INTRODUCTION

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First established in 2011, Pelagios is a web-based initiative with the broad aim of enabling researchers and students to better understand and investigate a range of aspects related to historical space: its literary and cartographic representations; its interrelatedness and interconnectivity; its fluidities and transformations.[1] Initially founded as a collaboration with institutional partners whose datasets contained information relating to the places of the ancient Mediterranean world, over the past decade Pelagios has been developing the means for anyone creating or curating online resources about historical places to interlink their data.

As defined by LinkedData.org, 'Linked Data is about using the Web to connect related data that wasn't previously linked, or using the Web to lower the barriers to linking data currently linked using other methods.'[2] In even plainer English we might say that linked data is simply about connecting online resources that have something in common with each other. An issue here is the form in which digital content is presented and preserved: proliferating technical standards militate against the ability to find and reuse data, particularly data of different types (including texts, images, maps and databases). Moreover, as soon as one moves beyond this initial definition and tries to describe what that linking actually looks like (and how it is to be achieved), we inevitably meet a more technical vocabulary. To take a representative example, 'Linked Data is a method for publishing structured data using vocabularies . . . that can be connected together and interpreted by machines. Using linked data, statements encoded in triples can be spread across different websites.'[3] Descriptions such as this, though accurate, portray linked data in a very different way from that initial conceptualization of it as a means of connecting related resources, and they do so in a language very different from that to which most humanities scholars are accustomed. To 'do' linked data normally means to know how to read (and write) computer

code. While the potential of linked data to facilitate scholarship in a range of areas seems evident, scholars have thus far been hampered in their capacity to explore and develop its possibilities. As a leading digital humanist has written: 'Scholarship is much harder than [the ability to link]: we need to be clear about why we are linking data, what sort of data we are linking, and our aim in doing so.'[4]

Meanwhile, in the Spatial Humanities significant progress has been made by integrating digital methods and tools into traditional scholarship. Foremost among these technological frameworks have been Geographic Information Systems (GIS) and web-mapping applications, which gather, manage, re-project and analyse geospatial data. This has facilitated important work in areas as diverse as literary landscapes, spatio-temporal mapping, archaeological distributions, and the history of geographic representation. Equally, however, there has been an acute awareness within the same scholarly community that traditional GIS, with its tendency towards positivist assumptions about precise measurement and categorization, can be poorly equipped to deal with the typically complex, pluralistic and context-dependent data of literary texts or of past geographical systems of thought.[5] None of this is to suggest that spatial technologies do not have an important role to play in humanities scholarship, but rather, in the words of David Bodenhamer, the question is 'how to tap digital and spatial technologies to move narrative beyond the linear constraints of written language into a more fluid and reflexive process in which we can see and experience change and development as a way of understanding an event or a place more fully'.[6] Indeed, texts are surely better viewed not as self-contained, isolated units but as cultural products, always in dialogue with other texts and media, such as material objects and maps. This brings us to the idea of Linked Geodata and the contribution of Pelagios.

At the heart of the Pelagios methodology lies the annotation of place references in order to link the spatial aspects of digitized source materials. This process – known as semantic geoannotation – associates fragments of documents with a global identifier in an online gazetteer. Not only does this allow place references to be identified and mapped; where the same identifiers are used elsewhere, it also then becomes possible to link documents together through these place references, thereby unlocking new avenues of research. Pelagios's tools, such as *Recogito*, have lowered the barriers to entry of creating and researching with linked open geographical data by minimizing the amount of time, expense and technical expertise required to produce and exploit such annotations. As a broader initiative, Pelagios has also worked to build communities of practice to share knowledge and agree common standards in this field. The question of how to make best use of Linked Data annotations within the humanities is now a growing area of interest and exploration.

This special issue maps out the past, present and possible future trends of semantic geoannotation by reflecting on the development of the Pelagios initiative in a two-part survey of its methods, tools and community, and exploring its scholarly value through two concrete case studies. The first paper, authored by members of multiple Pelagios investigative teams, provides a short history of the methods and tools developed by Pelagios. Situating the work within the wider field of semantic and geospatial technologies, it describes the initial development of the semantic geoannotation methodology through an open consortium of ancient Mediterranean world data resource providers, before tracing its extension into other historical and archaeological periods and domains. The second section of the paper focuses on the development and application of *Recogito*, an online platform that allows anyone to identify place references within historical texts, imagery or datasets.

This historical overview is followed by two case studies which make use of and critically appraise Pelagios methods and tools for understanding past geographies. The first, by digital classicist Chiara Palladino, explores the digital mapping of a Late Antique geographical compendium, the *Sketch of Geography* by Agathemerus. It investigates how the integration of annotation, georeferencing and network analysis of various aspects of the text can contribute to a better understanding of a premodern representation of the world. The paper demonstrates that Agathemerus' geographical description appears to be methodologically influenced by previous and unpreserved sources. It emphasizes the value of an integrated approach to the semantics and mapping of literary geographies, while highlighting its potential for investigating historical spatial reasoning and addressing new questions that go beyond the purely quantitative. The second case study, by medievalist Marianne O'Doherty, explores the geographical framework of Burchard of Mount Sion's thirteenth-century *Descriptio terre sancte*. It places Burchard's text in the context of medieval practices of linked data and illuminates the roles played by geographical intertextual links in the text's conceptual geography. In particular, it explores Burchard's methods in using geographical links to harmonize the different textual traditions and geographical frameworks on which the *Descriptio* draws, and to give meaning to the landscape he describes. The article demonstrates the utility of infrastructures such as Pelagios, and platforms like *Recogito,* for illuminating the geographical framework of a complex medieval text when used alongside more traditional methods of textual and source analysis.

The final paper, which forms a companion piece to the first, turns the focus back on to Pelagios to consider what its authors argue is the most crucial element of any Linked Data enterprise: its community. The first section discusses a variety of funded and unfunded activities conducted under the initiative's aegis, and specifically several 'small grant' programmes that dramatically expanded its scope and reach. The paper goes on to describe the evolution of Pelagios

as a 'community of practice', in which its work, conceived of in terms of both method and tool development, has been facilitated by and coordinated with individuals and groups external to its investigative teams. This growing and maturing community has ultimately been realized in the foundation of a formal voluntary organization: the Pelagios Network Association. It concludes with brief reflections on three interlinked sister initiatives which have emerged from the Pelagios community and continue to support scholars and practitioners working in related fields.

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END NOTES

[1] See http://pelagios.org. *Pelagios* means 'of the sea' (in ancient Greek), drawing on the World Wide Web as a sea of data.

[2] http://linkeddata.org. LinkedData.org is a project dedicated to providing information and guidance on general Linked Data methods and technologies.

[3] https://wordlift.io/blog/en/entity/linked-data.

[4] Andrew Prescott, Professor of Digital Humanities at Glasgow. The quotation derives from his regular blog on digital scholarship: http://digitalriffs.blogspot.com/2013/01/the-function-structure-and-future-of.html.

[5] See, for example, T. Harris, S. Bergeron and L. Rouse, 'Humanities GIS: place, spatial storytelling, and immersive visualization in the humanities', in M. Dear, J. Ketchum, S. Luria and D. Richardson, eds, *GeoHumanities: art, history, text at the edge of place* (New York, 2011), 226–40; J. Drucker, 'Humanistic theory and digital scholarship', in M. Gold, ed., *Debates in the digital humanities* (Minneapolis, 2012), ch. 6.

[6] Bodenhamer, D., 'Narrating space and place', in D. Bodenhamer, J. Corrigan and T. Harris, eds, *Deep maps and spatial narratives* (Bloomington, 2015), 7–27.