

The logo for Peer Community In Archaeology features a circular arrangement of various archaeological icons such as a microscope, a skull, a coin, a map, and a compass, surrounded by a cloud of blue dots. The text "Peer Community In Archaeology" is written in a large, black, sans-serif font to the right of the icons.

Peer Community In Archaeology

The valuable Corpus Nummorum: a not so Little Minion

Ronald Visser  based on peer reviews by **Fleur Kemmers** and 1 anonymous reviewer

Ulrike Peter, Claus Franke, Jan Köster, Karsten Tolle, Sebastian Gampe, Vladimir F. Stolba (2024) CORPUS NUMMORUM – A Digital Research Infrastructure for Ancient Coins. Zenodo, ver. 3, peer-reviewed and recommended by Peer Community in Archaeology. <https://doi.org/10.5281/zenodo.8263517>

Submitted: 18 August 2023, Recommended: 08 February 2024

Cite this recommendation as:

Visser, R. (2024) The valuable Corpus Nummorum: a not so Little Minion. *Peer Community in Archaeology*, 100393. [10.24072/pci.archaeo.100393](https://doi.org/10.24072/pci.archaeo.100393)

Published: 08 February 2024

Copyright: This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <https://creativecommons.org/licenses/by/4.0/>

The paper under review/recommendation deals with Corpus Nummorum (Peter et al. 2024). The Corpus Nummorum (CN) is web portal for ancient Greek coins from various collections (<https://www.corpus-nummorum.eu/>). The CN is a database and research tool for Greek coins dating between 600 BCE to 300 CE. While many traditional collection databases aim at collecting coins, CN also includes coin dies, coin types and issues. It aims at achieving a complete online coin type catalogue. The paper is not a paper in a traditional sense, but presents the CN as a tool and shows the functionalities in the system. The relevance and the possibilities of the CN for numismatists is made clear in the paper and the merits are clear even for me as a Roman archaeologist and non-numismatist.

The CN was presented as a poster at the CAA 2023 in Amsterdam during “S03. Our Little Minions pt. V: small tools with major impact”, organized by Moritz Mennenga, Florian Thiery, Brigit Danthine and myself (Mennenga et al. 2023). Little Minions help us significantly in our daily work as small self-made scripts, home-grown small applications and small hardware devices. They often reduce our workload or optimize our workflows, but are generally under-represented during conferences and not often presented to the outside world. Therefore, the Little Minions form a platform that enables researchers and software engineers to share these tools (Thiery, Visser and Mennenga 2021). Little Minions have become a well known happening within the CAA-community since we started this in 2018, also because we do not only allow 10-minute lightning talks, but also spontaneous stand-up presentations during the conference. A full list of all minions presented in the past, can be found online: <https://caa-minions.github.io/minions/>. In a strict sense the CN would not count as a Little Minion, because it is a large project consisting of many minions that help a numismatist in his/her daily work. The CN seems a very Big Minion in that sense.

Personally, I am very happy to see the database being developed as a fully open system and that code can be found on Github (<https://github.com/telota/corpus-nummorum-editor>), and also made citable with citation information in GitHub (see <https://citation-file-format.github.io/>) and a version deposited in Zenodo with DOI (Köster and Franke 2024). In addition, the authors claim that the CN will be shared based on the FAIR-principles (Wilkinson et al. 2016, 2019). These guidelines are developed to improve the Findability, Accessibility, Interoperability, and Reuse of digital data. I feel that CN will be a way forward in open numismatics and open archaeology.

The CN is well known within the numismatist community and it was hard to find reviewers in this close community, because many potential reviewers work together with one or more of the authors, or are involved in the project. This also proves the relevance of the CN to the research community and beyond. Luckily, a Roman numismatist and a specialist in digital/computational archaeology were able to provide valuable feedback on the current paper. The reviewers only submitted feedback on the first version of the paper (Peter et al. 2023).

The numismatist was positive on the content and the usefulness of CN for the discipline in general. However, she pointed out some important points that need to be addressed. The digital specialist was positive in various aspects, but also raised some important issues in relation to technical aspects and the explanation thereof. While both were positive on the project and the paper in general, both reviewers pointed out some issues that were largely addressed in the second version of this paper. The revised version was edited throughout and the paper was strongly improved.

The Corpus Nummorum is well presented in this easy to read paper, although the explanations can sometimes be slightly technical. This paper gives a good introduction to the CN and I recommend this for publication. I sincerely hope that the CN will contribute and keep on contributing to the domains of numismatics, (digital) archaeology and open science in general.

References:

Köster, J and Franke, C. 2024 Corpus Nummorum Editor.

<https://doi.org/10.5281/zenodo.10458195>

Mennenga, M, Visser, RM, Thiery, F and Danthine, B. 2023 S03. Our Little Minions pt. V: small tools with major impact. In: Book of Abstracts. CAA 2023: 50 Years of Synergy. Amsterdam: Zenodo. pp.

249–251. <https://doi.org/10.5281/ZENODO.7930991>

Peter, U, Franke, C, Köster, J, Tolle, K, Gampe, S and Stolba, VF. 2023 CORPUS NUMMORUM – A Digital Research Infrastructure for Ancient Coins. <https://doi.org/10.5281/ZENODO.8263518>

Peter, U., Franke, C., Köster, J., Tolle, K., Gampe, S. and Stolba, V. F. (2024). CORPUS NUMMORUM – A Digital Research Infrastructure for Ancient Coins, Zenodo, 8263517, ver. 3 peer-reviewed and recommended by Peer Community in Archaeology. <https://doi.org/10.5281/zenodo.8263517>

Thiery, F, Visser, RM and Mennenga, M. 2021 Little Minions in Archaeology An open space for RSE software and small scripts in digital archaeology. <https://doi.org/10.5281/ZENODO.4575167>

Wilkinson, MD, Dumontier, M, Aalbersberg, IJ, Appleton, G, Axton, M, Baak, A, Blomberg, N, Boiten, J-W, da Silva Santos, LB, Bourne, PE, Bouwman, J, Brookes, AJ, Clark, T, Crosas, M, Dillo, I, Dumon, O, Edmunds, S, Evelo, CT, Finkers, R, Gonzalez-Beltran, A, Gray, AJG, Groth, P, Goble, C, Grethe, JS, Heringa, J, 't Hoen, PAC, Hooft, R, Kuhn, T, Kok, R, Kok, J, Lusher, SJ, Martone, ME, Mons, A, Packer, AL, Persson, B, Rocca-Serra, P, Roos, M, van Schaik, R, Sansone, S-A, Schultes, E, Sengstag, T, Slater, T, Strawn, G, Swertz, MA, Thompson, M, van der Lei, J, van Mulligen, E, Velterop, J, Waagmeester, A, Wittenburg, P, Wolstencroft, K, Zhao, J and Mons, B. 2016 The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data* 3(1): 160018. <https://doi.org/10.1038/sdata.2016.18>

Wilkinson, MD, Dumontier, M, Jan Aalbersberg, I, Appleton, G, Axton, M, Baak, A, Blomberg, N, Boiten, J-W, da Silva Santos, LB, Bourne, PE, Bouwman, J, Brookes, AJ, Clark, T, Crosas, M, Dillo, I, Dumon, O, Edmunds, S, Evelo, CT, Finkers, R, Gonzalez-Beltran, A, Gray, AJG, Groth, P, Goble, C, Grethe, JS, Heringa, J, Hoen, PAC 't, Hooft, R, Kuhn, T, Kok, R, Kok, J, Lusher, SJ, Martone, ME, Mons, A, Packer, AL, Persson, B, Rocca-Serra, P, Roos, M, van Schaik, R, Sansone, S-A, Schultes, E, Sengstag, T, Slater, T, Strawn, G, Swertz, MA, Thompson, M, van der Lei, J, van Mulligen, E, Jan Velterop, Waagmeester, A, Wittenburg, P, Wolstencroft, K, Zhao, J and Mons, B. 2019 Addendum: The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data* 6(1): 6.
<https://doi.org/10.1038/s41597-019-0009-6>

Reviews

Evaluation round #1

DOI or URL of the preprint: <https://zenodo.org/record/8263518>
Version of the preprint: 1

Authors' reply, 29 January 2024

Dear colleagues, dear Ronald,

Thank you so much! We sincerely appreciate the thorough review of our contribution as well as the valuable insights and proposed corrections. Hopefully, we have implemented all your suggestions well enough and look forward for our paper being accepted for publication.

The revised file has been uploaded on Zenodo as Version 2 (<https://zenodo.org/records/10580542>). The text has undergone a thorough linguistic revision. Further corrections concern:

- Removal of the term 'minion' to avoid potential misunderstandings.
- Clarification on the handling of coins from trade and private collections (fn. 5).
- Explanation for the inclusion of forgeries (l. 116-119).
- Elaboration on the access to and rights assignment in the editor (l. 127-135).
- A more specific explanation of the application of the FAIR principles (l. 72-80 and fn. 4 and fn. 11), including the publication of the code on Zenodo with a DOI and adding a corresponding citation-file with the DOI in the Github-repository.

Once again, thank you for your meticulous review, and we look forward to the publication with great anticipation.

All best,
Ulrike

Decision by **Ronald Visser** , posted 02 November 2023, validated 02 November 2023

The valuable Corpus Nummerum: a not so Little Minion

The paper under review/recommendation deals with Corpus Nummorum (Peter et al. 2023). The Corpus Nummorum (CN) is web portal for ancient Greek coins from various collections (<https://www.corpus-nummorum.eu/>). The CN is a database and research tool for Greek coins dating between 600 BCE to 300 CE. While many traditional collection databases aim at collecting coins, CN also includes coin dies, coin types and issues. It aims at achieving a complete online coin type catalogue. The paper is not a paper in a traditional sense, but

presents the CN as a tool and shows the functionalities in the system. The relevance and the possibilities of the CN for numismatists is made clear in the paper and the merits are clear even for me as a Roman archaeologist and non-numismatist.

The CN was presented as a poster at the CAA 2023 in Amsterdam during “S03. Our Little Minions pt. V: small tools with major impact”, organized by Moritz Mennenga, Florian Thiery, Brigit Danthine and myself (Mennenga et al. 2023). Little Minions help us significantly in our daily work as small self-made scripts, home-grown small applications and small hardware devices. They often reduce our workload or optimize our workflows, but are generally under-represented during conferences and not often presented to the outside world. Therefore, the Little Minions form a platform that enables researchers and software engineers to share these tools (Thiery, Visser and Mennenga 2021). Little Minions have become a well known happening within the CAA-community since we started this in 2018, also because we do not only allow 10-minute lightning talks, but also spontaneous stand-up presentations during the conference. A full list of all minions presented in the past, can be found online: <https://caa-minions.github.io/minions/>. In a strict sense the CN would not count as a Little Minion, because it is a large project consisting of many minions that help a numismatist in his/her daily work. The CN seems a very Big Minion in that sense.

Personally, I am very happy to see the database being developed as a fully open system and that code can be found on Github (<https://github.com/telota/corpus-nummorum-editor>), but as one of the reviewers pointed out, it has no DOI. In addition, the citation information is also missing in the Github-repository. I would recommend adding a citation-file (see <https://citation-file-format.github.io/>). In addition, the authors claim that the CN will be shared based on the FAIR-principles (Wilkinson et al. 2016, 2019). These guidelines are developed to improve the Findability, Accessibility, Interoperability, and Reuse of digital data. However, from the paper it becomes not always clear how this is achieved, apart from the use of stable identifiers. I feel that this can be explained more explicitly, and also applied to the Github-repository. Apart from that, I feel that CN will be a way forward in open numismatics and open archaeology.

The CN is well known within the numismatist community and it was hard to find reviewers in this close community, because many potential reviewers work together with one of the authors or are involved in the project. This also proves the relevance of the CN to the research community and beyond. Luckily, a Roman numismatist and a specialist in digital/computational archaeology were able to provide valuable feedback on the current paper.

The numismatist was positive on the content and the usefulness of CN for the discipline in general. However, she pointed out some important points that need to be addressed. The digital specialist was positive in various aspects, but also raised some important issues in relation to technical aspects and the explanation thereof. While both were positive on the project and the paper in general, both reviewers pointed out some issues that need to be addressed, before I can give a positive recommendation to this paper. I am looking forward to see an improved paper based on the points both reviewers have made.

Reviewed by Fleur Kemmers, 12 September 2023

The paper under review is not a research paper as such, but a presentation of a digital database and research infrastructure for ancient Greek coinages, including a detailed explanation of its technical functionalities and the principles on which it is based.

Experts from the field of numismatics will know this database and infrastructure, but here can find a more detailed discussion of ‘what goes on behind the scenes’. As I am a member of this particular target group I found the paper very interesting and illuminating. The three levels of coin type, coin and die and how these are interlinked to other digital resources are well explained. The newly started thesaurus of iconography and how this is built up with AI pattern recognition is a very exciting new development. The images provided, although at times too technical for me personally, are well chosen and clarify verbal descriptions in the main text or provide examples of more generalised descriptions.

This paper does a good job in being accessible for readers not from the field of numismatics. Although quite some technical terms (die, type, monograms, etc.) are used, the functionalities and qualities of the database and infrastructure are well explained. Two points might need some further clarification: first it is mentioned coins from auctions and collectors are included. This is a particular aspect of numismatics, and not without problems from a provenance and ethical point of view. As such, there are various opinions in the field on how to use (or not use) these data and deal with them in an ethically sound and transparent way. The team behind CN will have surely reflected on this and made an informed decision. Yet, for other fields of archaeology, this might need some further explanation (even if in a footnote). The second point is related: the functionality of labeling forgeries. For readers outside of the field, this problem might not be apparent and might need some further elaboration.

I am not qualified to comment on the more technical details and how suitable or innovative they are in the field of CAA. From a user point of view, the functionality and strength of the dataset and infrastructure are excellent.

Reviewed by anonymous reviewer 1, 26 October 2023

The corpus nummorum – A digital research infrastructure for Ancient coins article describes the corpus nummorum (cn) platform and project by the BBAW, Münzkabinett Berlin and the Big Data Lab of the University of Frankfurt. The authors summarize the project, the functions of the CN editor, the versioning system used within the database and discuss further developments. The article is a presentation of the project that seems to aim at encouraging people to share their coin data via CN and use the platform for research.

The platform and its infrastructure are described concisely and with helpful illustrations. Here I would like to give just a few recommendations to improve the clarity and comprehensibility of the text.

- The introduction of the CN project feels in parts a little bit clunky in language, using more conjunctions than needed. The agency changes between impersonal third person „the project“ / „CN“ and the first person „we“, which I recommend to harmonize. Both points may be just a matter of style.
- Describing the CN Editor as a „minion“ may be opaque to people not in the CAA community. I would recommend explaining the term or not using it.
- The authors close the article with an encouragement to the reader to use the CN website for their research. It is a bit jarring, as the part before discusses further developments not yet implemented. It is also not explained in detail how one can participate (Is a login necessary? Does everyone get access to all levels of information? Who, e.g. may edit typologies?) . This call for participation may be better placed closer to the description of the editor, explaining how the functions there might be accessed and contributed to / used for own research.

For the technical aspects I would like to applaud the developers on their open source model and the publication of the development code with documentation on Github. It might be useful to release a version to a repository giving a persistent identifier to the code (e.g. zenodo). This would give the paper a stable link to the current version of the code. There has been a Github release already, which would be a likely candidate for such a persistent publication.

Versioning of the typologies manually as well as automatically is a good idea, and its access via time stamps an important step for scholarly research in online databases. The LOD publication and use of well-known thesauri (such as nomisma) for quality-checks are great steps of employing semantic web technologies for numismatics research. The article's last main part describes the prospect of using NLPs and CNNs for the development of a hierarchical iconographical thesaurus. This is a very interesting and powerful idea, which would enable semantic searches across different image carriers. It would link numismatics research to other

ancient science areas and allow for new research questions to arise. I am looking forward to hearing more about it in the future.