress of all students must be monitored very closely otherwise some participants may lose trust both in the teacher and in their own abilities. The original aim of personal competence, i.e. to empower students to trust their own abilities in coding can not be achieved this way.

The second part of each session consisted of a lecture block of about 25 minutes for introduction of new topics in order to foster professional competence, i.e. knowledge and understanding. For example, one week was dedicated to introduce and work with Regular Expressions (RegEx) – an extremely helpful tool for every aspect of academic life, for example in searches, text editing, and other tasks.[65] An example for application in New Testament Studies would be to find each occurrence of »believe« or πίστης regardless of its inflections in a text corpus with the help of a text editor and script interpreter only. It has proven to be of utmost importance to explicitly point out the relevance of each new subject for one's specific field of studies in order to motivate the students to engage with it.

The third part of each session was dedicated to applying newly introduced information to respective tasks together to enhance understanding thus creating methodological competence. In our example of RegEx, students were presented a list of puzzles, formed supervised learning groups and developed and discussed matching RegExs for as many textual patterns as they were able to solve in about 20 minutes. The following 10 minutes were dedicated to comparison and discussion of difficulties and results. On the basis a possible task for the following week might be the creation of RegExs for three complex text patterns to recognize. The flash light method[66] was used to sum up each lesson's results.

64 One established method to continually guarantee this is the Teaching Analyses Poll; e.g. Birgit Hawelka, and Stephanie Hiltmann. Teaching Analysis Poll. Einsatz eines qualitativen Feedback-Instruments an der Universität Regensburg, 2018, accessed July 25, 2019, https://epub.uni-regensburg.de/38127/.

65 On RegEx cf. Jeffrey E. F. Friedl, *Mastering Regular Expressions*. Sebastapol, Calif.: O'Reilly, 2006.

66 Cf. on the Flash method in the Unesco's Glossary of Adult Learning Federighi (1999), 84.

The *assessment of the learning progress* was conducted in two stages. During the semester the weekly tasks were supervised and evaluated – not for the purpose of grading but rather to evaluate the application of the methods from the seminar and identify best- and worst-case-scenarios. Therefore, students were not required to hand in a working script but had to be willing to discuss their approaches as well as the obstacles they had met.

In order to receive a grade, students had to enter phase two and write a thesis on a given linguistic problem. Students were free to choose from their fields of interest or were assigned a topic by the teacher. The tasks differed from data retrieval to stylometric experiments. In their theses all students had to demonstrate their ability to formulate a hypothesis, evaluate and document its solution and draw conclusions from it based on former and newly acquired relevant skills.

While the weekly code snippet tasks continued precisely what the students had learned during the seminar sessions and encouraged them to apply it, this was not the same for the second stage. A written thesis is not optimally aligned with the way students learned to code during the seminar because additional abilities were required: Students had to learn by themselves how to document a software solution for a given task. To enable them to do this, it would have been necessary to reserve more time to introducing and training software project development necessities such as thorough documentation of code during the seminar[67].

For visualisation and documentation of the students' projects, alternative digital methods might have been applied. For example, the use of a Jupyter Notebook[68] server could have combined code development, working scripts, debugging, examples, detailed documentation and evaluation in one interface. This would require the same skills as learned during the seminar for the assessment.

The aim of this teaching scenario was to introduce Humanities students to programming by confronting them with tasks from within their field. This way they effectively developed their methodological competence because they learned programming by solving linguistic problems. This combination crea-

67 Cf. on the required tasks in programme development Jannidis, »Grundbegriffe des Programmierens,« 93 f.

68 Project Jupyter. Jupyter, accessed July 25, 2019, https://jupyter.org/.

ted a sound motivational basis and provided for tangible application of digital methodology. It requires thorough planning of seminar sessions and choice of tasks, as was the case in this seminar. Detailed preparation is the key to success for teaching scenarios – especially if they are designed for other disciplines.

The teachers must have interdisciplinary competences in didactics, technological knowledge, programming skills, and, of course, methodological expertise in the specific field taught. They have to bridge an educational gap between hitherto disparate disciplines. Often, students of humanities start from zero knowledge in computer sciences. Therefore, the described scenario advanced from simple tasks towards more complex applications of linguistic methodology in order to foster their professional competence in applied programming. This approach might be enhanced by focussing on helpful libraries of scripts such as the Natural Language Toolkit (NLTK) which equip the students with well tested and helpful functions[69]. The importance of monitoring all students' progress was pointed to before already.

The students were also empowered to build their personal competence. At the same time, they were given the opportunity to enhance their communicative competence in a group of fellow programmers which involves communicating as equals, arguably a rather different social setting from more traditional researcher environments. The teacher to this seminar actively contributed to creating a friendly learning atmosphere by motivating the students to identify with their groups of »nerds« and opting for jovial behaviour and flat hierarchies thus giving students the impression of being accepted as equals and researchers.

Computer programming indeed introduced new methodology to New Testament Studies and will continue to do so. Old questions can be approached in completely novel ways as the possibilities to compare, analyse, and extract information with the help of software increases dramatically. The spread of programming skill, however, will also help answering new questions. The methodological competence required to do so reaches far beyond the traditional boundaries of the field as it requires skills in applied computer sciences. For Humanities students this can be challenging as they encounter

69 See the thorough documentation of the NLTK by Steven Bird, Ewan Klein, and Edward Loper. Natural Language Processing with Python. Analyzing Text with the Natural Language Toolkit, accessed July 30, 2019, http://www.nltk.org/book/. On its positive effect on learning to code, cf. Munson, »Natural Language Processing«.

a fundamentally different scientific mindset. But this is exactly the point at which they can be encouraged to engage in interdisciplinary research.

CONCLUSION

Digital methodology should not be considered as an end in itself but as a useful and efficient tool in facilitating student learning. It is helpful in several ways. First of all, the *alienation effect* that the use of digital tools has on traditional scientific practice helps in *decoding the disciplines*. As a result of this process, teachers gain insights about which competences are needed in the field of New Testament Studies.

This knowledge in turn is instrumental to a constructivist approach to learning as reflected in the shift from teaching to learning. Pursuing this paradigm, teachers create learning environments in order to foster students' learning of selected competences.

Digital technology can be adapted to create teaching scenarios that help students develop essential competences of *higher education*. However, instead of being superficially added to established teaching scenarios, the focus on selected competences needs to be aligned with the teaching as well as the assessment methods used.

One very simple *basic principle* has to guide all the alignment of digital approaches in teaching efforts: *Students learn by doing.*[70] Whatever digital tool set a lecturer applies, the students have to use it themselves in order to learn anything from it. Even the most basic competence of knowing-where-to-look requires practical experience with the databases in question in order to be achieved. Ex-cathedra teaching should merely be used for first glimpses into digital subjects or to sum up student experience after solving tasks with any digital aid. Lectures in the classic sense cannot convey the required experiences but merely give the students a passive overview of the digital aspects of the field. As with all information in the digital sphere, such overview knowledge is quickly forgotten when not actively applied. While the visual and auditory aspects of learning experiences are triggered during such lecturing phases, it

70 Munson, »Natural Language Processing,« 5 f.

is the basic principle of didactics of computer sciences that only hands-on experience of solving problems by oneself is the key element to understanding the respective techniques.

It should also have become obvious that the level of technological understanding of the teachers is a constraint to teaching with the help of digital methods. In order to prepare students for work in digitised environments teachers themselves need to acquire the respective set of skills first. »Teaching the teachers« in digital methodology is still in high demand.[71]

Teaching with the help of digital technology creates challenges for the assessment of students' performance as well. As has been shown, traditional assessment assignments do not necessarily reflect all learning outcomes intended by the respective teaching scenario. »Constructivism strongly implicates the use of an assessment portfolio, where the students select at least some of the evidence that they consider matches the unit objectives.«[72] Many study regulations of universities already allow for novel and more suitable forms of assessment to align courses in a digitised environment.

The accounts, analyses and arguments presented here are open to debate and further empirical study. They are intended to enable lecturers of New Testament Studies to reflect their own teaching approaches in the light of digitisation. At the same time, this article points to the challenges of digitisation in university teaching in the humanities in general, beyond the more specific scope of New Testament Studies.

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71 Sahle, »Digital Humanities,« 24 f.

72 Biggs, »Enhancing Teaching,« 358.

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