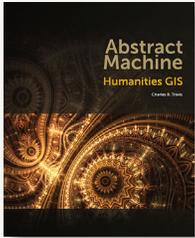


creation and publishing of 3D models to ArcGIS Online, plus how to use CityEngine web viewer.

Overall, Fu has put together a very good book on learning about web GIS in the Esri universe. That said, in this reviewer's opinion, this book should not be sold as a printed work; rather, it should be sold by Esri Press as an e-book for two reasons. First, its many online sources would be

more easily accessible from an e-book; and second, since it has so many corrections and changes (see downloads2.esri.com/ESRIPress/bookResources/WebGIS/WebGIS/Supplement_final.pdf), registered purchasers of the work could download free updates to the book. I was not pleased with how much I needed to mark up the book to prevent frustration with the out-of-date instructions.

ABSTRACT MACHINE: HUMANITIES GIS



By Charles B. Travis.

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Review by: Ann M. Hanlon, University of Wisconsin–Milwaukee

With the digital revolution has come the ability, at one's desktop, to access tools and methodologies that were previously the domain of specialists. Cartography and mapping are perhaps among the most tempting and intuitive of those methodologies. And scholars of the humanities, especially in fields such as history and geography, but also in literature and the fine arts, are keen to adopt the language and metaphors of the map to analyze, visualize, and interpret their traditional materials. Likewise, librarians and others working in the fields of digital humanities have recently begun to learn to use GIS as a tool to access and understand library collections and to interpret and visualize what some have begun to call humanities data. Charles Travis's book, *Abstract Machine: Humanities GIS*, provides a compelling model for how humanities professionals can use and understand GIS technology to reconstruct, interpret, represent, model, and otherwise critically engage literary texts and historical narratives in order to rediscover and more deeply explore those materials.

Travis writes from the perspective of a scholar immersed in the intersections of the science of cartography, the history of geography, and the language and meaning of literature. And he proves capable of communicating the breadth of opportunities that GIS and visualization techniques can bring to the humanities. Drawing on a depth of knowledge that might be intimidating to the uninitiated,

he nevertheless provides in this book a definition and critical history of what has become known as the spatial humanities, and provides a less well-developed but still useful how-to guide to using GIS and its attendant tools to reconceptualize historical events and literary landscapes. He draws heavily on literary theory, viewing GIS, geography, and cartography through multiple theoretical lenses, particularly poststructuralist ones.

The organization of the chapters nicely illustrates the layering of skills necessary to conceptualize, source, and construct the maps and visualizations discussed in the book. Beginning with a historical overview of the field of geography, he provides a backdrop for the development of the more scientifically-oriented field of cartography, which he contrasts to a geographical approach more aligned with the arts and humanities. That duality is also apparent in the methodologies of the digital humanities versus the content and questions those tools are meant to illuminate. If nothing else (and there is plenty else), the first two chapters articulate not only a history of the spatial turn in the humanities, but describe an ongoing and productive relationship between the sciences and the humanities that is only more apparent today thanks to the ubiquity of digital tools. Employing GIS to explore questions in the humanities provides a particularly convincing use-case to explore.

Travis's first use-case involves historical events: namely, the seventeenth-century conquest of Ireland by Oliver Cromwell, and the consequent Irish Rebellion. In many ways this is the most straightforward use of GIS, with data derived from primary sources and then categorized and plotted on a map. The lessons here are of a piece with most historiography and he appropriately opens by citing John Lewis Gaddis's *The Landscape of History*, and Gaddis's comparison of history to cartography—both “practices that manage infinitely complex subjects by imposing abstract

grids over them” (23). Chapter four explores Bakhtin’s notion of the chronotope, or how we experience time and place as a value-laden construct, by using GIS to imagine and contrast the rural and urban patterns of Irish poet Patrick Kavanagh’s “lifepaths.” Chapter five is perhaps the most satisfying in terms of demonstrating how humanists might extend the metaphors of cartography and the science of GIS to interpret and explore a text. Taking on James Joyce’s *Ulysses*, he uses GIS as a “tool that collates, juxtaposes, and explores the relationship between a writer’s text and various source materials” (76). *Ulysses* makes for a particularly good data source as Joyce himself drew not only on literary sources such as Homer’s *Iliad* and Dante’s *Inferno* to guide his writing, but also on a specific 1904 map of Dublin. Travis’s visualization of, as poet Ezra Pound described the novel, “Ulysses as a magnificent new *Inferno* in full sail” (77) succeeds because the source material itself is spatial—the levels of Hell, the journeys of Homer’s Ulysses—and because those spaces are imaginary. Visualizing those imaginary spaces on the real space of Dublin (though necessarily represented metaphorically, as a map) opens up new ways to imagine this text. The ArcScene visualization itself is not a work of art—certainly no match for Botticelli’s depiction of Dante’s levels of Hell, which Travis depicts on the preceding page—but it does suggest that there is more we can do to understand and play with the texts we may have, up to now, only read.

The book is at its best when Travis articulates the mutually informing theoretical potential of GIS and the humanities. He convincingly conveys the creative and scholarly prospects for expanding the role of GIS beyond straightforward mapping and employing it as a tool to variously interrogate source materials, plot and visualize the influence of geography on language and poetry, or reconstruct historical place and circumstance. Where the book is almost inevitably disappointing is in the illustrated examples of each GIS-based mapping project. Strangely, given the medium, there are almost no links to an online, non-static version of any of the maps he has created, except in chapter seven, which references the *Digital Literary Atlas of Ireland*. The maps themselves vary in how effective they are in conveying the complex and often subtle arguments Travis wants to make in each case. The best examples are the maps that chart Kavanagh’s lifepaths—helping the reader to see the contrast between the centrifugal patterns of the poet’s rural life and the centripetal patterns of the urban—and the maps created to visualize, in layers, the interplay between Joyce’s source materials for *Ulysses*. Both

sets of examples—the visual metaphors of route and line in the former case, and of ascending levels and corresponding paths/episodes in the latter—directly express the notions of chronotope and deformative interpretive reading practices that Travis states he hopes to convey.

More practically, Travis is careful to outline the broad steps he took and tools employed to create each visualization pictured in the book. Each project description has a recipe-like list of tools and methods that nevertheless functions more as a broad overview of his project design than as a step-by-step guide to recreating his efforts. For those already well-versed in using GIS and visualization tools such as ArcGIS—and the tools are largely from the ArcGIS family, with almost no use of open source tools such as QGIS or CARTO—these steps might provide enough information to approximate or extend the project. For those newer to the GIS scene, they may provide a helpful guide to the kinds of tools, skills, and sources used to create similar projects.

The final chapters emphasize a critical approach to GIS and visualization tools. For scholars eager to undertake such projects, Travis correctly stresses the importance of understanding the capacity and limitations of GIS and the tools used to create maps and visualize data. He stresses a critical engagement with the software rather than a passive approach to these tools as “black boxes.” Importantly, he also emphasizes the iterative nature of GIS Humanities projects: the maps that one might create shouldn’t be seen as a final argument or finished product, but rather as something that can continue to be refined, added to or subtracted from, and revised.

The argument that GIS is a tool to “creatively engage with one’s sources” (124), and the author’s central argument, that while “GIS serves fundamentally as a cartographic tool, the potential of the technology extends far beyond the cartographic pale” (123), is amply demonstrated and clearly articulated. This is not a how-to book; those looking for guidance in building humanities projects using GIS should look elsewhere. But it does provide a compelling scholarly argument for applying digital tools to humanities research. This is a valuable book for GIS specialists beginning to work with scholars and students in the humanities. And it is a welcome foundation for humanists looking to articulate and understand the language of GIS and cartography and its potential to augment traditional humanities methods, arguments, and narratives.