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Project Andvari: A Digital Portal to the Visual World of Early Medieval Northern Europe

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Project Background

Project Andvari is designed to provide integrated access to dispersed collections of northern European art and artifacts of the early medieval period (4th–12th centuries). Our stated goal is to create a free digital portal offering aggregated search options and enhanced metadata. In spite of considerable interest in the Vikings and their predecessors, the relevant primary materials are difficult to access because they are scattered in specialized publications with a national or geographical focus. Recently, limited subsets of material, mainly restricted by medium, object type, or location, have been made available through online databases and museum catalogues. However, there has been no way to connect these subsets, and the search functions of existing databases are limiting since they pre-structure material in conventional categories dictated by scholarly traditions. In response to these challenges, funding was requested to convene an international workshop for humanities scholars, museum professionals, and technology experts to refine the conceptual design of the proposed research tool and identify its technological requirements in preparation for a pilot project. The following is a report of project activities, a summary of our initial findings, and a proposal of future project activities.

Project Activities

The primary objective of the NEH Digital Humanities Level I Start-Up Grant was to hold a two-day international workshop at the Center for Medieval and Byzantine Studies of The Catholic University of America (CUA) in Washington, D.C., in November 2013, to discuss and develop a digital tool called *Andvari*. This tool will serve our overall project goals of providing integrated access to dispersed collections of northern European art and artifacts of the early medieval period. The initial project workshop was convened in Washington, D.C., so that it would be easily reachable by international participants. In addition, the Project Director's home institution (CUA) was a logistically and financially convenient location because of its existing infrastructure for administrative support. The project team also fostered a partnership with digital humanities scholars at CUA's Department of Library and Information Science (LIS) that would later assist with controlled vocabulary development.

In addition to the project co-directors Lilla Kopár and Nancy Wicker, the initial project workshop was attended by a diverse set of interdisciplinary practitioners, all of whom offered unique perspectives to the challenging task at hand. Attendees included:

> Lesley Ferguson, Head of Collections, Royal Commission on the Ancient and Historical Monuments of Scotland, Edinburgh, Scotland
> Helen Geake, Finds Advisor, Portable Antiquities Scheme, McDonald Institute for Archaeological Research, University of Cambridge, UK
> Kristina Jennbert, Professor, Department of Archaeology and Ancient History, Lund University, Sweden
> Siv Kristoffersen, Professor, Museum of Archaeology, University of Stavanger, Norway

Worthy Martin, Associate Professor of Computer Science and Co-Director of the Institute for
Advanced Technology in the Humanities (IATH), University of Virginia

Sigmund Oehrl, Researcher, Project "RuneS," Institute of Scandinavian Philology, George August
University, Göttingen, Germany

Tim Pestell, Senior Curator of Archaeology, Norwich Castle Museum and Art Gallery, UK

Daniel Pett, Information and Communication Technologies Advisor, Department of Portable
Antiquities and Treasure, The British Museum, London, UK

Daniel Pitti, Co-Director of IATH, University of Virginia

Marcus Smith, Information Developer, National Heritage Board, Visby, Sweden

Youngok Choi, Associate Professor of Library and Information Science, CUA

Joshua Westgard, University of Maryland Libraries

Beth Newman Ooi, Graduate Student, Center for Medieval and Byzantine Studies, CUA

Joseph Koivisto, Graduate Student, Department of Library and Information Science, CUA.

Two scholars listed in the original proposal, Karen Høilund Nielsen (Aarhus, Denmark) and Alexandra Pesch (Schleswig, Germany), had scheduling conflicts and could not attend the workshop, so others were invited in their place. Unfortunately, Fredrik Svanberg (Stockholm, Sweden) had to cancel at the last moment due to illness and could not be replaced; however, N. Wicker met him in Stockholm in September 2014 to keep him up-to-date about the project.

A preliminary agenda was pre-circulated via email and participants were asked to comment and share materials in preparation for an efficient meeting. The final agenda was developed in collaboration with our consultants, W. Martin and D. Pitti from IATH at the University of Virginia, with additional help from D. Pett, M. Smith, and J. Westgard. Further, a planning meeting was held with Y. Choi and J. Koivisto to discuss best practices in identifying user needs and data structure. Project team members from IATH set up a project website (www.andvari.org) to serve as the initial information page for the overall project and, ultimately, as the main landing page for the proposed platform. All final workshop agendas, materials, and resources were made available through our project blog where workshop attendees were invited to comment or add additional resources (https://projectandvari.wordpress.com).

During the initial project workshop, discussions produced a general technical specification that captured desired platform functionality and proposed system design. Subject specialists and scholars indicated that their vision of the proposed platform would provide several enhancements to object records, thereby accommodating innovative research approaches. These included: enhanced subject metadata related to period, style, and iconographic content; dynamic discovery layers such as map-based interfaces; and registered user access to support new user-generated object data. They simultaneously expressed concerns that they did not want the system to attempt to "outsmart" its users by including an excess of pre-coordinated searching or filtering features, creating what they interpret as artificial gaps in returned search

results.[1] Given these stipulations, technology experts D. Pitti, W. Martin, D. Pett, and M. Smith proposed a set of system recommendations that would become the general specifications for the future application to be developed during Stage II of the project. Using an open access content management system (Drupal at www.drupal.org), the forthcoming application will integrate object records from identified collections via automated harvesting processes and feature many of the proposed enhancements that will facilitate creative information reuse. An initial pilot data set was identified and respective data sharing agreements with The British Museum, the Swedish National Heritage Board, and the Norfolk Castle Museum were drafted.

Following the workshop, we conducted a series of evaluations to assess the effectiveness of the meeting. We had immediate follow-up conversations with participants who stayed in D.C. for another day to two, and exchanged a number of email messages. In January 2014, we developed a Survey Monkey assessment with targeted questions about the quality of the workshop. The survey was distributed to all participants. Initial evaluation of the meeting indicated an enthusiastic reception and support of the project overall. Workshop participants expressed excitement for the ultimate platform and indicated that they would be most willing to use the platform in their research and teaching. Examples of responses include:

> *I would be happy to use the database in my research.*
> *[I will use Andvari] both as a tool for research in its own right, and as a part of a larger infrastructure of semantically linked culture heritage data.*
> *I support the Andvari project, and I would really like to be a resource [to the project] in the future.*

Immediately following our initial workshop, additional activities were introduced into the project scope. The partnership with digital humanities scholars at CUA's LIS Department resulted in a supplemental initiative regarding the development of a project-specific iconographic thesaurus. The urgent need for such a thesaurus was identified at the project workshop. A group of graduate students in Kevin Gunn's Spring 2014 Digital Humanities course confirmed what we already observed, that although there is a plethora of resources for the classification and semantic structuring of Christian art, there is a lack of comprehensive print or digital thesauri specific to our area of interest and data set. The confirmation that the project has identified a true gap in available resources was significant. Five graduate students conducted research that uncovered extant vocabularies and indices relevant to project needs in either content or form, thesaurus authoring and harvesting platforms that may prove useful for future

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[1] This is a well-documented concern of humanities researchers with regard to research systems and platforms. See M. Bates, S. Siegfried, and D. Wilde, Research practices of humanities scholars in an online environment: The Getty online searching project report No. 3. *Library & Information Science Research* 17:1 (1995). 5-40.

development, and grant opportunities that may provide additional support for specific project segments or deliverables. Their work was a significant boon for the project, and the Andvari team was pleased to provide a hands-on learning opportunity for local students.

During initial research into extant platforms and authority resources, the project team also identified an ongoing initiative whose stated objectives aligned with our own in such a way as to promote collaborative efforts. The NEH-ODH sponsored PeriodO (http://perio.do/) project has expressed interest in collaboration with Project Andvari to enhance our ability to link and search across historical periods in our object records. Archaeological and art historical material is often categorized by period, but the dates of those periods vary from place to place, thus rendering chronological association and collocation difficult or, in many cases, impossible. By collaborating with PeriodO, our project will generate a two-fold benefit: 1) stable identifiers as established by PeriodO's gazetteer will promote structured periodization and cross-collection collocation of artifacts from different data sets; and 2) period identification data generated by Project Andvari staff will help further refine PeriodO's resource by adding discipline-specific periodization data to the available authority.

Publicizing

Several presentations have promoted awareness of Project Andvari, beginning with a brief report by Dr. Kopár at the Monuments Network conference at the University of Chester, UK, in April 2013, followed by a lightning presentation by Drs. Kopár and Wicker at the "Unconference" on Digital Humanities held at the Maryland Institute for Technology in the Humanities in October 2013. A printed information flyer about the project was produced and distributed at scholarly meetings. At the College Art Association (CAA) THAT Camp in February 2015, Dr. Wicker chaired a session on "Controlled Vocabularies and Aggregated Data" at which the project was discussed, which she followed with a lightning-round presentation on Project Andvari at the CAA annual conference. Both Drs. Kopár and Wicker spoke about the project at the Harvard University Runic Colloquium in March 2014. Dr. Wicker presented a paper on it at the Yale University Baltic and Scandinavian Studies Conference in March 2014 and gave a brief explanation of the project at the 27th Annual Meeting of Field Runologists in Oslo, Norway, in April 2014. Furthermore, Project Andvari research assistant Joseph Koivisto (CUA) presented on the project at the Society of American Archivists annual meeting in August 2014, and he will present a further report at the Cultural Heritage Information Management Symposium at CUA this coming June. In May 2015, Dr. Kopár will represent the project at the Linking the Middle Ages Workshop in Austin, TX, and deliver a project report at the biannual meeting of the International Society of Anglo-Saxonists at Glasgow in August 2015. These presentations have given (and will give) project staff opportunities to answer direct

questions about the project and the proposed platform, thereby promoting engagement within the disciplinary field while also increasing public anticipation of the coming product.

In addition to the primary project website, the Andvari team has employed several approaches to publicize the project and the proposed platform, garnering considerable interest from several researchers and institutions worldwide. The project blog has generated over 1,400 views so far and has provided an excellent platform for disseminating project updates. The use of Twitter – through the @ProjectAndvari account – has also served as a project outlet, allowing for quick updates to over 300 individual followers. Our twitter account received additional benefit from the inclusion of Carolyn Twomey of Boston College as a social media manager. Her regular contributions to the project twitter feed and efforts to network with other projects have brought additional visibility. Furthermore, a project logo was designed by Hungarian graphic designer Péter Sávai to provide visual branding for our project (see cover page).

Lastly, the project team has developed publication proposals that will help further expand project awareness and share our experience in various aspects of digital humanities with the wider world. A co-authored chapter (by Koivisto, Kopár, and Wicker) has been invited for publication in the edited volume *Crossing the Virtual Divide: Digital Tools and Digital Divides in the Practice of Medieval Studies* (ed. by T. Rose-Steel and E. Turnator). A second article (by Joseph Koivisto and the graduate volunteer group) on the development and application of controlled vocabularies in project settings has been submitted for review for a special edition of the *Journal of Library Metadata*.

Adjustments

Staff Additions

Following the initial workshop, Project Andvari made several enhancements to the scope and scale of the project. First among these adjustments was the expansion of the project team. The Dean of Arts and Sciences at CUA, L. R. Poos, kindly provided Dr. Kopár with a paid research assistant, allowing for Joseph Koivisto to join Project Andvari as a project assistant. His addition to the team guaranteed steady progress for project activities and also fostered continuing collaboration within different academic units of the university (Library and Information Science and Medieval and Byzantine Studies). J. Koivisto continues to work with the project, at the moment as a volunteer, assisting with project management, data management planning for Stage II, and thesaurus development.

Iconography Thesaurus Workshop

Limited funds remained from the original Level I grant due to careful planning and budgeting. Therefore, to fully utilize the grant budget towards preparation for the pilot of our digital tool, the project team

requested and obtained a no-cost extension of the grant until December 31, 2014. Thus, arising from the documented need for a project-specific controlled vocabulary to capture iconography, Project Andvari planned a two-day workshop to lay the foundations of a thesaurus of iconographical subjects for the Andvari portal. The meeting (November 7–8, 2014) was once again held at CUA, supported by the remaining NEH funds. In addition to the core project team, attendees at the second workshop included:

Christopher Roberts, Assistant Research Professor of Anthropology, Arizona State University
Karen Overbey, Associate Professor of Arts and Art History, Tufts University
Danielle Joyner, Assistant Professor of Medieval Art History, University of Notre Dame
Kevin Gunn, Coordinator of Religious Studies and Humanities Services, Mullen Library, CUA
Samuel Russell, Religious Studies and Humanities Services, Mullen Library, CUA.

During the workshop, we solicited insights from a small group of content specialists in medieval art and archaeology, library and information science specialists, and technology experts. The workshop aimed to gauge professional perspectives on the facets of comprehensiveness and granularity and to produce a workable skeleton draft of a vocabulary hierarchy that will ultimately be used by the proposed project platform to describe artifacts selected from the digital image holdings of collaborating institutions (The British Museum, the National Heritage Board of Sweden, and the Norfolk Museum). The initial thesaurus draft was revised using the Protégé platform (protege.stanford.edu) and generated in a SKOS-encoded format, thereby allowing for future linked open data (LOD) enhancements and alignment with extant authority resources. This revised thesaurus became the basis of a crowdsourcing application developed in collaboration with The British Museum's MicroPasts project (micropasts.org). This application allows for distributed users to test the thesaurus's usability by tagging iconographic content in a sample set of 250 objects. The application was launched on March 20, 2015, and is publically accessible through the MicroPasts site at http://crowdsourced.micropasts.org/app/andvari/. Data collection is still in progress, and the evaluation will be part of Phase II of the project.

Lessons Learned

The initial workshop proceeded very smoothly and established an enthusiastic tone of collaboration for the remainder of the project. The project team spent a great deal of time in September and October 2013 on developing the workshop agenda. The preliminary agenda discussed earlier, together with proposed readings and links to relevant electronic resources, was posted on our project blog. The blog also presented logistical information about the workshop, and through its comment feature, allowed participants to contribute. Although it was initially designed for the workshop, we decided to maintain the blog and continuously post updates on our progress as well as further links and readings.

The interim period between the two workshops (December 2013 through November 2014) was productive with the addition of a graduate research assistant and the graduate student volunteer project to examine existing controlled vocabularies. The additional workshop in November 2014 was a bonus that was not planned for in the Phase I proposal. Compared to the initial workshop, the iconography thesaurus workshop was on a smaller scale, with limited international participation but with new US contributors. We did less extensive planning for it due to limited resources and time, and different levels of familiarity with the goals and history of the project caused some difficulties (see below). Nonetheless, we were able to achieve meaningful progress toward the development of a project-specific iconographic vocabulary to describe northern European artifacts consistently.

Despite our numerous accomplishments, a project of this scope cannot be executed without some frustrations. The project co-directors were somewhat discouraged by the minimal preparation by some initial workshop attendees in reading their "homework" of articles and links provided on the project blog and by their relative lack of input after the workshop. Attempts to solicit regular input from them regarding the development of project-specific thesaurus resources were not successful, hindering our attempts to generate initial work on our project-specific thesaurus. Our sense is that the manner in which we approached workshop attendees for contributions – via emails and shared-access files – may have been an unproductive means of requesting input. We are currently working to find ways to reconfigure our requests to incentivize active participation from more of our geographically remote colleagues.

Our second workshop could have benefitted from more in-depth pre-workshop communication, particularly because we were bringing some new participants aboard for this project meeting. The general agreement was that those new to the project did not have the appropriate amount of foundational information about Project Andvari and therefore were not as prepared as desired for the workshop in terms of (1) decisions that had already been finalized; (2) the planned direction of the project after the workshops; and (3) technical information that will guide the project going forward (i.e. encoding protocols, envisioned platform, data providers, etc.). Due to this gap in understanding, time was spent on bringing some attendees up to speed on the project and addressing questions and concerns that were peripheral to the conversation at hand. In the future, diligence should ensure that all attendees have access to appropriate documentation of previous project decisions and work plans. In addition, we should provide mandatory readings prior to the workshop to guarantee that attendees have the required level of understanding of content and technical concepts, and we must stress the importance of reviewing pre-workshop materials in order to save workshop time and maximize efficiency.

The vocabulary workshop in particular highlighted the gap in understanding between content experts (art historians and archaeologists) and technical services representatives. Some discussions were derailed by conversations springing from content experts' limited understanding of the encoding protocol (SKOS) to be used for the ultimate product of the workshop, which in turn led to misunderstanding how the initial word/concept list should be formatted. This required additional workshop time in order to explain the ways in which the protocol will accommodate the semantic structure of the vocabulary. We should not have assumed that technical concepts were equally familiar to all participants. As a remedy, we should have provided either additional introductory materials for attendees or dedicated a preliminary workshop presentation to the characteristics of the SKOS protocol. In the future, as we bring new collaborators into the project, we plan to develop brief video tutorials to explain specific technical issues to content experts, along with introductory videos or tutorials for new users of Project Andvari once it is operational and available to the public.

Future Goals

In September 2014, Project Andvari applied for NEH Digital Humanities Level II Start-Up funding to develop a functioning pilot using the collections of three international partner institutions with representative datasets that participate in LOD initiatives: The British Museum, the National Heritage Board of Sweden, and Norwich Castle Museum and Art Gallery. If funded, the grant would support development, testing, and implementation of a pilot platform that will harvest and aggregate existing metadata records and digital surrogates of objects maintained in the collections of these partner institutions. It is planned that this phase of the project would be administered by our collaborators at IATH at the University of Virginia. In addition, storage and maintenance of data will be performed by IATH per our proposed data management plan. The ability to make use of graduate student research into controlled vocabularies during the spring of 2014 and to hold a second workshop in the fall of 2014 moved Project Andvari forward faster than we had anticipated in our original grant proposal. Thus we are ready for the pilot phase of the project. If our current application to NEH is not successful, we are determined to apply for other sources of funding to complete the pilot and move the project forward.

We continue to carry our project forward during this interim period without funding by using crowd-sourcing through the MicroPasts platform. The application generates user contributions to stress-test our iconographic controlled vocabulary via tagging a representative sample of 250 objects from The British Museum and Kringla (of the National Heritage Board of Sweden). This MicroPasts mini-project will help us further refine our thesaurus by highlighting gaps in concepts and our proposed resource hierarchy, and will bring more publicity to Project Andvari.

We hope that the successful launch of our pilot, and later of the full-scale digital tool itself, will further illustrate the importance of such a resource to the growing field of digitally-enabled medieval research by showing that such a platform is technically feasible and capable of generating meaningful enhancements of existing data, and can inspire new research questions and cross-disciplinary collaborative projects.

Conclusion

Based on the completion of our initial proposed workshop, the addition of supplementary project components, and the positive feedback that we have received from workshop participants, we feel that Project Andvari has proven to be a successful initiative. Thanks largely to NEH-ODH funding and the unyielding support of the co-directors' home institutions, the project was able to successfully expand its scope by making important additions to the initial project plan, therefore increasing the likelihood that the resultant pilot platform will be both a useful resource and an integrated element in the ever-growing network of linked historical research tools. The continued involvement of project members from collaborating international institutions through our expanded Stage I activities and our MicroPasts mini-project only further supports our belief that initial project activities have been successful in establishing interest and engagement with the Andvari initiative.

As Project Andvari continues to explore the methodological and technical requirements of generating an innovative platform for aggregated research, the project team will strive to remain true to the foundational principles of our initiative: allowing users to study the visual material culture of the northern periphery of early medieval Europe across media and beyond traditional geographical and disciplinary boundaries. In this vein, we will continue to cultivate lasting collaborative relationships with contributing scholars and institutions, seeking their input throughout future development stages. Ongoing publicizing of our progress and goals will help to further captivate user interest while refinements achieved through our crowdsourcing initiative will be integrated into our iconographic resource, therefore increasing its usefulness as a broadly-applicable descriptive authority. Our initial progress, stated support from interdisciplinary researchers and practitioners, and established collaborative agreements give us assurance that Project Andvari will be fully realized as a functional digital resource that will alter the future of medieval research across collections, institutions, and nations.