XRONOS: challenges in building a global open repository for chronometric data

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Abstract

150–300 words

Radiocarbon data has been at the forefront of archaeologists' recent embrace of open data and open science. Comprehensive compilations of radiocarbon dates have become available for many parts of the world in the last decade and, as natural next step, there are now several initiatives to collate this data globally, including the retrieval tool c14bazAAR (Schmid, Seidensticker, and Hinz 2019), the IntChron exchange format (Bronk Ramsey et al. 2019), and the synthetic database p3kc14 (Bird et al. 2022). Here, building on a complementing these initiatives, we present XRONOS <https://xronos.ch>: a new web-based platform for chronometric data from archaeological contexts worldwide, combining an open data repository with tools for importing, curating and analysing chronometric information from diverse sources. The development of XRONOS raises a number of challenges. Conventions for sharing radiocarbon data are relatively well-established, but integrating other classes of chronological information—dendrochronology, typochronology, Bayesian priors, etc.—demands a more sophisticated technical infrastructure. The scale of the dataset, and our aim of "one date, one record", also requires new systems for the continuous ingestion, synthesis and curation of data from multiple sources; systems that should be scientifically robust and sustainable in the long term. Finally, beyond the technical, we must acknowledge several ethical and practical limitations on the how 'open' archaeological data can be, building tools that respect these limits, but also continue to foster an appreciation of the ethical imperatives for data-sharing within our discipline. In this talk, we present our progress towards meeting this challenges in the development of XRONOS so far, and invite discussion with the community of practioners who produce, compile, and use chronometric data on the future direction of the project.

References

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