Project Summary - Early Christian Art on Roman Epitaphs

Research Question

What kind of figural decoration can be found on early christian epitaphs? Is there a christian iconography similar to early christian art in other funerary contexts (e.g. Roman catacombs, late roman sarcophagi)?[1]

- Figural depictions on early christian epitaphs remain underexplored in existing scholarship, as most studies focus primarily on the textual content. This project aims to provide an initial insight into the iconography found on early christian epitaphs.

Early Christian Art in Roman Catacombs

The Roman catacombs are the cemeteries of the early Christian community at Rome. They preserve the first documentation of Christian art in the western Roman Empire. From the early third century on, the owners of private burial spaces decorated the graves of their deceased and themselves with images of their faith and hope for eternal life and salvation, depicting biblical scenes for the first time. Three traditional elements were included in this sepulchral art: a bucolic shepherd was transformed into the Good Shepherd of John's parable, the former image of piety became the orant, an image of the Christian prayer, and the banquet scene now became the scene of refregerium, a meal for the bereaved and a symbol of the eternal banquet. Besides these older scenes, completely new iconographies were invented, picturing some 20 biblical events from both Old and New Testament. From the late third century on, the image of the deceased was also integrated into the imagery of catacomb paintings. From the mid-fourth century forward, when churches were built and decorated, the catacomb paintings reflect their theological programs. With pope Damasus (366–384) the martyrs became part of the images. Finally, at the end of the catacombs and their paintings in the early fifth century, the monumental documentation of Christian art outside the catacombs begins.[2]

Data

The Data used in this project comes from the Epigraphic Database Heidelberg (EDH), which is one of the largest and most comprehensive Databases for Latin (and bilingual, i.e. Latin-Greek) inscriptions of the Roman Empire. The dataset does not contain a dedicated category for figural representations, any relevant information is embedded within free-text descriptions of the artefacts. To gain an overview over the figural depictions on the epitaphs the project employs keyword-based searches to identify relevant descriptions from the free-text commentary section.
The keywords are derived from a PhD study on figural depictions on "loculus-slabs" found in early-Christian catacombs in Rome (Figürliche Loculusplatten aus dem frühchristlichen Rom" - *"Figural loculus slabs from early christian Rome"*:

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[1] For a short introduction into the development and timeframe of early christian art see:https://www.britannica.com/art/Early-Christian-art

[2] N. Zimmermann, Catacomb Painting and the Rise of Christian Iconography in Funerary Art. *The Routledge Handbook of Early Christian Art* (2018), 1st Edition, p. 21-38

https://archiv.ub.uni-marburg.de/diss/z2012/0956/pdf/dee.pdf).[3] The epitaphs and their figural decoration discussed in the PhD date from the late 2nd century to the end of the 5th century and are all identified as Christian, therefore making it an excellent source for comparison.

Data Processing

To fetch the desired data from the Database API, I wrote a script called api_client.py. I began by retrieving a smaller dataset that included only Roman provinces. Once the rest of the code was written, I expanded the search to cover the entire database. After fetching the data I tried to clean and process the data with OpenRefine but along the way (probably also due to the size of the dataset) the program struggled with my entries so I decided to write my own script to clean the data.

Since the project focuses on Christian and potentially Christian monuments, I started the cleaning process by removing items marked as pagan. I then removed items that were missing a commentary and therefore not being relevant for my purposes. After that I implemented the keyword-search, a task that kept me busy for a long while.

Initially, I created an extensive list of keywords and experimented with regex patterns to capture variations. I added likely grammatical endings to my regex list and applied word boundaries to minimize false positives. But with this first approach the system often returned duplicates (e.g., variations of the same word with different endings), partial matches (e.g., "es" or stray commas), or unintended results.

I then started to work on another script using Stanza hoping that it would improve the keyword search but the switch to Stanza introduced its own set of hurdles. I lemmatized the text in the "commentary" column for a more precise keyword matching which worked fine when performed on a small dataset but when applied to a bigger set it proved to be too complex and time consuming. So I ultimately went back to working with a regex based search and spent some time on refining the process. While the results are not flawless and could still be improved, I considered them to be sufficiently accurate for the purposes of this project.

After matching the keywords and sorting them into the columns “motifs” and “motif-groups” I added another column “christian”, where I marked those items that could most certainly be identified as christian. The criteria was a) mentioning of christianity in the “religion” column b) a finding of a christian motif (christogram, cross, Alpha & Omega) in the description. It turned out that only 379 out of 16018 items could be clearly identified as christian.

Final Workflow

1. Data Import and Cleaning
    - The dataset was cleaned to exclude irrelevant items (e.g., inscriptions mentioning pagan deities).
2. Regex-Based Keyword Matching
    - A regex pattern was generated for a list of keywords, accounting for common grammatical variations (e.g., word endings).
    - This pattern was applied to the "commentary" column to identify potential matches.

[3] Loculus in a funerary context means a small grave carved into the walls of the corridors and rooms inside the roman catacombs. It is usually closed with a marble slab.

3. Lemmatization with Stanza
    - Matches found by the regex pattern were processed using the Stanza NLP library.
    - To handle specific cases and unify related terms, a custom “baseform_mapping” dictionary was applied
4. Motif and Motif-Group Identification
    - Identified motifs were aggregated into a new "motifs" column, and their corresponding categories were listed in a "motif_group" column.
5. Identification as Christian monument
    - The "christian" column was added to the dataset to indicate whether an entry is most likely Christian.
6. Final Output
    - The dataset was filtered to retain only rows with identified motifs.
    - The cleaned and processed dataset was saved to both JSON (filtered_data.json) and CSV (filtered_data.csv) formats for further analysis.

Data Analysis

The work on the script for the data analysis was pretty straight forward. I used Seaborn, Matplotlib, and GeoPandas for data visualization and created bar plots, line plots, heatmaps, and geospatial maps.

1. Frequency Analysis
    - shows most common motifs, motif groups, and motifs that are identified as Christian using bar plots.
2. Chronological Trends
    - shows changes in iconography over time by grouping data into 50-year time bins and visualizing trends using line plots and heatmaps.
3. Geographical Trends
    - shows geographical distribution of the most common motifs using world maps, with separate maps for finds before and after 350 CE
    - shows total finds (motifs) by country for all years, before 350 CE, and after 350 CE.

Discussion of Results

Frequency Analysis

After analyzing the most common motifs in the filtered dataset, it becomes clear that Christian symbols such as the Christogram, the cross, and the greek letters Alpha and Omega are among the most frequently occurring motifs. The dove, another common christian symbol of peace and the Holy Spirit, also ranks among the top five.

The Dolphin is another high ranking motif popular among both pagan and Christian Romans. However when looking at the distribution of motifs on identified Christian items the dolphin is almost absent. As a result, it is difficult to determine whether the depiction of the dolphin in the examined artifacts is rooted in a Christian context.

When grouping motifs by category, Christian symbols still dominate. They are followed by motifs reflecting timeless designs, such as wreaths and garlands, which were popular in

antiquity among both pagans and Christians. The “persons” category is the third most popular motif group. This keyword group includes depictions of individuals in everyday scenes or engaged in professions, and prominent figures that later emerged into Christian art, such as the shepherd or the figure of piety/orant.[4] Images from this group were popular in pagan funerary art and became also part of early Christian iconography from the late third century on. However, the majority of depicted people in our dataset are soldiers and equestrians, with a conspicuous absence of representations of the orant, the shepherd or other professions. Soldiers are infrequently seen in early Christian funerary art elsewhere, making it less likely that these representations stem from a Christian context.

An interesting and unexpected find is that of the motif "ascia," categorized under “tools” (Werkzeug). It ranks third in the list of individual motifs and elevates tools to fourth place among motif groups. While the geographical analysis highlights a regional preference, its frequent appearance on epitaphs seems to still be a bit of mystery for scholars. A short glimpse into the academic discourse reveals no widely accepted explanation for its popularity yet.

Probably the most noteworthy insight is the complete absence of motifs commonly found in Roman catacombs or on late Roman sarcophagi, such as biblical scenes or prominent individuals from both Old and New Testaments, the figure of the Good Shepherd or the figure of the Orant. These motifs are well-documented in early Christian funerary art but do not appear in this dataset of epitaphs. This discrepancy may be attributed to regional and social variations: The majority of epitaphs in this dataset comes from roman provinces and therefore might reflect simpler, more localized burial traditions that lacked the strong community networks and growing artistic conventions of the larger and more developed Christian community in Rome.

Chronological and Geographical Trends

The data reveals significant shifts in the motifs present on Roman epitaphs during the period 300–350 CE. Prior to 350, the most commonly identified motifs included tools (mainly the ascia), wreaths and garlands, as well as representations of persons, particularly soldiers and equestrians. The dolphin also ranked as a notable motif during this period. All this suggests a continuing reliance on traditional Roman iconography, although potentially blending with emerging Christian influences.

However, after 350 CE, we observe an increase in distinctly Christian symbols such as the Christogram, the cross, the dove and the Alpha & Omega signs. This shift correlates with the broader sociopolitical changes following the Edict of Milan in 313 CE, which effectively legalized Christianity. This event had a significant impact on Christian art, and can also be seen in a changing iconography in Roman catacombs and on late Roman sarcophagi.

Despite these noteworthy trends, it is crucial to recognize the declining number of total items available for analysis after 350 CE. Geographical trends illustrate a reduction in artifacts per country, leading to a more limited dataset for interpreting iconographic developments. With these small numbers we have to be careful to draw general conclusions as they may not provide a fully representative picture.

[4] Depictions of the deceased were deliberately excluded from this group because the extent to which it would have complicated the keyword search would not have been proportionate to the insights gained.

Critical Analysis of Data and Pipeline

Keyword-Search
Probably the biggest challenge for this research was to conduct the keyword search on the free-text descriptions of the dataset. I dedicated considerable time to enhancing the accuracy of the search, but cannot guarantee its total reliability. Furthermore, since the database concentrates mainly on the textual content of its artefacts, the accuracy of the descriptions largely depends on how meticulously the individual contributors entered the data and how significant they perceived that information to be. For future research it would be valuable to work on the reliability of the keyword search as well as on the expansion and refinement of the keyword list.

Challenges in Identifying Christian Items
As I mentioned earlier, only 379 of the 16,018 items in the filtered dataset could be identified as Christian. There is a strong correlation between the assignment of Christianity in the "religion" column and the presence of clearly Christian symbols (Cross, Christogramm, Alpha & Omega). Only 20 items had a null value in the "religion" column while simultaneously displaying a Christian symbol. This suggests that those entering the data likely classified these items as Christian based on the motifs rather than textual references. This method of classification may have resulted in the exclusion of numerous relevant items.

Challenges due to the decreased size of the filtered dataset
After visualizing the results chronologically it became apparent that a significant change happens around the year 300 to 350. I therefore decided to also display the geographical trends before and after that period. It then became evident that the total number of items dating after 350 CE is significantly smaller than those before. This reduction in dataset size may not provide a sufficiently representative sample and therefore limit the interpretation of the results.

Conclusion

In conclusion, the study shows some valuable insights into the development of iconography on early Christian and late Roman epitaphs, while also highlighting several challenges. While “traditional” Christian motifs are notably absent in the dataset, likely due to regional and social variations in burial practices, the study identifies a clear shift toward Christian symbols after 300 CE. However the limited identification of Christian epitaphs combined with the reduced dataset from the later period limits the ability to draw definitive conclusions about these trends.
To gain a more comprehensive understanding, it would be beneficial to incorporate late Roman epitaphs from other databases into the research. Further research could also benefit from including the textual content of the epitaphs and the archaeological context of their discovery, which might help identify additional Christian artifacts and allow for the reclassification of those items and their images. Additionally, a more detailed examination of regional trends could offer deeper insights into the evolution of Christian iconography on funerary art across the Roman provinces.