Narrative Section of a Successful Application

The attached document contains the grant narrative and selected portions of a previously funded grant application. It is not intended to serve as a model, but to give you a sense of how a successful application may be crafted. Every successful application is different, and each applicant is urged to prepare a proposal that reflects its unique project and aspirations. Prospective applicants should consult the Office of Digital Humanities program application guidelines at http://www.neh.gov/grants/odh/digital-humanities-implementation-grants for instructions. Applicants are also strongly encouraged to consult with the NEH Office of Digital Humanities staff well before a grant deadline.

Note: The attachment only contains the grant narrative and selected portions, not the entire funded application. In addition, certain portions may have been redacted to protect the privacy interests of an individual and/or to protect confidential commercial and financial information and/or to protect copyrighted materials.

Project Title: Networks in History: Data-driven tools for analyzing relationships across time

Institution: Stanford University

Project Director: Dan Edelstein

Grant Program: Digital Humanities Implementation Grants

Table of Contents

GRANT11305526 -- Attachments-ATT1-1234-contents.pdf

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Abstract

We are applying for an NEH implementation grant to produce a suite of visualization tools that are simple to use, respond to the research needs of humanists, and are built with historical data in mind. These tools will allow users to analyze the geographic breadth, historical shape, and social composition of intellectual networks of any time period.

Historians, and intellectual historians more particularly, have long recognized and been attentive to the importance of networks in the dissemination of ideas, the transformation of cultures, as well as other political and social processes. But preoccupations of the present have a way of affecting perceptions of the past: in 2012, the year of the Facebook IPO, the theme of the American Historical Association (AHA) conference was "communities and networks." This theme reflected the increased awareness of the impact that social networks have on our own professional lives, as well as the power that digital technologies possess for revealing the organization of these networks. Not by chance, 2012 also marked the first year that digital humanities were seriously represented at the AHA (including by members of our "Mapping the Republic of Letters" project).

But historians who wish to bring this awareness and these technologies to bear on the study of the past face a number of challenges. The network visualization tools that are currently available have a steep learning curve and are ultimately of limited help for humanists. These tools rest on assumptions about the completeness and empirical value of data that often do not hold true for humanities research. Historical data can be incomplete and messy: statistical analysis can be a helpful to a limited extent, but interpretation at the most fundamental level is required to uncover meaning. Humanists also ask questions about the data that cannot be answered by numerical analysis. We need tools that help us filter, contextualize, compare, and see the gaps in our data.

We have already produced a series of prototypes to address these issues (thanks to a 2009 "Digging into Data" NEH grant) based on a range of use cases. We have also gathered a significant amount of biographical, correspondence, and travel data against which we can test these visualization techniques to uncover connections across collections. We have experimented with a number of data models and visual techniques, arriving at a combination that has been tested in the context of nine research projects over the past three years.

We are requesting this grant to provide the additional time and resources to abstract and develop our most successful visualization techniques to the point where they can easily be shared with other scholars. We are in an ideal position to draw on our best practices to produce a suite of polished, sharable visualization tools that will serve historical research with three user groups in mind: 1. Digital humanities scholars and teams with the necessary technical expertise, who can integrate the components into their own projects and web applications (the "widget" model); 2. Scholars seeking easy upload, exploration, and analysis of historical data sets, without having to touch any code; 3. Early modern scholars who want to use these tools to explore and analyze their own data in the context of the data sets we have already gathered for "Mapping the Republic of Letters" project.

Statement of Innovation

The core innovation of our project is the design of visualization techniques that emphasize the contextualization and interpretation of data in cases where we lack the metrics for useful quantitative analysis. The two other key innovations both involve the leveraging of novel technologies: we use new flexible data models to let individual scholars create and apply their own data categorizations; and we use open linked data sources to reconcile data sets against established authority files, in order to link entities across data sets and thereby explore networks across collections.

Statement of Humanities Significance

Intellectual history is one of the fields that stands the most to gain from the influx of big data. By combining metadata from library catalogues and large-scale digitization projects, our project maximizes the transformative effect of all this information. The cartographic, chronological, and network visualizations we are producing will allow researchers to examine some of the big questions that intellectual historians have long struggled with: How do intellectual networks function? How interconnected are they? How independent are these networks from other social networks?

Narrative

Overview

At the same time that social media are making us increasingly aware of the importance of our own scholarly networks, vast amounts of data relating to past intellectual networks are also coming online. A major source of these data are scholarly correspondences, which multiple projects in the U.S. and Europe are in the process of cataloging and/or digitizing. Another key source is library data, more and more of which is being made accessible as linked data, often in standard formats like RDF. Thanks to this massive influx of data, we stand on the cusp of a methodological revolution: researchers will soon be able to reconstruct the complex webs of social and intellectual relationships that could previously only be intuited. A more precise understanding of how these networks were constructed will allow scholars to tackle questions that have long hovered over the field of intellectual history, but remained tantalizingly out of reach. Were intellectual networks truly cosmopolitan, or did they tend to be nationalist in breadth? What role did social elites and civil servants play in the constitution and diffusion of intellectual networks? Did these networks look considerably different in the sixteenth versus the eighteenth century? How do intellectual networks map onto other kinds of networks (trade, diplomatic, colonial, etc.)?

At the moment, however, we do not have the requisite tools or integrated environment in which to explore this data trove. Visualizations of data play an essential role in data exploration and analysis by enabling us to plot many data points on a single map, graph, or timeline. Many of the existing tools, though, do not provide the kinds of functionality that humanists require, in particular the ability to perform more qualitative (i.e., interpretive), rather than purely quantitative/statistical analysis. One reason why this qualitative approach is essential is that our data vary considerably from most (social-)scientific data. Historical data are generally incomplete and uncertain, and what's more, in unpredictable ways. We therefore need a visual language for representing uncertainty, so that researchers can see not only what their data contain, but also what is missing.

Since 2008, "Mapping the Republic of Letters" (MRofL), our research project at Stanford, has created a series visualization prototypes, developed flexible data models, and established a network of collaborations with other digitization projects, design teams, and data specialists. We accomplished much of this through our 2009 NEH Digging Into Data challenge grant award for "Digging Into the Enlightenment: Mapping the Republic of Letters." With this present grant proposal, we seek to turn the lessons we have learned and insights we have gained from the development of those prototypes into a refined set of visualization tools for humanities scholars. We are fortunate to have a well-established partnership with DensityDesign Research Lab (www.densitydesign.org) from the Communication Design Department at the Politecnico di Milano. Working together for two and a half years now, we have built models while also defining a set of design principles for interpretive tools (Appendix A). These guiding principles are key to developing tools that support a domain expert's capacity to make sense of complexity, rather than tools that rely on automated reasoning.

History

Our original project, "Mapping the Republic of Letters" (republicofletters.stanford.edu) grew out of an academic conference in 2007 on the historical transformations of the "Republic of Letters." This term refers to the intellectual networks that connected scholars in the early modern period, largely through the medium of correspondence. Thanks to a three-year, $180,000 grant from the Stanford Presidential Fund for Innovation in the Humanities, and to partnerships with the Electronic Enlightenment Project (www.e-enlightenment.com), the Packard Humanities Institute (www.packhum.org), and Stanford Libraries, we were able to create a database containing metadata for over 60,000 letters, by such authors as Athanasius Kircher, John Locke, Voltaire, Jean-Jacques Rousseau, and Benjamin Franklin. Working with Jeff Heer and students in his Data Visualization course at Stanford, we produced a proof-of-concept map visualization ("RPLVIZ": Appendix B, figure 1) of this correspondence, which earned the North American Cartographic Information Society 2009 Student Webmapping Competition prize in the interactive map category. It was also featured in a 2010 New York Times article about "Humanities 2.0." A key feature of this tool was that, in addition to the point to point map visualization and timeline, it provided hyperlinks to the full text of each letter (when available online). This ability to access the archival material through the visual interface became a requirement for all of our subsequent experiments.

Powerful as this initial visualization was, it had a number of limitations. Most importantly, it did not inform the user how much data was missing from the map. This was not a trivial point: in the case of Voltaire's correspondence, for instance, we were only able to map ~12% of his letters (the rest had missing or incomplete location metadata). In fact, all the data visualization tools we came across, whether maps, network graphs, or timelines, from ArcGIS (www.esri.com/software/arcgis) to Cytoscape (www.cytoscape.org), assumed that the desired analytical intention was quantitative or evenly measured, and did not afford a view of the data that would reveal gaps or visualize ambiguity. We realized at this point that to use visualization effectively for historical scholarship, we needed 1) to develop new visualization techniques that would reflect the data in all of its incompleteness; and 2) to allow annotation and direct manipulation of the visualization so that a scholar could meaningfully explore, assess, and interpret the results.

We developed a number of prototypes, each design driven by real historical data sets and domain-specific research questions:

1. Corrsipondenza. Soon after winning one of the inaugural "Digging into Data" NEH grants in 2009, we began version 2 of the "RPLVIZ" map mentioned above to address the problems of data hidden from view. We chose the web as our development and distribution platform because we wanted to be able to share these tools widely and because we recognized the potential of these tools as visual browsers for existing digital archives. At that time, new expressive graphics libraries written in javascript were also being developed. ("Expressive" in this case means that rather than just declaring "pie chart" and seeing a pie chart, we could have quite a bit of control over the form, appearance, and interactivity of the javascript visualization.) The simplicity and flexibility of these graphics libraries (Protovis, D3.js and Polymaps, to name a few) allowed us to rapidly prototype visualization techniques with relatively minimal code. "Corrispondenza," the revised version of the "rplviz" map, included, in the timeline portion of the visualization, a histogram showing two data measures by year: the letters plotted on the

map and those not plotted. The results were dramatic. (See Appendix B, figure 2.) We added to this visualization another feature that plots connections on the map for undated letters, which accordingly do not appear on the timeline.

2. Inquiry. "Inquiry" (Appendix B, figure 3) was designed to address one of the greatest challenges and opportunities for accessing a large heterogeneous data set: the point of entry. When you visit an online collection, you almost always start with a text search field. This tool instead lets the user browse available data on a map, on a timeline, or grouped by volume according to author, recipient, archive source, destination, or collection name. It gives the user the "shape of the data" as a guide to exploring correspondences across aggregated collections; and the point of entry, likewise, can be an person, a place, a time period, or an archive. As the user navigates the data, these visual filters also reveal how complete or incomplete the dataset is in terms of temporal information, number of individuals represented, and geographic distribution of data.

3. Ink. "Ink" (Appendix B, figure 4) integrates a number of views into the correspondence network of a single individual. We used Voltaire's correspondence for this prototype to explore how we could reveal more information about the "missing" letters mentioned above (i.e., those with incomplete location data). We combined an interactive cartographic view (with clickable links to the relevant metadata for each line or place); a histogram, showing volume of letters/year; and Fineo (a type of flow maps showing relationships between different dimensions of data), displaying biographical metadata about his correspondents. These views, moreover, were all linked, so that by clicking, say, on "nationality" in Fineo, the letters in the histogram are colored according to the nationality of their recipients. In this way, we could show that, while only 12% of his correspondence was "plottable" on the map, the distribution of letters was essentially in line with the distribution of nationality among his correspondents.

4. Priestley-timeline. Another case study, which took as its source *A Dictionary of British and Irish Travellers in Italy, 1701-1800*, resulted in an innovative timeline. (Appendix B, figure 5.) A map might seem the most obvious way to plot travel, but due to the nature of the data —fragmentary with varying timescales— we arrived at something very different: a dynamic, layered chronological view of trips by city, inspired by Joseph Priestley's Chart of Biography. Our early attempts, first to plot movement between cities on a map, then to capture patterns of travel based on sequence of cities visited, failed because the data was too sparse and heterogeneous to produce a meaningful representation in the abstract. Instead, the chronological view allowed us to see the duration of visits of the more than 6,000 travelers in context with each other by time and place. It was an exciting transformation of a text into a visualization that made it possible to identify who was in the same city at the same time. Through this process of experimentation with different visualization techniques we finally arrived at a representation of the Dictionary data that answered one of the central research questions: who was in the same city at the same time; a question that simply could not be answered by reading the text cover to cover.

This work with the Grand Tour traveler data brought us back to thinking about network graphs. Our early experiments with the network graph visualization application *Gephi* were unsuccessful. Looking at Voltaire's correspondence network, for example, we could see all the connections between individuals in his network, but the power of the application rests on mathematical models acting on the metrics (how many or how few letters were sent to or from). While this was useful up to a point, we had

no way to move beyond the quantitative bias of the tool to explore the quality of those connections and inject domain expertise through direct manipulation and annotation of the connections. It was this experience that led to our most recent visualization experiment, Knot.

5. Knot. In August 2012, we held a month-long workshop (archived at athanasius.stanford.edu) with designers, programmers, and humanities scholars to see if we could apply network graph logic to the exploration of a large, heterogeneous, humanities data set. We needed a tool that enabled data filtering, variable spatial layouts, and non-hierarchical navigation. The result was "Knot" (knot-dev.herokuapp.com/investigate.html). (Knot has been re-packaged by some of our partners at linkurio.us). The success of Knot as a prototype led to a partnership with Dana Diminescu, a sociologist at Télécom ParisTech, who piloted the development of Gephi and is the editor of the e-Diasporas Atlas (www.e-diasporas.fr). Through this ongoing collaboration, funded on their end by a grant from the French Agence Nationale de Recherche, or ANR, we will provide humanities research use-cases to extend the capabilities of web-based network graph visualization further to include annotation, direct manipulation of both nodes and vectors, clustering, and layering.

Current Research Environment

In spring 2012, we joined two other digital humanities projects at Stanford to form the Center for Spatial and Textual Analysis (cesta.stanford.edu). This Center, currently funded by the Stanford Dean of Research, the Stanford Humanities Center, the Wallenberg Foundation, and the Mellon Foundation, supports core professional staff, provides hardware, software, and an innovative shared work environment in the middle of Stanford's old quad. More than thirty PhD and undergraduate students are affiliated and working at any given time at CESTA, which is also home to the Spatial History Lab, founded by Richard White and directed by Zephyr Frank, as well as Franco Moretti's Literary Lab. In September 2012, we established the laboratory Humanities + Design, under which "Mapping the Republic of Letters" now sits. The broader rubric of Humanities + Design allows us to extend and explore the tools and methods we have developed with partner researchers working outside of the early-modern period. The innovative results we hope to produce with this grant will be made possible in large part due to this unique collaborative research environment and the combined expertise of CESTA's community of researchers.

Technology Innovation

"Athanasius" is the name we have given the web application we have developed to store, manipulate, integrate, and retrieve data. Athanasius has been expressly conceived to deal with humanities data. In this sense, a highly flexible data schema has been designed in order to provide scholars (and users in general) to freely model their own data, while, at the same time, enabling the addition of other existing collections (see Appendix C for further details). Users can upload their own collections and create custom data models for them. Moreover, internal references among elements of a collection can be made and exploited when working with the data. In the current version, a data reconciliation across some specific data models (people and places) can be made, allowing users to virtually extend their collection and accessing to other users' data.

The application makes use of the open source Django web framework

(www.djangoproject.com), written in Python, for the server-side, while it relies on HTML5, Javascript and CSS 3 for the client-side. Several Javascript libraries are also used for interactivity and visualization (e.g. jQuery, d3.js, knockout.js). As a database, Athanasius uses the open source technology MongoDB (www.mongodb.org). The application provides also a series of REST APIs (Application Programming Interfaces) to access and work with the data. Currently, Athanasius stores the data shared with us by partner archives as well as data collected by our team of researchers.

Thanks to CESTA funding from the Wallenberg Foundation, we recently hired a post-doc, Glauco Mantegari, to focus on leveraging linked data to enrich, expand, and share our data set, drawing from and contributing to libraries and cultural heritage organizations. We have a pilot project underway whose goal is to pull in associated metadata about book publications by Voltaire and his correspondents from the Bibliothèque nationale de France (using their new linked data site: data.bnf.fr). We are also attributing GeoNames IDs (www.geonames.org) to place names, which will help to disambiguate or aggregate different naming conventions, and also pull in regional/national data when it is missing. Finally, we are developing or adapting standard ontologies for describing a person's occupation, family relationships, areas of expertise, education, and academic memberships. Our ultimate goal is to enable filtering and searching across datasets; using VIAF (Virtual International Authority File, viaf.org) as authority list for persons will also allow us to easily match individuals in different datasets.

User-Tester Base

We are confident that these tools will meet a broad range of researchers' needs, since we have a large base of user-testers. The members of our "Mapping the Republic of Letters" project are themselves pursuing a multiplicity of research agendas. Among the Stanford faculty involved, Giovanna Ceserani is exploring the networks of British travelers in Italy, using data collected from John Ingamells' source *A Dictionary of British and Irish Travellers in Italy, 1701-1800*; Dan Edelstein is studying Voltaire's correspondence network, as well as the geographic distribution of his book editions; Paula Findlen is examining the travel, correspondence, and publications of Francesco Algarotti, and the correspondence network of Athanasius Kircher; while Caroline Winterer is working on the correspondence and travel of Benjamin Franklin. The four of us were approached by the editor of the *American Historical Review* to publish a Forum on our research; we are currently in the peer-reviewing stage of that process.

In addition to faculty members, we have a group of research fellows (funded by a grant from the Stanford Vice Provost for Graduate Education and by the Dean of Research), who are working on their own projects. Marcelo Aranda is studying connections (real or imagined) between European and South American scientific networks; Elizabeth Coggeshall is reconstructing Dante's network of patrons and friends; Maria Comsa is working on the staging of private plays in eighteenth-century France (and constructing a database of troops and aristocratic patrons); Melanie Conroy is heading up a project on the French salons, studying their composition over two centuries; and Claude Willan is examining the role of religion and family relationships in Locke's network.

While most of these projects still concern the early modern period, we are also working with Arie Dubnov whose interests lie in the transformation of German intellectual networks during and after WWII. His work offers a very interesting test case for our visualizations, as his data is in some respects fairly similar (he has acquired the metadata for Isaiah Berlin's correspondence), but geographically and

GRANT11305526 -- Attachments-ATT4-1237-narrative.pdf

chronologically quite different.

Finally, there are a number of scholars outside of Stanford who are working with us to refine our visualization tools. Irène Passeron will be testing our approaches to network visualization as part of her work on d'Alembert's correspondence. Anthony Grafton will be using our tools to examine some macro-level questions, namely (in his words) whether we can detect "patterns of group communication (i.e. communications that really connect one circle with another)" and "differences between the Latin Respublica litterarum and the later French version." Peter N. Miller will examine similar questions from the perspective of the seventeenth-century Republic of Letters. We will also be testing the component implementation of our tools in conjunction of the "Cultures of Knowledge" Oxford project, which wishes to integrate our cartographic and network views into their database. These expert users have agreed to come to Stanford for 3-day workshop in 2014 to participate in a formal evaluation of the tools as part of the development process.

Environmental scan

Though visualization tools and techniques seem to be sprouting up all over, the challenge of visualizing uncertainty does not have any ready solutions. Addressing this problem requires us to fundamentally rethink the visual language we use in these data-driven tools. Active discussion problematizing existing visualization techniques has been taking place within the digital humanities community for some time, most recently in October 2012 at the NEH-funded workshop at the University of Redlands, "Visualizing Flow and Movement for the Humanities," and at a DH 2012 pre-conference NeDiMAH (www.nedimah.eu) workshop in Hamburg, "Here and There, Then and Now – Modelling Space and Time in the Humanities." (See Appendix D for a list of articles and papers on this topic in the humanities and design research communities.)

We adopted the "widget," or component model for delivery of the visualization tools from MIT's SIMILE Widgets project, though the substance of what we are delivering in that format is quite different. The chronographic tools offered by SIMILE Timeline and SIMILE Timeplot, rely on uniform time scales. There are other widgetized timeline solutions, like TimelineJS (timeline.verite.co) or Timeglider (timeglider.com). Though these tools offer rich view of data, none of them tackle the challenge of ambiguity in temporal data.

Large scale technology services projects and research environments like Bamboo and SEASR (Software Environment for the Advancement of Scholarly Research) incorporate data visualization into their toolsets. In the case of SEASR, the power of the toolset rests largely in the sophisticated analytical processes written into the software. Our project is lightweight in terms of technology infrastructure and backend logic. It is, instead, concerned with visual techniques for representing humanities data; techniques that can be adopted by SEASR, Bamboo, or any other project that presents results graphically.

Our primary aim of providing visual tools that support humanistic methods and are grounded in interpretation, is perhaps most closely aligned with the "Neatline" project of the University of Virginia's Scholar's Lab. But whereas Neatline focuses on annotating and contextualizing existing digitized artifacts to tell stories and present ideas, we are primarily concerned with the supporting the research process of investigating existing data and contributing new data for further investigation. This could be empirical

data collected from another source or it could be a new categorization defined by the scholar.

The response from researchers to our work so far has been very enthusiastic, not only within the humanities, but also among social scientists and journalists who need to make sense of large amounts of data with unpredictable gaps and uncertainties. Thanks to this interest, we quickly found ourselves with many requests for collaboration, both from individuals and from other digitization projects. We have been working closely with "Cultures of Knowledge" (cofk.history.ox.ac.uk), a Mellon-funded project at the University of Oxford that has catalogued metadata for over 60,000 letters (emlo.bodleian.ox.ac.uk), as well as with "Circulation of Knowledge and Learned Practices in the 17th-century Dutch Republic" (ckcc.huygens.knaw.nl), a Huygens Institute project that has digitized over 20,000 letters. We are also working with two projects in France, the "Groupe d'Alembert" (dalembert.obspm.fr), and the "Inventaire Condorcet" (c18.net/18/p.php?nom=p_condorcet), both funded by the CNRS, a group in Austria working on the "monastic Enlightenment" (www.univie.ac.at/monastische_aufklaerung), and two groups in Italy: one working on the correspondence of Antonio Vallisneri (www.vallisneri.it) and the other on the correspondence of Laura Bassi. Many other scholars have also contacted us individually to request access to our visualization tools: these include Anthony Grafton (Princeton), who is preparing an edition of Joseph Scaliger's correspondence; Peter N. Miller (Bard Graduate Center), who is working on the intellectual network of Nicolas-Claude Fabri de Peiresc; and William Connell (Seton Hall), who has been cataloguing Machiavelli's and Erasmus's correspondences. Since we have been focusing primarily on tool development, we have not actively sought out additional collaborators, but there are at least a dozen other projects in the U.S. and Europe that are collecting data relevant to the Republic of Letters.

Work Plan
See Appendix E for the corresponding work schedule.

We are requesting funds to support work for 16 months from September 1, 2013 through December 31, 2014. Our approach is inspired by iterative design theory: we prototype, test, refine, and deliver. We continue that cycle throughout the overall work plan until we arrive at the final products. In this case we have organized the work in five main tasks:

T1 Review and Setup (September 1 - October 31, 2013)
By a strategic reflection on the review of existing initiatives on data visualization and related digital humanities project and previous experiences, this task will define guidelines for the project while anticipating the obstacles that the project could encounter. This task involves three activities: State of the art review; Review of visualization tools and case studies; Defining requirements and project guidelines.

T2. Design (November 1, 2013 - February 28, 2014)
Goal of this task is to proceed from the requirements and the guidelines defined in T1 to the actual specifications of the visual components and the integrated environment that will be implemented in T2 and T3. By making use of traditional user experience design tools (wireframes, mockups, prototypes), this task aims at defining the purposes, the behavior and the actual visual design of the components. A

strategy for the integration of linked data sources within the integrated environment will be defined here. Design specifications will be the main output of this task. This task involves two activities: Definition of individual components and integrated environment; Defining environment specifications and linked data integration; Designing components (visualization and interaction features).

T3 Developing components and testing (February 1 - May 31, 2014)

Starting from the design specifications defined in T2, this task will be focused on the actual development of the components. This process will follow iterative loops between developing and designing phases through a continuous prototyping of the components. A formal 3-day user test will be conducted in the final part of the task. This task involves two main activities: Developing individual components; Testing (formal evaluation process with User-Tester data)

T4 Revisioning components and developing integrated environment (June 1 - August 31, 2014)

This task will start with a review of the current development of the components and the results of the test conducted in T3. Possible revisions and corrections could be performed here. Meanwhile, the development of the integrated environment will be implemented. Linked data sources will be integrated according to the design strategy.

T5 Documentation and launch (September 1 - December 31, 2014)

This final task will be mainly focused on gathering and distributing the results of the project, by providing an adequate documentation of the components and the environment and by officially launching it. A second formal user test will be performed; the results will inform the documentation and user experience.

The greatest risk we face in completing this project on schedule is the possibility of losing members of the core team to other commitments. We have intentionally kept the project team small and co-located to minimize coordination costs, which tend to be great with larger projects or those with staff working at a distance from each other. We are fortunate to have well-established partnerships in place and strong commitments to this work from those individuals and groups we have already identified to staff the team. Though we have not yet identified a specific individual to hire as our developer, we are located in Silicon Valley where programmers tend to flock. Our partner labs within CESTA, the Stanford Literary Lab and the Spatial History Lab, have both had success finding expert technical staff for their projects and we expect the same result.

Evaluation of the work will first benefit from regular presentation and review with our partners within CESTA and in scheduled meetings and review sessions with our user-testers at many points over the 16 month period of the grant. We will bring remote User-Testers to Stanford to workshop the tools during T3. After the second development phase (T4) and after written documentation is completed, we will conduct a series of formal online evaluations with User-Testers. This second evaluation will inform the final documentation and online tutorials.

Staff

Dan Edelstein (PI) and Paula Findlen (Co-PI) will shape and shepherd the humanities research agenda underlying this project, while Nicole Coleman will oversee the project from the development of the visual components and web-application through dissemination of final products, as well as the

recruitment and supervision of hired staff. Melanie Conroy (Post-doctoral research fellow, Stanford) will liaise with user-testers and aggregate results of testing throughout the project, in addition to bringing her own case study as an embedded User-Tester. A TBN postdoctoral research fellow (anticipated to be (b) (6)   ) will lead the design process including the integration of user-tester participation and feedback into final products. Glauco Mantegari (currently a post-doctoral research fellow, Stanford) will be hired as a consultant to work on the integration of linked-data resources; coordination with Stanford University Library and other partners around linked-data exchange; and defining appropriate ontologies using existing models. A TBN programmer will work with the team to develop and implement the design specification as code.

Final Products and Dissemination

This project will produce four products.

1.The visualization techniques built into fully functional components, ready for integration into any web environment. The source code and documentation will be made publicly and freely available online through GitHub for download, distribution, and for continued contributions and modifications.

2. Open web access to the visualization tools, where scholars can upload their own data, carefully designed for ease-of-use and clarity of purpose. The user interface will walk users through the steps with explanation of how the visualization tools work. This website will be built upon an existing platform which already provides the underlying functionality to support uploading data and reconciling it against linked-data resources. For scholars interested in visualizing their own data set, this web application would allow them to : 1) upload data, matching fields to base schema (and adding new fields where desired); 2) reconcile person names and place names in the data set to linked data resources; 3) choose mode of visualization (network views, chronological views, and cartographic views); 4) export visualizations (SVG format) and the linked data enriched data set as csv or other common text-based format useful for manipulation in external applications.

 3. An iteration of the web application, pre-loaded with a large collection of early modern data. This will allow scholars working on the early modern period to use these tools in the context of the large data store of people, places, events, and publications already contributed to and collected by the "Mapping the Republic of Letters" project. *Data collection and data management are not part of this proposal.*

4. A white paper detailing the specification and implementation of visual design of data for humanities research. The paper will document the design and development process with special attention to the implications of the designs for humanities research using examples from our case studies and expert evaluations.
          We will also produce articles and conference papers sharing new research that emerges from use of the tools for both the humanities and information design communities. We are committed to expanding the dialogue between humanities scholars and designers about how humanistic methods can bring new approaches to data exploration and analysis.

Sustainability plan

This proposal represents the next step in what we intend to be a multi-stage process for developing visualization tools and enhancing the features of the web-application architecture. The proposed project work will take place within the context of "Mapping the Republic of Letters" project in the Humanities + Design Research Lab. As mentioned above, the lab is one of three labs engaged in digital humanities work that have been recognized and supported by the Dean of Research at Stanford. We have been guaranteed continued support for the foreseeable future in the form of staff and facilities.

At this stage, a significant part of our sustainability plan relies upon the wide adoption of our visualization techniques for interpreting historical data. The products of this proposal will be made freely and publicly available in such a way as to encourage others to use and build upon our work, hopefully broadening not only the user-base, but also the developer-base.

In support of that goal, we are committed to disseminating the results widely. We are providing both conceptual models and functional tools for practical use. In our work plan (above) we have allotted significant time to documentation and to online tutorials to make the component tools easy to use. The components will be built in javascript, css and html, all web-standard languages commonly used with minimal dependencies to make them easy to adopt and adapt to existing websites.

Another key part of our sustainability plan has to do with making the visualizations, the underlying data model, and the web-application "linked-data ready." Though our existing web-application currently hosts a collection of early modern data sets, it is not part of our plan to become a data store for early modern data. We make it clear to users that while we do not delete data, we make no promise to maintain it. Instead, we will be developing the visualizations and the underlying data models with linked-data compatibility in mind, so that as more cultural heritage and library metadata becomes available as linked-data, we will be prepared to make those connections, both to draw in data and to contribute data back.

At this stage the web-application provides only very basic user management and data management features sufficient to reliably maintain a user session long enough to reconcile against locally cached (where necessary) linked data resources. In a future development phase we will seek funding for a more robust user and data management system that will allow users to return and revisit their work in this web environment.

Data management plan

All products and deliverables created during the course of the project will be made freely and publicly available. Stanford University Libraries has also agreed to put all the products (source code, documentation, images, etc.) time-stamped at the end of the grant period, in a dark archive for long-term storage.

1. The white paper, as well as any reports, articles, and research notes, will be hosted on a Stanford University web site dedicated to this project and stored in the Stanford Digital Repository.

2. The source code for the components will be documented and made freely available for download, reuse, and modification in a public repository at GitHub, a cloud repository service widely used in software development. A snapshot of the source code and documentation at the close of the grant period will be stored in the Stanford Digital Repository.

3. Though the web-application development is not part of this grant proposal (see section 5 above), it is the platform upon which we will integrate the visual components, so we will make the source code for the web-application, including documentation, available for download, reuse, and modification in a public repository at GitHub. A snapshot of the source code and documentation at the close of the grant period will be stored in the Stanford Digital Repository.

NATIONAL ENDOWMENT FOR THE humanities

Budget Form

Applicant Institution: *Stanford University*
Project Director: *C. Nicole Coleman*
Project Grant Period: *09/01/2013-12/31/2014*

click for Budget Instructions

	Computational Details/Notes	(notes)	Year 1 01/01/20__ - 12/31/20__	(notes)	Year 2 01/01/20__ - 12/31/20__	(notes)	Year 3 01/01/20__ - 12/31/20__	Project Total
1. Salaries & Wages								
Edelstein, Dan (PI)	Academic Months	10%	(b) (6)	10%	(b) (6)	%		(b) (6)
Edelstein, Dan (PI)	Summer Months	10%	(b) (6)	10%	(b) (6)	%		(b) (6)
Findlen, Paula (Co-PI)	Academic Months	10%	(b) (6)	10%	(b) (6)	%		(b) (6)
Findlen, Paula (Co-PI)	Summer Months	10%	(b) (6)	10%		%		(b) (6)
Coleman, Nicole (Project Director		60%	(b) (6)	60%	(b) (6)	%		(b) (6)
Conroy, Melanie (Postdoc) (1)		100%	$14,875	100%	$45,964	%		$60,839
TBN (Postdoc) (1)		100%	$14,215	100%	$43,924	%		$58,139
TBN (Programmer) (1)		100%	$21,667	100%	$66,950	%		$88,617
TBN (Administrator) (1)		10%	$1,220	10%	$3,770	%		$4,990
TBN (Finance Administrator) (1)		10%	$1,500	10%	$4,635	%		$6,135
2. Fringe Benefits								
Staff Benefit rates	Staff Benefit Rates	30 3%	(b) (6)	30 3%	(b) (6)			(b) (6)
Postdoc Benefit Rates	Postdoc Fringe Benefit Rates	28.40%	$8,262	28.4%	$25,528			$33,790
3. Consultant Fees								
Glauco Mantegari	(b) (4), (b) per hour				(b) (4), (b) (6)			(b) (4), (b) (6)
4. Travel								
Domestic Travel	Program direct to NEH Meeting				$1,090			$1,090
Domestic Travel- Various	Domestic testers to come to Stanford for a 3 day workshop (Total of 3 people)				$4,260			$4,260
International Travel- Various	International testers to come to Stanford for a 3 day workshop (Total of 4 international visitors)				$11,880			

5. Supplies & Materials								
					$0			$0
6. Services								
					$0			$0
7. Other Costs								
Catering expenses for Stanford 3 day workshop	Lunch and dinner expenses for Stanford 3 day user teser workshop				$2,170			$2,170
8. Total Direct Costs	**Per Year**		$116,801		$411,596		$0	**$528,397**
9. Total Indirect Costs								
Waived to 10% IDC	**Per Year**	10%	$11,681		$41,160		$0	**$52,841**
10. Total Project Costs		(Direct and Indirect costs for entire project)						**$581,238**

11. Project Funding	**a. Requested from NEH**	Outright:	$297,137
		Federal Matching Funds:	$0
		TOTAL REQUESTED FROM NEH:	**$297,137**
	b. Cost Sharing	Applicant's Contributions:	$284,101
		Third-Party Contributions:	$0
		Project Income:	$0
		Other Federal Agencies:	$0
		TOTAL COST SHARING:	**$284,101**
12. Total Project Funding			**$581,238**

Total Project Costs must be equal to Total Project Funding ---->   ($581,238   = $581,238   ?)

Third-Party Contributions must be
greater than or equal to Requested Federal Matching Funds ---->   ($0   ≥ $0   ?)

Budget narrative

Salaries & Wages:

Dan Edelstein, PI

PI Edelstein will participate on the project 10% time during the academic year and 10% time on the project during the summer. Dan will shape and shepherd the humanities research agenda underlying this project and bring his own research projects to the testing and evaluation at all stages of the project. PI salary for the academic months will be cost-shared by Stanford University. PI salary for the summer months will be directly charged to the project.

Paula Findland, Co-PI

PI Findland will each participate at 10% time during the academic year and will also work on the project during the summer. Paula will also shape and shepherd the humanities research agenda underlying this project and bring her own research projects to the testing and evaluation at all stages of the project. Co-PI salary for the academic months will be cost-shared by Stanford University. Co-PI salary for the summer months will be directly charged to the project.

Nicole Coleman, Project Director

Nicole is a Stanford University employee with a full-time exempt academic staff position and will dedicate 60% time to this project for the 16 month duration. Nicole will oversee the project from the development of the visual components and web-application through dissemination of final products, as well as the recruitment and supervision of hired staff. Project Director Nicole Coleman's salary will be cost-shared by Stanford University.

Melanie Conroy ,Postdoctoral Fellow

Postdoctoral Melanie Conroy will participate 100% time (4 months in year 1 and 12 months in year 2) at a rate of $44,625 in accordance with Stanford University's Postdoctoral Research Scholar Required Funding Levels - 2012-2013 for a postdoctoral researcher with 1 yr experience. Melanie will liaise with user-testers and aggregate results of testing throughout the project, and take the lead in creating the documentation and tutorials directed at scholar-users. She will also bring her own case study as an embedded User-Tester.

TBN, Postdoctoral Research Fellow (anticipated to be (b) (6)   )

TBN, postdoctoral fellow will participate at 100% time for 16 months from September 1, 2013-December 31, 2014, 2014 will lead the design process in meeting milestones, as well as the integration of user-tester participation and feedback into final products. The TBN postdoc's salary and fringe benefits will be cost-shared by Stanford University CESTA lab (Center for Spatial and Textual Analysis).

TBN, Programmer
We have budgeted for a full-time programmer at $65,000 according to salaries with comparable skills and job descriptions within CESTA. The programmer will contribute to the component specification and will be responsible for implementing the design specifications as code. This effort includes contributing to internal documentation and confirming program operation by conducting tests and modifying as necessary.

TBN, Administration
The project will be supported administratively with 10% time of an administrative associate as well as 10% time of a financial manager to be hired by March 2013.

Consulting:
Glauco Mantegari, has agreed to work on this project as an independent contractor at the rate of [(b) (4), (b) (6)] hour. Total fees for the consulting cost will not exceed [(b) (4), (b) (6)]. Glauco Mantegari will be hired as a consultant to work on: the integration of linked-data resources; coordinating with Stanford University Library and other partners around linked-data exchange; and defining appropriate ontologies using existing models.

Travel:
NEH-required meeting in Washington, DC:
The travel budget includes the required trip for the Project Director to attend a one-day NEH-sponsored meeting in Washington, DC, including two nights lodging and two days per-diem. Airfare is estimated at $500 round trip from San Francisco. Lodging is estimated at $224 per night. Per-diem is estimated at the rate of $71 per day.

Three day User-tester workshop at Stanford:
The budget includes travel expenses to Stanford for four international user testers to participate in a 3 day user-tester workshop. The international participants we expect to invite to the 3 day workshop will be Irène Passeron and Nicolas Rieucau from Paris, Paolo Ciuccarelli from Milan and Eero Hyvönen from Helsinki. Airfare is estimated at $2,000/ person, plus 5 nights lodging ($150/night) and local transportation ($220/person). We are requesting funds from NEH for the travel cost associated with two international user testers ($5,940). Stanford University will cost-share the travel expenses for two international user testers ($5,940).

The budget includes travel expenses to Stanford for three domestic user testers to participate in the 3 day workshop. Airfare is estimated at $600/person, 4 nights lodging is estimated at $150/person and local transportation is estimated at $220/person.

Other:
Catering expenses for the 3 day user-tester workshop is estimated at $2,170. This includes for 3 lunches and two dinners for 12 people.

Dan Edelstein

Department of French and Italian   danedels@stanford.edu
Division of Literatures, Languages, and Cultures (DLCL)   Office phone: (650) 724-9881
Stanford University   Stanford, CA 94305-2010

Academic positions

Associate professor of History, by courtesy, Stanford University	2011-
Associate professor of French, Department of French and Italian, Stanford	2010-
Senior NEH Fellow, Department of Romance Languages, University of Chicago	2009-2010
Assistant professor of French, Department of French and Italian, Stanford	2004-2010

Education

University of Pennsylvania	
Ph.D. in French	2004
Université de Genève, Switzerland	
Licence ès Lettres (French, English, Latin)	1999

Prizes and awards (selected)

Dean's Distinguished Teaching Award, Stanford University	2011
Oscar Kenshur Book Prize, for *The Terror of Natural Right* ASECS/The Center for Eighteenth-Century Studies at Indiana University	2010
William Koren, Jr. Prize, honorable mention, for best published article in French history	2009
Walter J. Gores Award, highest award for excellence in teaching, Stanford University	2006

Fellowships and grants (selected)

Online Education Initiative grant, Stanford University	2012-2013
Digging Into Data Challenge Grant, National Endowment for the Humanities (NEH) For "Digging Into the Enlightenment"	2010-2011
National Forum on the Future of Liberal Education Fellow, Teagle Foundation	2010-2012
NEH Fellowship at a Digital Humanities Center The ARTFL project, University of Chicago	2009-2010
Presidential Fund for Innovation in the Humanities Grant, Stanford	2008-2011
Stanford Humanities Center Fellowship	2008-09
Fulbright Fellowship (at Université Paris III-Sorbonne Nouvelle)	2002-03

Books

The Enlightenment: A Genealogy (Chicago: University of Chicago Press, 2010).
    Reviews: *Eighteenth-Century Studies* (review article), *Modern Language Notes*, *Journal of Modern History*, *Journal of European Studies*, *Modern Intellectual History* (forthcoming), *Annales HSS* (forthcoming), *Contributions to the History of Concepts*.

The Terror of Natural Right: Republicanism, the Cult of Nature, and the French Revolution (Chicago: University of Chicago Press, 2009). Paperback 2010.
    Reviews (selection): *The Nation*, *American Historical Review* (featured review), *Annales HSS*, *Journal of Modern History*, *Social History*, *Modern Intellectual History* (forthcoming), *Annales historiques de la Révolution française*, *French Forum*, *La vie des idées*, *H-Net*, *H-France*, *Esprit Créateur*, *Small Wars Journal*.

Edited volumes

Scripting Revolution, ed. with Keith Baker (Stanford: Stanford University Press, forthcoming).

The Super-Enlightenment: Daring To Know Too Much, editor, SVEC 2010:01 (Oxford: Voltaire Foundation, 2010).

Reviews: *American Historical Review* (forthcoming), *Journal of Modern History*, *Journal of Eighteenth-Century Studies*, *Dix-huitième siècle, French Studies*, *Modern Language Notes*, *The English Historical Review*.

Myth and Modernity, ed. with Bettina Lerner, Yale French Studies 111 (New Haven: Yale University Press, 2007).

Recent articles and book chapters

"Subversive Conservatives: Political Thought in the French Enlightenment," *The Cambridge Companion to the French Enlightenment*, ed. Daniel Brewer (Cambridge: Cambridge University Press, forthcoming).

"Enlightenment Rights Talk," *Journal of Modern History* (forthcoming).

"To Quote or Not to Quote: Citation Strategies in the *Encyclopédie*," with Robert Morrissey and Glenn Roe, *Journal of the History of Ideas* (forthcoming).

"A Response to Jonathan Israel," in *Self-Evident Truths? Human Rights and the Enlightenment*, Oxford Amnesty Lectures 2009, ed. Kate Tunstall (London: Bloomsbury Press, 2012).

"Do We Want a Revolution Without Revolution? Reflections on Political Authority," *French Historical Studies* 35, no. 2 (2012): 269-89. [link]

"The Classical Turn in Enlightenment Studies," *Modern Intellectual History* 9, no. 1 (2012): 61-71. [link]

Upcoming invited lectures

"How to Read a Million Letters."   April 2013
    Institute for Quantitative Theory and Methods, Emory University

"The Myth of Revolution."   April 2013
    Humanities Center, California State University at Chico

"Digital Humanities and Intellectual History."   April 2013
    History Department, Princeton University

"Mapping the Republic of Letters."   April 2013
    Center for Cultural Analysis, Rutgers University

"Enlightenment Rights Talk."   March 2013
    Eighteenth-Century Interdisciplinary Salon, Washington University in St. Louis

"In the Name of Revolution."   March 2013
    Interdisciplinary Project in the Humanities, Washington University in St. Louis

Digital projects

Mapping the Republic of Letters (Principal Investigator, with Paula Findlen and Nicole Coleman): funded by a three-year Presidential Fund for Innovation in the Humanities grant, a NEH "Digging Into Data Challenge" grant, and currently by the Stanford Dean of Research, this project uses visualizations to map the correspondence networks, travel itineraries, imaginary geographies, and book distribution of early-modern Europe and America: http://republicofletters.stanford.edu/

Republics of Letters (founder and editor) is an online, peer-reviewed, open-access scholarly journal dedicated to the study of knowledge, politics, and the arts, in their changing historical and cultural configurations; sponsored by the DLCL at Stanford University: http://rofl.stanford.edu.

The Super-Enlightenment Project, in collaboration with Stanford University Libraries: a full-text searchable archive of "illuminist" late-18th-century texts: http://collections.stanford.edu/supere.

The French Revolutionary Digital Archive, in collaboration with Stanford University Libraries, the Bibliothèque nationale de France, ARTFL, and the Institut d'Histoire de la Révolution française (Paris-Sorbonne I): full-text searchable versions of the *Archives parlementaires*, other revolutionary archives, and an image gallery of 14'000 prints: prototype accessible at http://artfl-project.uchicago.edu/node/94.

Paula Findlen

EDUCATION
Ph.D., University of California, Berkeley, 1989 (History)
M.A., University of California, Berkeley, 1985 (History)
B.A., Wellesley College, 1984 (Medieval/Renaissance Studies)

EMPLOYMENT AND TEACHING
Ubaldo Pierotti Professor in Italian History, Stanford University, 2002-present
Professor of History (and Italian, by courtesy), Stanford University, 1999-2002
Associate Professor of History, Stanford University, 1996-99
Assistant to Full Professor of History, University of California, Davis, 1989-96

ADMINISTRATIVE POSITIONS
Director, Patrick J. Suppes Center for the History and Philosophy of Science, 2012-15
Chair, Department of History, 2008-11
Co-Director and Co-Founder, Center for Medieval and Early Modern Studies, 2006-10
Co-Director, Program in the History and Philosophy of Science, 2004-07, 10-11
Co-Director, Science, Technology and Society Program, Stanford University, 1999-2003

SELECTED VISITING PROFESSORSHIPS AND ENDOWED LECTURES
Faber Lecture in Renaissance Studies, Princeton University 2012-13
Mellon Lectures in the History of Science, University of Pittsburgh, October 2012
Josephine Walters Bennett Lecturer, Renaissance Society of America, March 2012
Shulman Lectures in Science and Humanities, Yale University, April 2010
Huygens-Descartes Lecture, Royal Academy, The Netherlands, June 2009
Distinguished Visiting Lecturer, UT Austin Humanities Institute, May 2008
Douglas Southall Freeman Visiting Professor, University of Richmond, fall 2005
Visiting Professor, Folger Shakespeare Library, spring 2003
Professeur Associé, École des Hautes Études en Sciences Sociales, Paris, France, 2002
Visiting Professor, University of Groningen, Netherlands, November 2000
Lecturer, International Summer School for the History of Science, Uppsala, 1998
Dibner Lecturer, History of Science Society, 1996-98
Visiting Associate Professor, Dept. of the History of Science, Harvard University, fall 1994

ACADEMIC HONORS AND AWARDS

Awards and Prizes:
Kahn-Van Slyke Award for Graduate Mentorship 2012
Margaret W. Rossiter History of Women in Science Prize for best article in a three-
    year period (History of Science Society) 2004
Pfizer Prize for best book in a three-year period (History of Science Society), 1996
Howard Marraro Prize for best book in Italian History
    (American Catholic Historical Association) 1995
Derek Price Prize for best article (History of Science Society) 1995
Nelson Prize for best article (Renaissance Society of America) 1990

Selected Research Grants and Fellowships:
Ellen Andrews Wright Senior Fellow, Stanford Humanities Center 2011-12
NEH "Digging into the Data" Grant2010-11 (Co-PI, "Mapping the Republic of Letters")

Presidential Fund for Innovation in the Humanities, Stanford University 2008-11
Gladys Krieble Delmas, Foundation Grant 2008-09, 2011-12
Invited Fellow, Center for Advanced Studies in the Behavioral Sciences 2007-08
American Council of Learned Societies Senior Fellowship 2003-04
American Philosophical Society Sabbatical Fellowship, 2003-04
Guggenheim Fellow 1998-99
Stanford Humanities Center Fellowship 1998-99
Invited Scholar, Getty Center Senior Scholar-in-Residence 1995-96
American Council for Learned Societies Fellowship 1992-93
American Philosophical Society Grant 1992-93
Fulbright Research Grant (Italy) 1987-88

SELECTED PUBLICATIONS

1. *Possessing Nature: Museums, Collecting and Scientific Culture in Early Modern Italy* (Berkeley: University of California Press, 1994; paperback edition, 1996) [awarded the 1995 Howard Marraro Prize in Italian History and 1996 Pfizer Prize in History of Science] Japanese edition: Tokyo: Arina Shobo, 2005; partial Spanish translation in *Productiones de sentido II: algunos conceptos de la historia: antologia*, ed. Valentina Torres Septién (Mexico City: Universidad Iberoamericana, 2006).

2. (with Pamela Smith, ed.), *Merchants and Marvels: Commerce, Science, and Art in Early Modern Europe* (New York: Routledge, 2002)

3. (ed.) *The Italian Renaissance: Essential Readings* (Oxford: Blackwell, 2002)

4. (with Michelle Fontaine and Duane Osheim, eds.), *Beyond Florence: The Contours of Medieval and Early Modern Italy* (Stanford: Stanford University Press, 2003)

5. (ed.) *Athanasius Kircher: The Last Man Who Knew Everything* (New York: Routledge, 2004)

6. (with Rebecca Messbarger, eds. and trans.) Maria Gaetana Agnesi et. al., *The Contest for Knowledge: Debates about Women's Education in Eighteenth-Century Italy* (Chicago: University of Chicago Press, 2005)

7. (with Catherine Sama and Wendy Roworth, eds.) *Italy's Eighteenth Century: Gender and Culture in the Age of the Grand Tour* (Stanford: Stanford University Press, 2009).

8. (ed.) *Early Modern Things: Objects and Their Histories, 1500-1800* (London: Routledge, 2013).

9. English translation of Renata Ago, *Gusto for Things: A History of Objects in Seventeenth-Century Rome*; foreword by Paula Findlen, translation by Brad Bouley, Corey Tazzara, with Paula Findlen) (Chicago: University of Chicago Press, 2013)

10. Paula Findlen, Ian Rolfe et.al. *The Paper Museum of Cassiano dal Pozzo: A Catalogue Raisonné. Series B ~ Natural History, Part V. Fauna, Minerals and Natural Curiosities*. (London: The Royal Collection with Harvey Miller Publishers, forthcoming)

Articles, Encyclopedia Entries and Book Reviews:
I have published 89 articles, 21 encyclopedia entries and approximately 80 book reviews.

Catherine Nicole Coleman

Stanford Humanities Center, 424 Santa Teresa Street, Stanford, CA 94305-4015
cncoleman@stanford.edu

POSITION

Academic Technology Specialist Program Manager, Stanford University Libraries (2006-present)
Academic Technology Specialist, Stanford University, Stanford Humanities Center (2003-present)

EDUCATION

University of California, Berkeley, B.A. Humanities (1989)
Franklin College, Switzerland, A.A. (1987)

RESEARCH SUPPORT ACTIVITIES

Humanities + Design, Founder/Director (2012-present)
with Dan Edelstein and Paula Findlen. H+D is both a laboratory and a programmatic effort to produce, through the lens of humanistic inquiry, new modes of thinking in design and computer science to serve data-driven research in the humanities. Funded by the Dean of Research.
hdlab.stanford.edu

SEASR (2012-present)
Co-manging (bringing to completion) with Glen Worthey a $790,000 grant from the Mellon Foundation awarded to Stanford, the University of Illinois, the University of Maryland, and George Mason to advance the prior work of the SEASR project.
seasr.org

Visualizing Complexity and Uncertainty Research Workshop, Coordinator (2012-present)
with Zephyr Frank. Part of the Stanford Humanities Center's Research Workshop Program, we have brought astrophysicists, biologists and visual theorists to a discussion with historians about visual representations of uncertainty and ambiguity in data.
visualizing.stanford.edu

Mapping the Republic of Letters, Co- Investigator & Technical Lead (2009-present)
with Dan Edelstein and Paula Findlen. Funded by a three-year Presidential Fund for Innovation in the Humanities grant, a NEH "Digging Into Data Challenge" grant, we are mapping correspondence, travel, and publication data about individuals in early-modern Europe and America.
republicofletters.stanford.edu

Early Modern Time & Networks Research Workshop, Organizer & Instructor (August 2012)
A two-week intensive workshop combining a seminar series with laboratory work to create tools for humanities research defined by humanities research questions and involving humanities scholars in the design and development process.
athanasius.stanford.edu

Visualizing Complexity and Uncertainty Research Workshop, Coordinator (2011-2012)
with Richard White and Zephyr Frank. Part of the Stanford Humanities Center's Research Workshop Program, this workshop engaged performance artists, performing artists, and documentary filmmakers with historians to explore means of representing uncertainty.
visualizing.stanford.edu

Stanford Map Warper, Project Coordinator (2010-2011)
with Julie Sweetkind-Singer, Henry Lowood, and Jon Christensen. Funded by Tooling Up for Digital Histories, Map Warper was a collaboration with the New York Public Library, EntropyFree, and Stamen Design to build a web-based image rectifier to complement Stanford's growing digital map collection.
mapwarper.stanford.edu

GIS Special Interest Group/Spatial SIG, Organizer (2009-2011)
Initiated in collaboration with Claudia Engel (Academic Technology Specialist, Anthropology) and funded by the Stanford Humanities Center and the Institute for Research in the Social Sciences, we held a series of presentations of work-in-progress to promote the exchange of spatial analysis tools and methods between the humanities and social sciences.
gissig.stanford.edu

Humanities Research Network, Project Lead (2006-2011)
This Stanford Humanities Center project continues to support a number of research projects that involve collaboration at a distance. The project provided seed funding and online tools for co-authoring, versioning, file-sharing and simultaneous chat.
humanitiesnetwork.org

ARTICLES, LECTURES, CONFERENCE PAPERS & INVITED TALKS 2011–2012

Visualizations and Interfaces for Humanities Research, with Giorgio Caviglia and Paolo Ciuccarelli (forthcoming in *Proceedings of the 4th International Forum of Design as a Process,* September 19-22 2012, Brazil)

Building Visual Tools for Qualitative Research with Big Data (Chicago Colloquium on Digital Humanities & Computer Science, University of Chicago, November 17-19, 2012)

Mapping the Republic of Letters (Victoria University of Wellington, New Zealand eResearch Symposium, July 4-6, 2012)

What does history look like? (Stanford Humanities Center, Stanford University, June 5, 2012)

Visualizing Uncertainty in the Republic of Letters (Visualizing Data Resources, University of Erfurt, Gotha, Germany, April 27-28, 2012)

Nella rete del grande illuminista (La Lettura, *Corriere della Sera*, April 8, 2012)

Mapping the Republic of Letters (Where is the Letter?, International Conference at the National Library, Oslo, February 16-17, 2012)

Mapping the Republic of Letters (The Challenge of Historical Cartography, University of Cologne, November 25-26, 2011)

Building a Spatial History of the Grand Tour, with Giovanna Ceserani and Sarah Murray (Modern Journeys to Ancient Lands Conference, Stanford, Oct. 2011)

The Role of Design in Humanities Research (Stanford Humanities Center, Stanford, October, 2011)

Visualizing Visualizing Uncertainty and Complexity:Humanistic Methods for Mapping the Intellectual Geography of the Early Modern World, with Paolo Ciucarelli, Johanna Drucker, and Charles van den Heuvel (Intellectual Geography: Comparative Studies, 1550-1700 Conference, St Anne's College, 5-7 September 2011)

Visualization, the Eye of History (Stanford Humanities Center, Stanford University, Stanford, May, 3rd, 2011)

MELANIE CONROY

Thinking Matters Program
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Stanford, CA 94305-2012

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fax: 650 723-4463
email: mrconroy@stanford.edu

EDUCATION

Ph.D. French, Stanford University, 2012.
> Dissertation: *The Afterlife of the Aristocracy: Nobility in French Literature from Balzac to Proust.*
> Committee: Joshua Landy (chair), Dan Edelstein, Hans Ulrich Gumbrecht, Laura Wittman.

M.A., Littérature française, Université de Paris VIII, Saint-Denis, 2006.
> Thesis: *Le cercle vicieux:* Le Baphomet *de Pierre Klossowski*, adviser: Jean-Michel Rey.

M.A., Department of Comparative Literature, SUNY Buffalo, NY, 2005.

B.A. (Hons), Department of English and Creative Writing, University of Alberta, Edmonton, Canada, 2000.

RECENT ACADEMIC POSITIONS

2012-present	*Thinking Matters* Program, Stanford University.
	Courses: Education as Self Fashioning: Learning for Public Life; The Poet Remaking the World; Networks: Ecological, Revolutionary, Digital.
2012-present	Lab Manager, Humanities + Design, CESTA, Stanford University.
2012	Digital Humanities Fellow, Early Modern Time + Networks, Stanford University
2011-2012	Whiting Fellow, Stanford University

RESEARCH AND TEACHING INTERESTS

French language and literature; nineteenth- and twentieth-century French and European cultural history; modern intellectual history and political philosophy; the realist and late-Romantic novel; realist cinema (Renoir, Truffaut, Chabrol); theory of novel and narratology; popular theater and the vaudevilles; elite sociability; women's history and literature; literature and finance; social networks and digital humanities.

BOOK MANUSCRIPT

The New Aristocrats, 1830-1914

My first book tracks the reconsideration of the French aristocracy in nineteenth- and early twentieth-century fiction, examining shifts in representation to show how and why nobility remained a persistent fantasy. Analyzing an array of popular and canonical texts, including works by Scribe, Balzac, Delphine de Girardin, Hugo, Renoir, Proust, and Robbe-Grillet as well as popular theater, satires, caricature, and aristocratic memoirs, I argue that literature was an ideal medium for sorting through the elements of this fantasy, and that nobility outlived the aristocracy because it was a utopian discourse of perfectibility, rather than a reactionary project.

PUBLICATIONS + PROJECTS

The Salons Project, part of the *Mapping the Republic of Letters* project, Stanford University, 2012:
> https://republicofletters.stanford.edu/

"Comment se vendre: L'escroquerie et le marketing dans *La vie publique et privée de Mossieu Réac* de

Nadar," [forthcoming in *Médias 19*]

"Figuring Consciousness: French Realism and the Inward Turn." [forthcoming in *Poetics Today*]

"Spontaneity and Moral Certainty in Benjamin Constant's *Adolphe*," in *Nineteenth-Century French Studies*, 40: 3-4, pp. 222-238.

RECENT CONFERENCE PRESENTATIONS

"Literary Salons, Bourgeois Cercles: Social Networks and the Aesthetics of the Post-Revolutionary Salon," American Comparative Literature Association, University of Toronto, April, 2013.

"Mapping French Salons: 1700-1914," LENS Mapping People Symposium, University of Redlands, Redlands, CA, October, 2012.

"The *bal bourgeois*: Taste, Excess, and Social Distinction," Nineteenth-Century French Studies Conference, Raleigh, NC, October, 2012.

"Comment se vendre : L'escroquerie et le marketing dans 'La vie publique et privée de mossieu Réac' de Nadar," Presse, prostitution, bas-fonds dans l'espace médiatique francophone, Colloque international, Québec, Canada, June, 2012.

"Enrichissez-vous: Speculation in the comédies-vaudevilles and Balzac," American Comparative Literature Association, Providence, RI, March, 2012.

"The Melodrama of History: Carlyle, Dickens, and Sand on the Morality of the Revolution," Modern Language Association, Seattle, WA, January, 2012.

"French Salons and Utopian Ideals," French Culture Workshop, Stanford University, CA, December, 2011.

"Above the Law: Reviving the Marquise de Brinvilliers," Nineteenth-Century French Studies Conference, Philadelphia, PA, October, 2011.

"French Salons: Death or Renewal? The Case of Sophie Gay and Delphine de Girardin," Humanities Education and Research Association, San Francisco, CA, February, 2011.

"Is Socialism the Opiate of the Masses?: Politics as Religion," Modern Language Association, Philadelphia, PA, December, 2009.

"The Cult of the Nobility: Nineteenth-Century Heraldry and Arms," Nineteenth-Century French Studies Conference, Salt Lake City, Utah, October, 2009.

"Balzac and the Stock Market," Nineteenth-Century French Studies Conference, Salt Lake City, UT, October, 2009.

REFERENCES

Joshua Landy (landy@stanford.edu), Department of French and Italian, Stanford University

Dan Edelstein (danedels@stanford.edu), Department of French and Italian, Stanford University

Hans Ulrich Gumbrecht (sepp@stanford.edu), Department of French and Italian, Stanford University

Laura Wittman (lwittman@stanford.edu), Department of French and Italian, Stanford University

Nicole Coleman (cncoleman@stanford.edu), Humanities + Design, CESTA, Stanford University

LANGUAGES

English (native) and French (near-native); reading knowledge of German, Latin, and Spanish.

Glauco Mantegari

Personal Information

Date of birth	(b) (6)
Nationality	(b) (6)
Address	(b) (6)
Office address	Stanford University
	Center for Spatial and Textual Analysis
	Building 160, Room 228
	450 Serra Mall
	Stanford, CA 94305-2055
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Education

Dec. 2012–April 2013 (expected)	**Certificate Program on Innovation and Entrepreneurship**, *Stanford Ignite*, Stanford Graduate School of Business.
2006–2010	**PhD**, *Doctoral and Advanced Research Program in "Information Society"*, University of Milano-Bicocca, Department of Informatics, Systems, and Communication, Milan (Italy).
May 2009–July 2009	**Researcher**, Aalto University School of Science, Department of Media Technology, Semantic Computing Research Group (SeCo), Espoo (Finland).
Nov. 2003–Nov. 2004	**Postgraduate Course**, *Computer Science for Humanists*, University of Milano-Bicocca, Department of Informatics, Systems and Communication, Milan (Italy).
1997–2003	**Laurea**, *Classics*, University of Milano, Faculty of Arts and Humanities, Milan (Italy).

Academic Fellowships

Aug. 2012–Aug. 2013	**Postdoctoral Fellowship**, *Stanford University*, Center for Spatial and Textual Analysis.
Nov. 2006–Oct. 2010	**PhD Fellowship**, *Italian Ministry of Education, Universities and Research (MIUR)*.
July 2006–Oct. 2006	**Research Fellowship**, *University of Milano-Bicocca*, Department of Informatics, Systems and Communication, Milan (Italy).

Work experience

Aug. 2012–present	**Postdoctoral Researcher**, *Stanford University*, Center for Spatial and Textual Analysis, Stanford, CA (USA).
Sep. 2011–July 2012	**Research Consultant**, *University of Milano-Bicocca*, Department of Informatics, Systems and Communication, Milan (Italy).

Feb. 2011–July 2011	**Research Consultant**, *Lombard Interuniversity Consortium for Automatic Computation (CILEA)*, Segrate (Italy).
Mar. 2010–May 2010 and Sep. 2010–Nov. 2010	**Research Consultant**, *Lombard Interuniversity Consortium for Automatic Computation (CILEA)*, Segrate (Italy).
Feb. 2010–Jan. 2011	**Research Consultant**, *University of Milano-Bicocca*, Department of Materials Science, Milan (Italy).
Feb. 2010–Jan. 2011	**Communication and PR Manager**, *Endian s.r.l.*, Bresso (Italy).
2001–2007	**ICT Consultant**, *University of Milano*, Department of Antiquities, Milan (Italy).
July 2006–Nov. 2006	**Research Fellow (temporary)**, *University of Milano-Bicocca*, Department of Informatics, Systems and Communication, Milan (Italy).
2006	**ICT Consultant**, *University of Milano*, Section of Indology and Sanskrit Literature, Milan (Italy).
2006	**ICT Consultant**, *University of Milano*, Library of the Departments of Antiquities and Department of Modern Philology, Milan (Italy).
2006	**ICT Consultant**, *University of Rome "La Sapienza"*, Chair of Roman Archaeology and Art History, Rome (Italy).
2002–2005	**Research Assistant**, *University of Milano*, Chair of Prehistory and Protohistory, Milan (Italy).

Publications Summary

27 publications, including journal papers, conference and workshop proceedings, co-edited volumes, and book chapters.

Talks Summary

10 invited talks, ca. 40 oral and poster presentations in conferences and workshops on Computer Science and applications in Cultural Heritage and the Humanities.

Languages

Italian, *Mother tongue.*
English, *Proficient user.*
French, *Independent user.*
Spanish, *Basic user.*

References

Prof. Eero Hyvönen. *Aalto University, Department of Media Technology. Espoo (Finland).* Email: eero.hyvonen@aalto.fi - Phone: +358 9.451.3362

Prof. Stefania Bandini. *University of Milano-Bicocca, Department of Informatics, Systems and Communication. Milan (Italy).* Email: bandini@disco.unimib.it - Phone: +39 02.6448.7835

Dott.ssa Emilia Groppo. *Lombard Interuniversity Consortium for Automatic Computation (CILEA). Segrate (Italy).* Email: e.groppo@cineca.it - Phone: +39 02.26995.243

Letters of commitment and support

Anthony Grafton
Henry Putnam University Professor of History, Princeton University

Mapping the Republic of Letters exemplifies the digital humanities at their most promising. It brings together distinguished scholars of different generations, all of whom have done highly original working using original methods, based at Stanford, with colleagues around the world, programmers and students: exactly the sort of novel, collaborative environment that sets the digital humanities apart from more traditional forms of research and teaching. It aims both to create new tools that will be readily accessible and easily usable, and to apply them to the analysis of massive bodies of data. The new tools in question make it possible to go beyond the traditional methods we have used in discussing intellectual groups--basically, qualitative description and tables--to provide visualizations that immediately clarify the nature of members' connections to one another, the intensity of their intellectual exchanges, the subjects that occupied them most and much more: above all, perhaps, the roles that some of them played as intermediaries and impresarios. As the project progresses, the tools are honed and the data enhanced, it will shed light not only on prominent figures, but also on those of the second rank, and the shapes of the groups they belonged to will emerge more and more clearly. The preliminary results the project has attained on Voltaire's networks, the Grand Tour and other subjects are unexpected and exciting: the future seems unlimited.

Groupe D'Alembert, CNRS, France

<div align="right">Paris, le 9 janvier 2013</div>

Exploring D'Alembert's Network through the MRofL visualizations tools: main issues and dreams

Group D'Alembert (CNRS, France) brings together forty researchers around the annotated and critical edition of the Complete Works of D'Alembert (1717-1783), in sixty volumes of scientific literature, encyclopedias, academic, literary and historical. Six volumes have been published by CNRS Editions since 2002. To do this, many search tools (inventories, bibliographies, chronologies, research on contemporary scholars) have been jointly developed and compiled in part on the site dalembert.obspm.fr/

One ambition of this collective work is to see and understand the many facets of the activity of the co-director of the *Encyclopédie*. In each volume, the emphasis was placed on the relationship between scientific output of the scientist and the context of this production.

In this sense, the correspondence often plays a role in revealing the intellectual and social networks. It was therefore essential, both for the general annotation of the work that all eighteenth-century scholars, to have a reliable and documented edition of this correspondence to a large extent unknown. With two thousand two hundred letters preserved, correspondence received and sent by D'Alembert has toured Europe of the Enlightenment.

Marie-Laure Massot joined the *Mapping the Republic of Letters* project last academic year (2011-2012) at Stanford University in order to carry out a series of visualizations of D'Alembert's correspondence, thus initiating the link between the tools developed at Stanford and the D'Alembert project and correspondence database. Beyond the collaboration, it was for her a voyage of discovery into the new challenges and possibilities of Digital Humanities at the interaction between Humanities, Computer science and Design.

Exploring the metadata for D'Alembert's correspondence through the MRofL tools is a great way to travel with one of the greatest French scientist and philosopher of the eighteenth-Century through his data to have a better idea of his work and his intellectual network. It is also a great opportunity for us to join our D'Alembert's data to others major actors of the Republic of Letters ones in order to do some significant comparisons of their respective networks.

In the framework of the annotated and critical edition of the Complete Works of D'Alembert, which would like to reveal the links between the scientific concepts and the way they were produced, and in the same time the intellectual networks, the discussions and interpretations on the visualization results become an essential part of the research process. The categories and the dynamic of the visualization allow us to explore new research horizons by offering improving digital tools. This new open field of research investigation, applied for example on correspondences, should be supported by innovating projects, like the *Mapping the Republic of Letters* Project, relying on solid research basis. This project takes his place at the crossroads of different fields of research interests, the redefinition of the *corpus* (primary source) in the new world of possibilities of the computer science, the historical and literary

analysis and the importance of the Design. Thus, the Group D'Alembert's research experience in the Humanities joined to such a digital innovating project, as MRofL, seems to be a good basis for this collaboration. We would be delighted to test the MRofL visualization tools with our D'Alembert data and to help improving them.

For all the reasons, our collaboration with the *Mapping the Republic of Letters* project is extremely rewarding and challenging for us researchers in the field of History of Science, at the junction of multiple skills crossed with an historical reflection on a crucial time of the modernity, the XVIIIe century.

Contact Group D'Alembert in Paris:
ResearchTeam: Irène Passeron (lead), Marie-Laure Massot

Irène Passeron, Chercheur CNRS, équipe d'Histoire des sciences mathématiques de l'Institut de mathématiques de Jussieu (UMR 7586), Paris.
Contact: passeron@math.jussieu.fr

Marie-Laure Massot, Ingénieur d'études CNRS, editorial specialist at the Cirphles Laboratory (USR 3308), ENS Paris.
Contact: marie-laure.massot@ens.fr
Primary Source: http://dalembert.obspm.fr/Correspondance-formulaire.php

La coordinatrice du Groupe D'Alembert
Irène PASSERON (chargée de recherches CNRS, Institut de Mathématiques de Jussieu UMR 7586)

POLITECNICO DI MILANO
INDACO
DIPARTIMENTO DI
INDUSTRIAL DESIGN
DELLE ARTI
DELLA COMUNICAZIONE
E DELLA MODA

Milano, the 17th of January 2013

To *Nicole Coleman*
Principal Investigator Mapping the Republic of Letters/Digital Republic of Letters
Stanford Humanities Centre

Letter of commitment

The DensityDesign Research Lab (DDLab) at Politecnico di Milano is being partnering with Stanford Humanities Centre (SHC) since three years to produce significant advancements in the development of visual tools to support research processes in the domain of Digital Humanities.
As Scientific Director of DDLab, I see the NEH Digital Humanities Implementation grant as a concrete opportunity to exploit the results we successfully achieved so far and to have a wider impact in the DH community.

Thus, we fully support the participation of SHC to the grant and we here commit 1 FTE to the project for the full period of the grant from September 1, 2013 through December 31, 2014. We will contribute our expertise and experience with visual tools and interfaces that will enhance and enrich the experience of the scholars in all the stages of their work with the data.
I'm sure DDLab and SHC will be able together to strengthen significantly the research processes in the Digital Humanities, exploiting the potential of a visual approach to the analysis, the exploration and the manipulation of large corpora and sets of data and metadata.

The participation to the NEH Implementation grant is also an opportunity to reinforce the partnership within the two research centers and – on a higher level – to explore deeply the potential impact of a interdisciplinary research process that proved to be able to merge and successfully integrate the specific competences of (Digital) Humanities and (Communication) Design.

Yours trustfully,

Paolo Ciuccarelli

Associate Professor / Communication Design
Politecnico di Milano / Design Department

Scientific Director
DensityDesign Research Lab
paolo.ciuccarelli@polimi.it
www.densitydesign.org

January 15, 2013

Dear Committee Members,

I am writing to support the grant application submitted by Stanford University's Humanities + Design.

In 2009 I became involved with its predecessor group, Mapping the Republic of Letters. My participation with the Republic of Letters project played a key role in shaping the development of my dissertation, "Instruments of Religion and Empire: Spanish Science in the Age of the Jesuits, 1660-1755". In my research, I explore scientific networks and communities in the Spanish World during the seventeenth and eighteenth centuries. I juxtapose a macroscopic study employing Digital Humanities tools with individual cases based on archival research to explain how scientific knowledge and practices circulated throughout the Iberian Atlantic. With the assistance of social network visualization software I have studied the careers of 360 individuals involved in the sciences during this period. My case studies analyze how mathematicians, missionaries, and naval officers in Spain, Mexico and the Southwest borderlands engaged with the new sciences and other scholars throughout the larger Atlantic world. The combination of these two different levels of analysis allows me to not only identify global trends in the production of scientific knowledge but also to identify examples of local scientific practices. By studying scientific practice and application I believe that is is possible to discern a broader range of intellectual activity and exchange than by focusing on innovation.

The Digital Humanities component of my work emerged from my participation in Mapping the Republic of Letters, where I was given the opportunity to develop my own research project. My case study in the Republic of Letters project is "An Intellectual Map of Science in the Spanish Empire, 1600-1810". The source for this project is the Spanish Scientist Database I compiled using information from the *Diccionario Historico de la ciencia moderna en España*, a biographical dictionary of Spanish scientists from the medieval period to the 1970's. I have analyzed factors such as changing research preferences in different times and locales, the role of organizational and personal networks in scientific research, and the circulation of scientific knowledge through individuals. My further plans regarding the database include collaboration with other early modern Iberian scholars to expand the database and make it accessible to the public.

As a result of my experiences with Mapping the Republic of Letters, I am greatly interested in integrating Digital Humanities methods and techniques into pedagogy The laboratory setting we use allows undergrads and graduate students to engage in collaborative research and decentralized learning to their mutual benefit. I see working with Digital Humanities tools not as the end in itself, but instead as a means to handle large amounts of data leading to new insights and avenues for further research.

I believe that support of Humanities + Design will grant similar opportunities and insights to other graduate students and faculty looking to integrate Digital Humanities methods and tools in their research. Therefore, I wholeheartedly support this grant application.

Best Regards,

Marcelo Aranda
maranda@stanford.edu
Doctoral Candidate
Department of History
Stanford University

GIORGIO CAVIGLIA

(b) (6)

giorgio.caviglia@mail.polimi.it

January 10, 2013

To Whom It May Concern:

I am writing to confirm my commitment to the Mapping the Republic of Letters project and to express my will (and my pleasure) to work on its further developments. As a designer and a design researcher, I have been particularly close to the project in the last two years, by actively participating in the development of data visualizations and interfaces. Since 2010, I had the opportunity to work on the project and to spend a considerable amount of time close to the other participants, as a Visiting Researcher at Stanford University in 2011 and, more recently, during a workshop in August 2012. Moreover, my Ph.D. thesis in Design, that I am going to discuss soon this year (March, 2013), focuses on the relation between design and digital humanities and Mapping the Republic of Letters has represented the main case study for my research. Furthermore, as a senior member of the DensityDesign research Lab at the Politecnico di Milano, I am also eager to deepen the relation between design and digital humanities, by bringing students and researchers into the project.

For these reasons and for the great and almost unique opportunity that this initiative provides to develop my research interests, I express again my intention to continue to work on the project in the near future.

Sincerely,

GIORGIO CAVIGLIA
PhD Student
Design Department, Politecnico di Milano
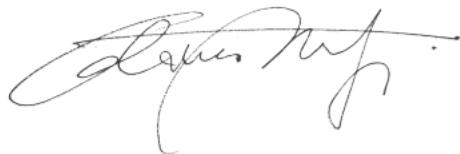
January 17, 2013

Dear Prof. Dan Edelstein,

This letter serves to reiterate my interest in Linked Data technologies and their applications, with a specific focus on the Humanities, and to discuss opportunities for collaboration or a position with your group under this topic.

I have a PhD in Information Society (Computer Science curriculum) from the University of Milano-Bicocca (Italy) and five years of experience as an ICT and research consultant. My core competencies include the Semantic Web and Linked Data, and their use for the integration, retrieval and browsing of Humanities, Library and Cultural Heritage data. Since August 2012 I am a postdoctoral scholar in the "Mapping the Republic of Letters" project at Stanford University. My research involves Linked Data for the study of the intellectual networks connecting early-modern scholars, focusing on Voltaire's correspondence and publication data. More specifically, my activity is to develop and apply ontologies to represent this data and to connect it to the Linked Data cloud, with the aim of improving the interoperability of the project's dataset and allowing the integration of external data useful for historical analysis. I have initiated collaboration on these topics with prof. Eero Hyvönen, Research Director of the Semantic Computing Research Group at the Aalto University in Helsinki, who is internationally recognized as a top expert in the fields of the Semantic Web and Linked Data. The results obtained so far encourage further exploration of this approach towards identifying and expanding the applicability of semantic technologies in the Mapping the Republic of Letters project.

My résumé, which is enclosed, contains additional information on my education, skills and work activities. I would appreciate the opportunity to discuss working with you as a consultant on an as-needed base according to the project's planned activities and timing, at an approximate rate of USD 40 an hour.

Thank you for your time and consideration. I look forward to speaking with you about this exciting possibility.

Sincerely,
Glauco Mantegari

Center for Spatial and Textual Analysis
450 Serra Mall, Building 160, Room 228, Stanford, CA 94305-2055 T 650.721.1385 F 650.725.5916

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Appendices

Appendix A - Design principles

1. "Expose the Complexity." It is widely acknowledged that visualization is critical to data analysis, but for the most part graphical methods that we use today were developed in the context of statistical analysis. Since statistical analysis is rules-based and quantitative, these graphical methods have been built to take full advantage of computational power to run predetermined algorithms in the background. By contrast, we need a graphical approach that takes full advantage of the interactivity, hyper-textuality, and scalability of graphical user interfaces to navigate data without imposing too much structure or applying too many rules that will constrain the viewable results and undermine interpretation.

2. "Provide Context." Complexity without context is chaos. Humanistic inquiry and the reliability of humanistic assertions depend deeply on context. In terms of a graphical user interface to data, we are concerned with making it evident, throughout the data exploration process, where you started and what choices you have made along the way. To provide context in a digital setting, we are equally interested in showing the data we do not have as we are in showing the data we do have.

3. "Reveal Spatial-Temporal-Relational Dynamics." One of the ways we work to both provide context and manage complexity and uncertainty is to put into play the dynamics between spatial, temporal and relational data. If we look at a geo-spatial map of correspondence, for example, we can see patterns of exchange of data between cities or geographic regions. If we look at the same data in a network graph view that shows letters exchanged between individuals, we can explore more subtle patterns of exchange based on cultural identity. If we look at this data on a timeline, we can see the changing patterns in exchange over time. But only by combining temporal data, relational data and spatial data can we begin to draw a picture of the movement of people and ideas. This is even more true where there are significant gaps in one or another dimension of data, so we need to explore a question from many angles and attempt to hypothetically fill in those gaps.

4. "Let the User Structure the Data." We gather as much structured data as we can to help us organize and navigate large data sets, but more often than not the data we use as historians arrives unstructured and does not fit well into existing ontologies. To support an idiographic approach to data, we want to make it easy for the scholar to drag data points around on a screen and cluster them not only according to pre-determined values, but according to attributes or categories worked out through the exploratory reasoning process.

Appendix B - Visualization Prototypes

Figure 1: "RPLVIZ," 2009. Demo available at http://stanford.edu/group/toolingup/rplviz/

This visualization won the North American Cartographic Information Society 2009 Student Webmapping Competition prize in the interactive map category. It was also featured in a 2010 New York Times article about "Humanities 2.0" (http://www.nytimes.com/2010/11/17/arts/17digital.html?_r=0). A video describing this visualization's functionality is available here: http://www.youtube.com/watch?feature=player_detailpage&v=nw0oS-AOIPE.

Figure 2: "Corrispondenza," 2010. Featured In *Information Graphics,* Taschen Deutschland GmBH, 2012.
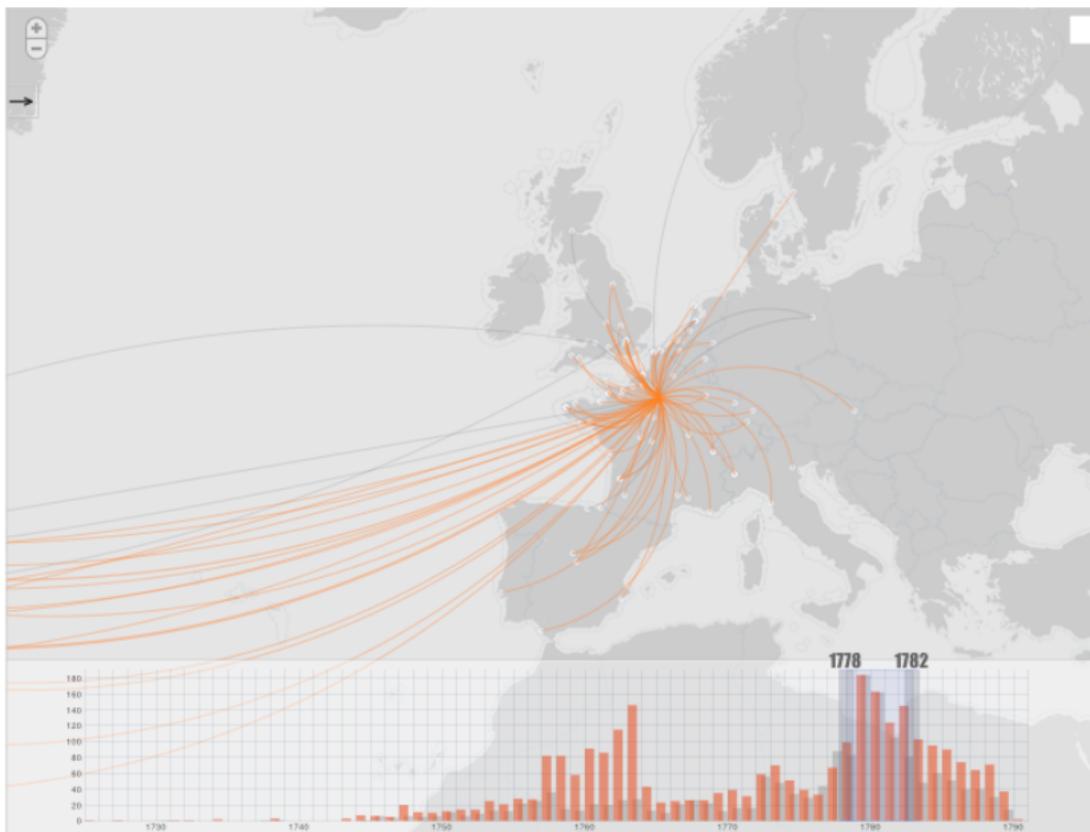
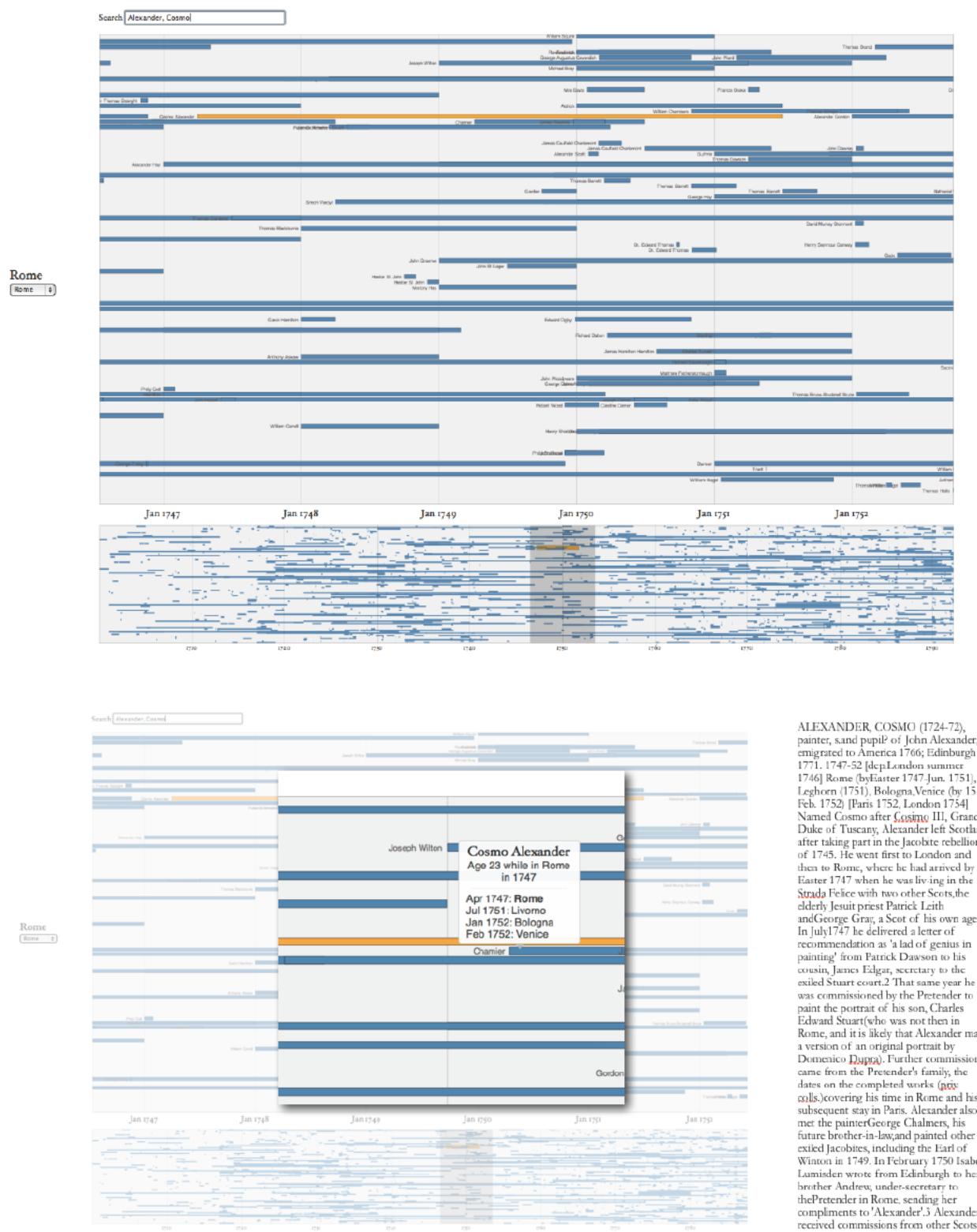Figure 3: "Priestley-Inspired Timeline," 2011. Created with designer Jesse Kriss.

ALEXANDER, COSMO (1724-72), painter, s.and pupil? of John Alexander; emigrated to America 1766; Edinburgh c. 1771. 1747-52 [dep.London summer 1746] Rome (byEaster 1747-Jun. 1751), Leghorn (1751), Bologna,Venice (by 15 Feb. 1752) [Paris 1752, London 1754] Named Cosmo after Cosimo III, Grand Duke of Tuscany, Alexander left Scotland after taking part in the Jacobite rebellion of 1745. He went first to London and then to Rome, where he had arrived by Easter 1747 when he was liv-ing in the Strada Felice with two other Scots,the elderly Jesuit priest Patrick Leith andGeorge Gray, a Scot of his own age.1 In July1747 he delivered a letter of recommendation as 'a lad of genius in painting' from Patrick Dawson to his cousin, James Edgar, secretary to the exiled Stuart coart.2 That same year he was commissioned by the Pretender to paint the portrait of his son, Charles Edward Stuart(who was not then in Rome, and it is likely that Alexander made a version of an original portrait by Domenico Dupra). Further commissions came from the Pretender's family, the dates on the completed works (priv. colls.)covering his time in Rome and his subsequent stay in Paris. Alexander also met the painterGeorge Chalmers, his future brother-in-law,and painted other exiled Jacobites, including the Earl of Winton in 1749. In February 1750 Isabell Lumisden wrote from Edinburgh to her brother Andrew, under-secretary to thePretender in Rome, sending her compliments to 'Alexander'.3 Alexander received commissions from other Scots: for Alexander Hay he copied Caravaggio's Woman teaching a girl to sew, and for

Figure 4: "Inquiry", 2011. Created in partnership with DensityDesign Research Lab.
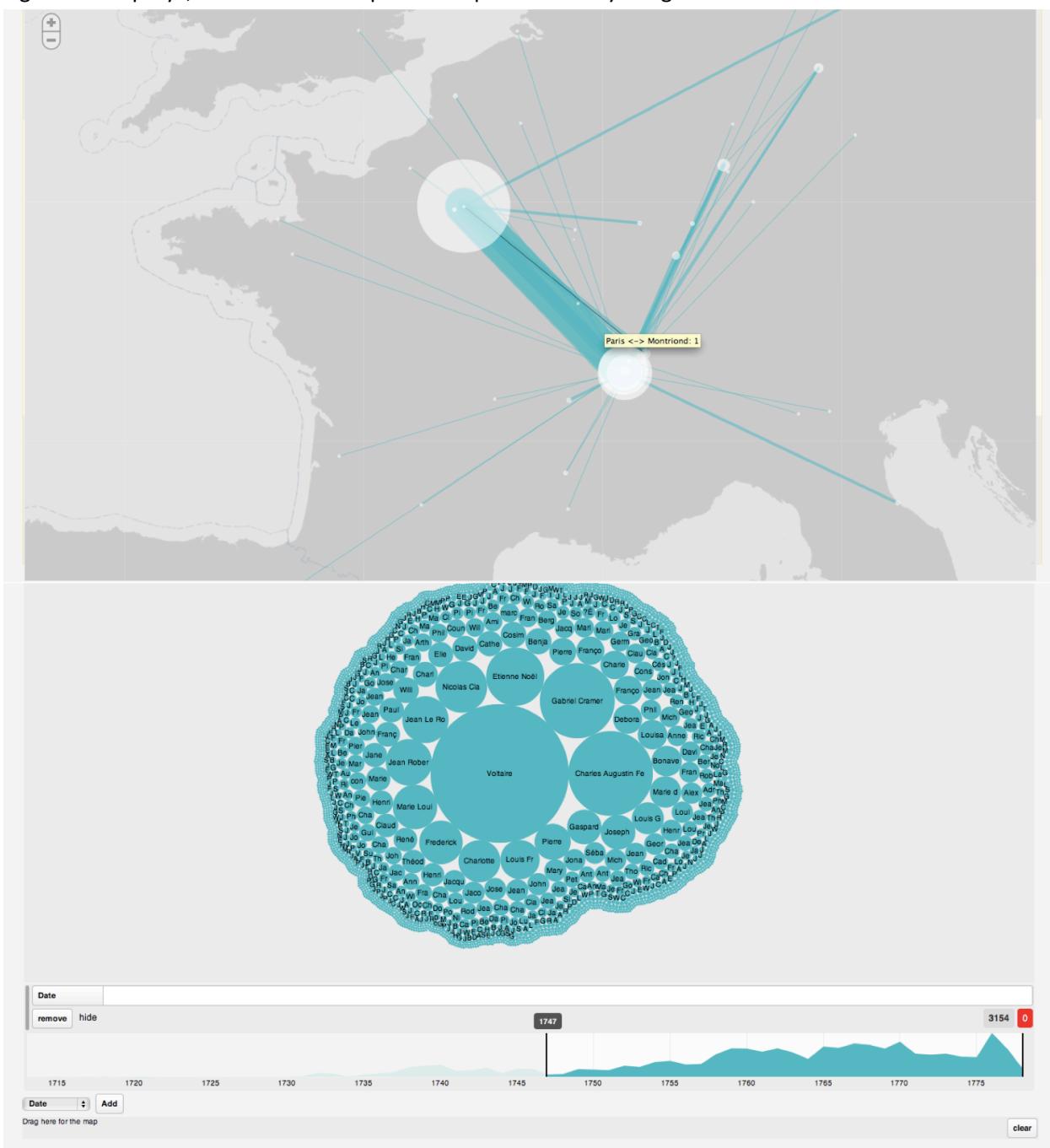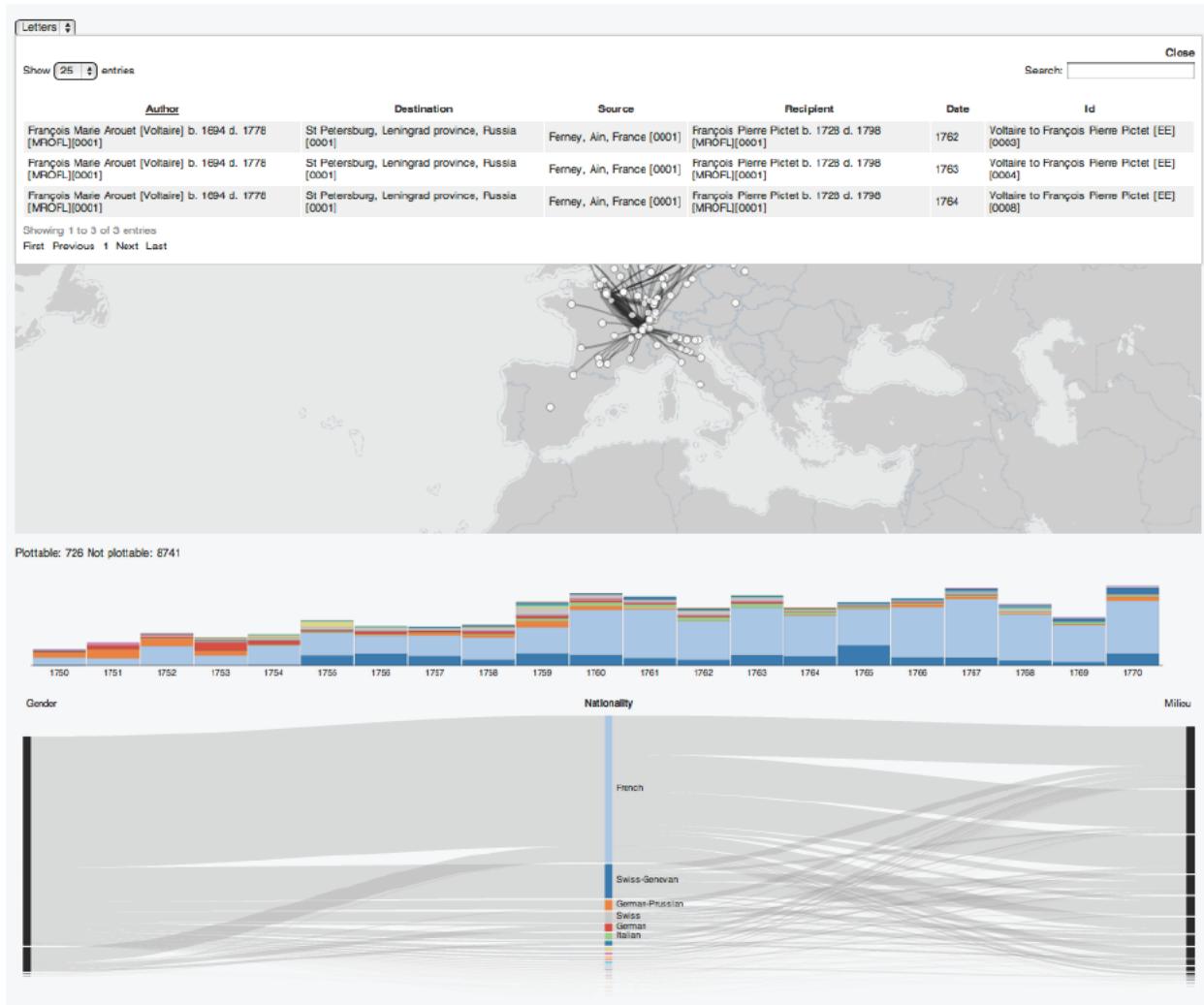
Figure 5: "Ink" 2011. Created in partnership with DensityDesign Research Lab. Demo available at
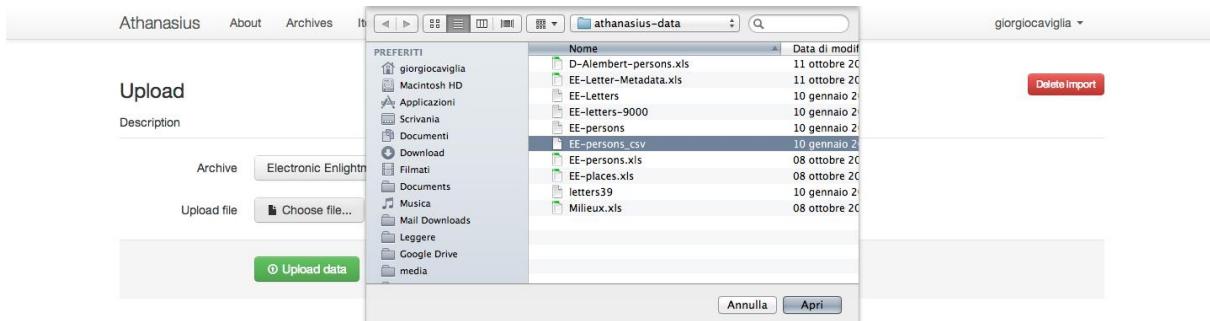republicofletters.stanford.edu/tools/ink

Appendix C – Bibliography: Topics in visual design and humanities

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Appendix D – "Athanasius" (application – data store – API)

1. Uploading data

Schema mapping

GRANT11305526 -- Attachments-ATT10-1243-appendices.pdf

Schema extension

Schema definition

GRANT11305526 -- Attachments-ATT10-1243-appendices.pdf

2. Data model

Athanasius's data model has been conceived in order to provide everyone to define and apply customized data schemas, without necessarily adopting a unique schema across users and collections. At the same time, it is possible to establish (hierarchical) relationships between the schemas and thus allowing the user to perform queries across different collections. This is possible by using a specially created namespace syntax for the models (see below).

In order to achieve these purposes, Athanasius makes use of a NoSQL database and, in particular, the MongoDB technology. MongoDB is an open-source, document-oriented database designed for ease of development and scalability, with particular emphasis on Internet applications and infrastructure. Three main MongoDB collections are used to store the data: Archives, Schemas and Items.

2.1 Archive `(archives)`

An archive is an organized collection of data. A single archive involves usually more than one data schema (or model). For instance, a Voltaire archive could contain information about Voltaire's correspondences, organized by People, Letters and Places. An archive has a single owner (who created it) but can be read (and written) by other users. Each object in the `archives` collection in Mongo contains the basic information related to the archive, its sources, curation and content. The actual data of the archive are stored in the Items collection (see below).

2.1.1 Structure (provisional)

`_id:` a unique identifier for the archive;

`name:` the name of the archive;

`description:` a short description of the archive;

`curator:` a reference of the archive curator;

`owner:` the Athanasius user that created the archive;

`creationDate:` creation timestamp;

Example:

```
{
    _id: "dalembert",
    name: "D'Alembert correspondence",
    description: "A collection of Jean le Rond d'Alembert's correspondence from...",
    curator: "John Doe",
    owner: "userId",
    creationDate: "2013-01-01"
}
```

2.2 Schema (schemas)

2.2.1 Structure

```
_id
label
description
attributes
       default
       description
       key
```

2.2.2 Namespaces

Athanasius makes use of an ad hoc syntax for its schemas. The basic syntax for each schema's name involves a `namespaceIdentifier` and a `LocalName` combined together by a colon: `identifier:LocalName`. Each schema can inherit an already existing schema. The inheritance is declared by extending the name of the schema by using a slash followed by the new name, like this: `FatherIdentifier:FatherLocalName/ChildIdentifier:ChildLocalName`.

Some basic rules exist in order to make the syntax usable and consistent:

- Each schema must initially inherit (start with) a `mrofl` schema.

- The `identifier` comes from the `id` of the first archive adopting the schema.

- The name can contain just alphanumeric chars (a-Z,0-9).

#	Task name	GC	GM	MC	DEV	Start	End	Duration
T1	**Review and Setup**	**2**	**1**	**2**	**-**	**1**	**2**	**2**
T1.1	State of the art review	1	-	.5	-	1	1	1
T1.2	Review of visual tools and data platform	.5	.5	.5	-	2	2	1
T1.3	Gathering needs and requirements	.5	.5	1	-	2	2	1
T2	**Design**	**4**	**3**	**4**	**1.5**	**3**	**6**	**4**
T2.1	Individual components specification	1	1.5	2	-	3	4	2
T2.2	Environment and linked data specification	1	1	1	.5	4	4	1
T2.3	Designing components	2	.5	1	1	4	6	3
T3	**Developing and testing**	**3**	**3**	**3**	**4**	**6**	**9**	**4**
T3.1	Developing individual components	2	2	2	4	6	9	4
T3.2	Testing	1	1	1	-	9	9	1
T4	**Revisioning and developing**	**3**	**2**	**3**	**3**	**10**	**12**	**3**
T4.1	Review of the test	1	.5	1	-	10	10	1
T4.2	Revision of the components	1.5	.5	1	.5	11	12	2
T4.3	Developing environment and linked data integration	.5	1	1	2.5	10	12	3
T5	**Documentation and launch**	**4**	**3**	**4**	**3.5**	**10**	**12**	**3**
T5.1	Writing documentation and building tutorials	1	.5	1	-	10	10	1
T5.2	Building platform for official launch	1.5	1	1	1.5	11	12	2
T5.3	Testing	.5	.5	1	2	10	12	3
T5.4	Writing white paper / Final report	1	1	1	-	10	12	3
	Total	**16**	**12**	**16**	**12**			

Months (Start 9/13 – 16: 12/14)

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Date	9/13	10/13	11/13	12/13	1/14	2/14	3/14	4/14	5/14	6/14	7/14	8/14	9/14	10/14	11/14	12/14

Milestones: M1 (month 6), M2 (month 12), M3 (month 16)

Deliverables: D1.1, D1.2 (month 2); D2.1 (month 5); D3.1, D3.2 (month 9); D4.1, D4.2 (month 12); D5.1, D5.2, D5.3, D5.4 (month 16)

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GRANT11395526 — Attachments-ATT19-1242-appendices.pdf