**Digital Cultural Scientific Exegesis**

Project 1: References to Isaiah in the first two centuries

This subproject is aimed to gain an impression how a database or DH Graph mapping references to the book of Isaiah in New Testament an Early Christian literature could work. In order to get a first impression, we limit the scope of data to the first volume of Biblia Patristica (from the origins to Clement of Alexandria and Tertullian), which should provide enough material to see whether the concept works.

The required parameters that will be needed for evaluating the data are:

* Book of Isaiah (quoted source)
  + Chapter and Verse
* Works quoting Isaiah
  + Title
  + Chapter and Verse
  + Author (if applicable)
  + Location I (time of origin)
  + Location II (place of origin)
  + Genre of the work

In order to evaluate the data, it is necessary to be able to visualize the distribution of quotes in particular times, places and/or in particular genres. Being able to show if and how the use of the book has developed over time (what I tried to project in the chessboard-example) would help to instantly see whether the underlying cultural-scientific hypothesis can be verified.

For the New Testament, the data (quotations/allusions to Isaiah) exists in different excel-files. The new data from the Early Christian literature has been gathered by Biblia Patristica and can either be accessed in the printed version or its digital version <http://www.biblindex.mom.fr/> (for introduction into the project, <https://biblindex-en.hypotheses.org/22> and other history files of the project) might help.

One of the first steps will be to find out whether we can access the data from biblindex.mom.fr in any meaningful way or whether we have to start from scratch and find ways to digitalize the material (29 pages with columns in vol I) for our purposes.

At the same time, we will need to develop a format/medium/database that allows to store the data and develop digital presentations in the above mentioned ways.

Transcript from the video

What is digital cultural-scientific exegesis? How does it work and what new insights can it bring?

The innovation of digital cultural-scientific exegesis is that it connects cultural-scientific approaches, the use of computers, innovative forms of representation and big data. This new way to process and present data can help to overcome limitations of imagination caused by limits of representation and lead to new knowledge and better understanding.

In Biblical scholarship, data is traditionally presented in two-dimensional formats like tables or static diagrams. This entails two problems. It is almost impossible to visualize larger amounts of data and static presentations cannot capture the complexity or the temporal aspects of the material. As an effect, potential blind spots of traditional hypotheses stay unnoticed. A dynamic (richer?) representation of larger amounts of material can help to uncover potential blind spots and put old and new hypotheses to the test.

A good example is the presentation of biblical intertextuality, i.e. the references to the Old Testament in New Testament texts, which is usually done in simple two-dimensional tables. These tables display the references to the New Testament for every single Old Testament book as in the apparatus of the standard critical bible editions. Other tables display references to the Old Testament for books of the New Testament.

Similar collections exist for Early Christian texts. The best known is the Biblia Patristica. The printed version is basically a collection of sheer endless columns. The digital version is not capable of a dynamic presentation of the data either.

Two-dimensional tables of this type cannot depict complex connections of New Testament references to the Old Testament. Complex connections are e.g. Have particular passages been referenced especially often in certain genres or at certain times?

Many members of the biblical scientific community believe that early Christian authors did not work with the Old Testament texts but used collections of quotes instead. The earliest of these collections available to us dates from the mid third century.

From a cultural scientific perspective, this simple idea of collections of (?) proof-texts is not helpful. If references to the Old Testament are references to the cultural frames of early Christian writers, we should be able to trace more dense networks than individual and isolated quotes.

Collections of quotes only make sense when there is no longer a living connection to the Jewish tradition. This should be the case after the third or fourth generation of Jesus followers. In cultural-scientific terminology: this should be the case beyond the floating gap and the three-generation memory. In other words, roughly in the middle of the second century.

Both hypotheses, the traditional that already the New Testament authors used collections of quotes, and the cultural-scientific that there was no use of collections of quotes before at least the middle of the second century, can be tested with the help of digital data processing and by introducing a third and fourth dimension into our representation of the data.

Let’s keep it simple. Imagine a huge two-dimensional chessboard. One dimension gives you the chapters of an Old Testament book, the other the verse. Each field thus represents one verse, in our example, of Isaiah. Each reference to this book is visualized by the field moving up into the third dimension. If the verse is referenced once, the field moves up one unit. If it is referenced twice, two units, etc.

The million-dollar question is what this three-dimensional chessboard looks like when all references to the book of Isaiah have been visualized.

If the traditional hypothesis – New Testament authors use collections of quotes – is correct, we should see a few individual columns on the chessboard. If the cultural-scientific hypothesis – New Testament authors are familiar with the books and use them – is correct, we should see a mountain landscape, not just a few columns.

This question can be answered with a standard representation of the data and it seems that the traditional hypothesis is correct. Applied to our chessboard we only see a few columns.

The blind spot is that the traditional hypothesis tends to think in individual or connected quotes instead of clusters of intertextual references including allusions and even echoes. The cultural-scientific approach assumes that the New Testament authors did not see the books of the Old Testament as a quarry but used them as cultural frames to interpret their own experiences. When they made sense of their experiences with Jesus in the categories of a particular book of the Old Testament, it is likely that they did not limit themselves to individual quotes as proof-texts. The researcher has to broaden the scope and to search not only for quotes but also for allusions. If we extend our search from quotes to quotes and allusions, as I tried out for Isaiah, the picture changes. The chessboard longer exhibits individual columns but looks like a mountain landscape.

Now it appears that the data supports the cultural-scientific hypothesis: the authors in New Testament times were still rooted in a Jewish context and knew the Old Testament as part of their cultural memory. The intriguing question is what happens after that?

The limits of the New Testament canon coincide with the limits of the three-generation memory. If we apply the findings of social memory theory, the character of references to the Old Testament should change after the middle of the second century. Following the theory, the number of references should drop significantly, as the audiences of non-Jewish Jesus-followers are no longer able to recognize them. The range of quotes will in turn be limited to a few key passages clearly marked as quotes.

When we return to our three-dimensional chessboard and add the timeline as a fourth dimensions, we should see this: At the beginning, a mountain landscape, consisting of smaller and larger hills emerges. After the floating gap, in the middle of the second century, this move should stop and individual columns should be growing out of some of the hills. These columns can be identified as the typical candidates from the early Christian collections of quotes.

I would love to put this theory to the test. Up to now, our four-dimensional chessboard only exists as an idea. To bring it to life, we would have to program it using a database with the data from the critical bible editions, quotation surveys and the Biblia Patristica. Once the database has been filled with the required data, we can program visualizations and put different scenarios to the test. The data is out there; it is only not yet accessible in a helpful way. Digital cultural-scientific exegesis could close this gap. It could connect the theoretical models with a way to process and present larger amounts of material.

The proposed four-dimensional chessboard model could help to correct a long-lasting scholarly hypothesis and support an alternative interpretation. And this is not the end of the story: other researchers can use our results as the starting point for further research.

It would also be possible to extend our representation of the material to open new research fields by e.g. addressing the question of genre or location. Can we trace a specific treatment of Old Testament texts in particular genres? Can we trace such a treatment for particular locations?