



PROJECT MUSE®

Min(d)ing the Gaps: Exploring Ancient Landscapes through the Lens of GIS

Lillian Larsen, Stephen Benzek

Transformations: The Journal of Inclusive Scholarship and Pedagogy,
Volume 25, Number 1, Spring/Summer 2014, pp. 45-58 (Article)



Published by Penn State University Press

DOI: <https://doi.org/10.1353/tnf.2014.0003>

➔ *For additional information about this article*

<https://muse.jhu.edu/article/630843>

MIN(D)ING THE GAPS

Exploring Ancient Landscapes through the Lens of GIS

Introducing her volume, *Holy Land, Whose Land?* geographer Dorothy Drummond invites readers to join her on a contemporary journey through ancient terrain. Placing contradictory commentary in conversation, Drummond juxtaposes modern landscapes and biblical narrative “geographically,” reading her present experience in light of the familiar Gospel accounts encountered in Christian Scripture. Describing the final stages of travel through the Palestinian countryside, Drummond eloquently highlights a litany of apparent disjunctures between ancient narrative detail and contemporary physical topography. Her reflections bear quoting in full:

LILLIAN
LARSEN
STEPHEN
BENZEK

I note the site of Emmaus on the drive from Jerusalem to Tel Aviv. It lies at a place where the hills meet the coastal plain. The area appears to be extremely fertile and fairly prosperous, as it must have been [in the first century of the Common Era]. Jesus’ ascension, witnessed by his disciples, takes place on the Mount of Olives. I am troubled by the inconsistencies in the Gospel accounts of where the disciples are to meet Jesus following the resurrection and where the ascension takes place. Matthew says they are to hasten to Galilee, where he will show himself, but Galilee is a good eighty miles away through difficult hill country. By fast public bus, it takes me the better part of three hours. Mark says nothing on the subject. Luke and John indicate that Jesus appears to the disciples in Jerusalem, but John also recounts a later appearance on the Sea of Galilee. Matthew has the ascension taking place on a hill in Galilee. Mark does not give a place but says that the event happens while the disciples are gathered with Jesus around a table. Luke says the ascension takes place outside Jerusalem, “near Bethany,” which he confirms in Acts as the Mount of Olives. John does not mention the ascension. I know I should let such inconsistencies alone, but I am too place-oriented to avoid such musings. Here is one of so many bits of evidence that dates and places of the Bible are of only minor concern to the writers. What is important to the writers are the events themselves and their significance. Clearly the Bible cannot be read as strict history, and its geography is often sketchy. [If its time/place framework is intact,...the details are not. (132)]

In tracing this itinerary, Drummond anecdotally articulates questions and inconsistencies that have long sparked heated debate among scholars. She likewise highlights idiosyncrasies that have consistently stymied close readers and students seeking to derive historical and contextual detail from ancient narrative texts.

While as a geographer, Drummond respectfully (and perhaps astutely) leaves her litany of topographic discontinuity open for biblical scholars to engage, such gaps in the narrative record have traditionally been treated as a riddle to be solved, and/or somehow explained away. A full range of published maps, both contemporary and historical, portray well-defined biblical landscapes that fluidly gloss over contradictory textual detail. These cartographic depictions invite minimal scrutiny of patent geographical discrepancies. When introduced within classroom settings, they impose visual continuity, reinforcing casual consolidation of loosely linked, but narratively disparate accounts. Didactically prescriptive, such seamlessly concrete cartographies at minimum stymie, but more often preclude, critical engagement.

The teaching strategies outlined in this essay counter the impulse to smooth over textual inconsistencies and narrative gaps, by using the contradictions within authoritative texts to address broader pedagogical goals. These methods were collaboratively developed in a series of undergraduate Christian Scriptures courses offered at the University of Redlands, a private university in Southern California. While the university itself is no longer religiously affiliated, the undergraduate population that registers for these introductory classes often retains a facile familiarity with the Bible. Whether Religious Studies majors or part of the broader student population (the course attracts a mix of both demographics), many are culturally predisposed to view even the most disparate biblical content as uniformly authoritative. From the outset, incorporating classroom use of a geographic hermeneutic proved to be an effective tool for destabilizing authoritative constructs. Shifting students' focus away from individual commitments, anxieties, and theological investments, this approach invited them to engage biblical content as a collection of variable, and often contradictory, historical source material. Even the simplest exercises involved students questioning, visualizing, and ultimately, reconsidering familiar texts in new and challenging ways.

Within this frame, our initial classroom investments were aimed at linking students' present-day conceptualizations of biblical texts to the historical contexts in which such documents were formed. As students began to capture and visualize data using maps and charts, the distance between ancient and contemporary, between reading biblical sources as religious scripture and historical record became more patent. Geographical analysis enabled substantive engagement with the layered narratives, figures, and events they encountered in assigned source material. Likewise, emergent affinity between ancient interpretive strata, and the multilayered character of Geographic Information Systems (GIS), proved increasingly engaging.¹

Placing GIS in the service of identifying and visualizing both extant and missing data reshapes the pedagogical objectives that often govern both the use of GIS and the teaching of biblical history. The concepts implicit to GIS have conventionally been particularly effective in answer-

¹ See "What is GIS?" for a definition of GIS.

ing questions pertaining to data rich sources (i.e., census data or elevation data). For many GIS users it is counterintuitive to use such models to reveal patterns and gaps in data-scarce sources such as ancient texts and manuscripts. Like biblical scholars, GIS users have traditionally sought to fill the gaps of data sets, in ways similar to which creators of biblical maps smooth over gaps in the historical record. We and our students, however, found that GIS could as effectively *reveal* gaps in ancient data sources. These same gaps often served as access points in guiding further inquiry.

Students and researchers are increasingly familiar with the concepts of mapping. Mobile phones and cars are equipped with GPS and online maps have become ubiquitous. Many maps contain embedded information such as gas station locations and restaurant reviews for instant use. Our exercises took advantage of students' familiarity with these tools as they conceptualized the ancient world. Simultaneously, working with GIS challenges models that seek to provide a "conceptual framework with which to connect all the loose bits of information" (Alibrandi 2003, 10). Using GIS reshapes the pedagogical objectives that often govern the teaching of biblical history. In addressing Hebrew and Christian Scripture—texts with which our classroom audience was often too familiar—we found that arguably "the loose bits" were the most revelatory.

In concrete ways, the cultural authority assigned to maps also balanced and offset the religious authority accorded biblical texts. As exercises progressed from involving students in work with paper maps, to critical engagement with prepared maps, and finally, to creating and interrogating digital maps, "minding" and "mining" the geographical and narrative gaps in ancient, often fragmentary source material, fostered critical cognizance of the complex threads that link historical texts and their contexts.

Mapping the Layered Legacy of Gospel Narratives

In order to introduce the foundational narratives of Christian scriptures, our course began with comparative reading of the canonical Gospels.² Because three of these four texts, Matthew, Mark, and Luke (also known as the "synoptics"), share a common storyline, their content lends itself to creating, developing, implementing, and integrating basic mapping strategies. As students began mapping the sequential trajectory of each gospel, the differences in narrative detail made engaging their parallel content provocative. Some students found it hard to resist the impulse to conflate, and somehow make sense of contradictory elements. Others were intrigued by the invitation to cartographically deconstruct and reconstruct familiar landscapes. Creating relatively simple maps with chronologically layered narratives helped students understand cartographic concepts such as map scale and layers. Students also began to experiment with layering readings of the different gospel accounts on maps.

In our first exercise, students annotated their reading of geographically rich parallel passages in Mark and Matthew on conventional paper base-

² For an accessible overview of textual debates related to the New Testament, see Bart D. Ehrman.



Figure 1



Figure 2

maps of present-day Israel and Palestine. Working in groups of two or three, some students referenced texts with geographical content in simple chapter and verse format, that is: “Matt 11:22.” Others added arrows indicating the apparent direction of travel. They also included additional distinguishing features, differentiating between places solely mentioned in the text, and places integral to the plotline of a given narrative. For example, students noted that Capernaum is simply mentioned in Matthew 11:23 “And you, Capernaum, will you be exalted to heaven?” However, in Matthew 17:24, Capernaum is identified as a geographical location visited by Jesus and his disciples: “When they reached Capernaum, the collectors of the temple tax came to Peter and said, ‘Does your teacher not pay the temple tax?’”

Students used color-coded blue and green annotations of the “Matthew” layer (blue for places mentioned and green for places visited), effectively distinguishing between disparate types of data (FIGURE 1). (While Capernaum is mentioned in Matthew 11:23, the events of the narrative in Matthew 17:24 are actually set at this location.)

In a subsequent exercise, students addressed Mark and Matthew’s respective accounts of a journey Jesus took to the regions of Tyre and Sidon. In the Gospel of Mark, Jesus travels from Gennesaret on the Sea of Galilee (Mark 6:53–55) to the “region of Tyre” (Mark 7:24–29) and then back to the Sea of Galilee “by way of Sidon” (Mark 7:31). In Matthew, Jesus travels from Gennesaret (Matthew 14:34–15:20) to the “district of Tyre and Sidon” (Matthew 15:21–28) and then back to the Sea of Galilee (Matthew 15:29–38). As students began to map the two accounts, they immediately noticed incongruities in the geographical details. One group noted that the journey reported in Mark takes the traveler perhaps forty miles out of his or her way,

over mountainous terrain, to return to the Sea of Galilee (FIGURE 2). Matthew's account appears to smooth over the physical and geographical problems presented by the sequence in Mark. Such divergent geographical detail sparked questions similar to those debated by scholars. Students asked: Was the author of the Gospel of Mark familiar with the geography described in the text? Might the author of the Gospel of Matthew have corrected known geographical problems in the book of Mark because of his own first-hand knowledge of the region? Could this suggest comparable local knowledge on the part of his intended audience?

As narrative cracks in the textual record emerged, students naturally moved from “minding” to “mining” the gaps in the texts under consideration. Among even the most doctrinaire students, the impulse to gloss over narrative discrepancies was replaced by curiosity, as each discrepancy offered the opportunity to identify and explore unexpected “relationships, patterns, and trends” (“What is GIS?”). Paralleling Drummond's reflections on her journey in the Holy Land, such consideration made the continuum that links storytelling to history more obvious. Students intuitively grasped that apparent gaps in an ancient narrative sequence are akin to those encountered in modern travel writing. Narrative descriptions of an afternoon itinerary might easily involve visiting several points of interest actually dozens of miles apart. Readers familiar with the geography of a region know that a narrative itinerary could not possibly have been visited and completed as described. Instead, these narrative choices signal that some other authorial agenda may be at play and merit consideration.

As students grew increasingly comfortable with close reading and annotation, we introduced a simple but powerful pseudo GIS of first-century Palestine. This low-tech interface consisted of layers of acetate transparencies combined with paper maps. Working with this physical layering attuned students' sensibilities to the affinity between the strata of biblical source material and the structures of a GIS. Geographical content invited experimental juxtaposition of a physically layered range of source material. It simultaneously de-familiarized the familiar contours of biblical landscapes in useful and unexpected ways.

To prepare for this exercise, each student group was provided a set of transparent acetate sheets. These layers had been created beforehand. Each reproduced discrete geographical features, roughly consonant with topographical details encountered in conventional maps of the ancient



Figure 3



Figure 4

Mediterranean (FIGURE 3). A paper base map showed physical terrain (mountains, plains, water). Additional transparencies indicated the locations of port cities, places mentioned, and Roman roads. Together, the layers allowed student to variously combine and annotate respective acetate layers to iteratively examine, manipulate, and juxtapose pertinent geographical information. As students continued to work with the Gospel narratives, and annotate chapter and verse citations of included place names, they used these additional data layers to visualize geographical clusters, compare distributions, and judge the relative proximity of significant features of the ancient landscape. To give them a better sense of relative geographical scale, students also received a transparent map of the coast of southern California, on the same scale as the Mediterranean map (FIGURE 4). Because for most students, Palestine is an unfamiliar part of the world, this local landscape provided a useful frame of reference for

judging the proximity of locations named in the texts.

Borrowing terminology from historical geographers Ian Gregory and Paul Ell, through using this simple but versatile visual interface, students moved from conceiving maps as “end products” to viewing them as “research tools” (10–11). Applying a geographical hermeneutic invited engagement with the spatial aspects of historical data in new ways (11–12). Students were quickly able not only to organize “facts” about the first centuries of the Common Era, but also to understand, and locate these “facts” in physical space. Mapping and other forms of visualization made literary landscapes far more accessible than they would have been otherwise.³ Whether annotating a map with scripture citations, plotting divergent accounts of the same events, or juxtaposing narrative story lines with geographical data layers, students developed strategies for engaging both common and distinctive aspects of text and context. As students repeated these exercises with different passages, they began to understand and adjudicate the finer points of scholarly debate in critically informed ways. Through pairing close reading with critical mapping, subtle disparities in the sequencing of seemingly identical events became evident. These narrative gaps became key access points, elucidating both text and context.⁴

3 Other contemporary tools for opening up biblical texts, beside maps, include artistic recreations of scenes described in the texts, photographs of landscapes, diagrams of building layouts, or displays of extant artifacts.

4 In her article, “Teaching Geographic Visualization without GIS,” Knowles considers the productive intersections that can be developed through using geographical models in the classroom. In “GIS and History,” Knowles likewise offers useful models for critically combining paper and digital mapping interfaces.

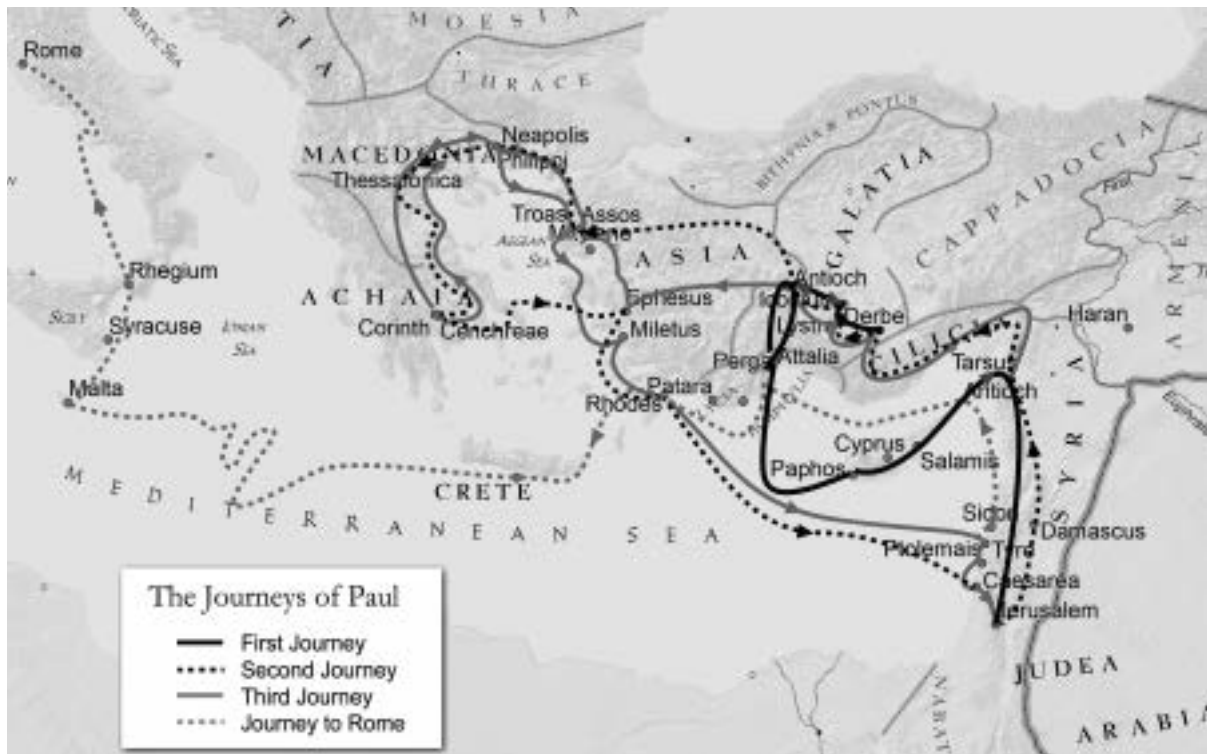


Figure 5

Mapping the Layered Legacy of Paul

The success of introductory experiments with paper maps and Gospel texts inspired further engagement with geographic models and GIS in subsequent portions of this course. As we extended the mapping project to address a broader range of early Christian source material, the ready availability of visual and textual sources pertaining to Paul offered an alternate entry point to introduce students to minding and mining the gaps in layered trajectories of biblical text. (Though neither precise nor comprehensive, the biblical canon includes mention of well over a thousand unique places and nearly eight thousand discrete references to geographical locations.) In this phase, the class moved from further work with prepared maps to digital interfaces.

Readers (and scholars) of Christian scripture have long relied on maps of the Journeys of Paul to trace the contours of an emergent Christian landscape (FIGURE 5). In popular (and sometimes scholarly) imagination, these familiar maps are widely accepted as historically representative. Few questions are raised about the relative merits of the data depicted; fewer still about the accuracy of the smoothly contoured Pauline landscape represented. The mapped itineraries pictured in these traditional visualizations refract three or four missionary tours, each often color-coded to aid visual accessibility.⁵ The range of Paul's travel encompasses the Mediterranean world. Seamlessly authoritative, the contours of

5 The Acts of the Apostles, arguably the latest layer in writings by and/or about Paul, has 364 place mentions, while the books attributed to Paul have only 93. Typical maps of Paul found in Bibles, and used in both scholarly and popular publications, often represent the stories related in Acts as missionary journeys of Paul, with three or four routes similar to the color-coded trajectories depicted in Figure 5.

6 Examples of such maps abound, both in Bibles and related reference works. An internet search produces many other examples. Perhaps the most recent rendition appears in Todhunter's *National Geographic* article on contemporary Christian pilgrimage, "In the Footsteps of the Apostles" (50–51).

the Apostle's itinerancy present a reassuring picture of a steady linear trajectory that begins in Jerusalem and ends in Rome.⁶

As students began investigation aimed at minding and mining the gaps in the textual traditions that undergird conventional representations of Paul, they were again re-examining familiar content in an alternate light. Students used Gregory and Ell's consideration of "what impact location and space have on all aspects of human behavior" (18), to consider how ancient interactions and itineraries might be influenced by environmental factors. For example, in a class session focused on "Women in Early Christianity," mapping the paths of Paul's letters and their carriers immediately provoked students' questions about travel in the ancient world. The women named as emissaries in a number of letters sparked discussion about conditions of travel for women. Students wondered how a female letter-carrier might navigate a shipboard environment composed largely of male travelers. They also considered whether the ability to travel might serve as a measure of a woman's relative wealth and or autonomy. How many ancient women traveled, and for what reasons? As the concrete particularities of a localized geographic hermeneutic revealed the enigmatic character of Paul's writing, such material questions became the starting point for further research. Each invited closer analysis of the particular roles assigned to women in each of Paul's letters.

When students began to engage Paul's letters as discrete texts, many were surprised to learn that only a limited number of the documents traditionally attributed or attached to Paul are believed to derive directly from Paul's own hand. Of the thirteen letters ascribed to Paul, most scholars agree that only seven were written, or composed, by Paul.⁷ The remaining six appear to be the work of successive generations of disciples writing in the name of Paul (and claiming his authority). A complementary source, the Acts of the Apostles, does not overtly make any claim to Pauline authorship. Nonetheless, nearly three-quarters of the document's twenty-eight chapters address some aspect of Paul's life and travels. The content encountered in Acts, likewise accounts for the bulk of narrative detail attached to Paul as a historical figure. While critical readers have long noted that this document is clearly composed by a figure sympathetic to Paul, the narrative itself appears to represent an independent tradition about Paul, formulated well after Paul's death. Given the marked disparity between this source and the letters widely accepted as written by Paul, there is some debate about whether the author of Acts had access to Paul's letters.

As attention shifted from the data-rich content of Paul's journeys reported in Acts to the comparatively skeletal detail in the undisputed letters of Paul, students immediately noted distinct contrasts in the geographical features discernible in the respective strata of Paul's writings. Tasked with redrawing the traditional map of Paul (FIGURE 5) in a manner that took seriously the relative reliability of available source material, students commenced exploration of *this* layered landscape by according

7 For a detailed discussion, see Ehrman.

increased value to data derived from letters ostensibly written and/or composed by Paul himself.

This phase of experimentation yielded maps that provocatively countered the smooth linear portrayals that characterize traditional “Journeys of Paul” maps. Privileging spatial patterns based solely on the most reliable historical source material available—the undisputed letters of Paul—the students created maps that were sparse and decidedly nonlinear. The most striking new Geography of Paul was hand-drawn. Rather than glossing over wide gaps in the historical record of this Apostle’s travels, it focused solely on what could be securely ascertained, the relative density of Paul’s connections to communities (FIGURE 6).

The included data and design of this hand-drawn map was so provocative that it subsequently became the model for two maps created for classroom use. Produced by Steve Benzek, using GIS, these computer-generated versions transformed the loci of letter concentrations visible in the student map into hotspots using kernel density imagery. While these GIS maps maintained the students’ conceptual structure, each expanded the underlying data set to include locations mentioned in all thirteen letters attributed to Paul. By combining geographic information derived from letters written by Paul with information in letters written in the name of Paul, the first of these new Geographies of Paul offers a visualization of emergent influence organized around the nascent communities that were the result of Paul’s investments (FIGURE 7).

The second map leverages the layered and iterative capacities of a GIS through more refined parsing of the underlying data. This more nuanced new Geography of Paul uses colored symbols to visually distinguish between letters written by Paul and letters written in the name of Paul (FIGURE 8). Any suggestion of smooth linear progression is noticeably absent.

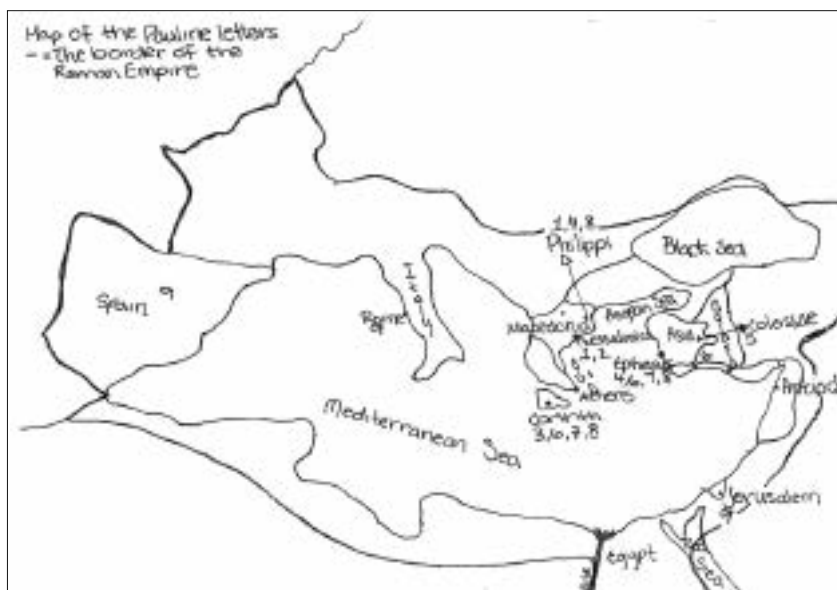


Figure 6

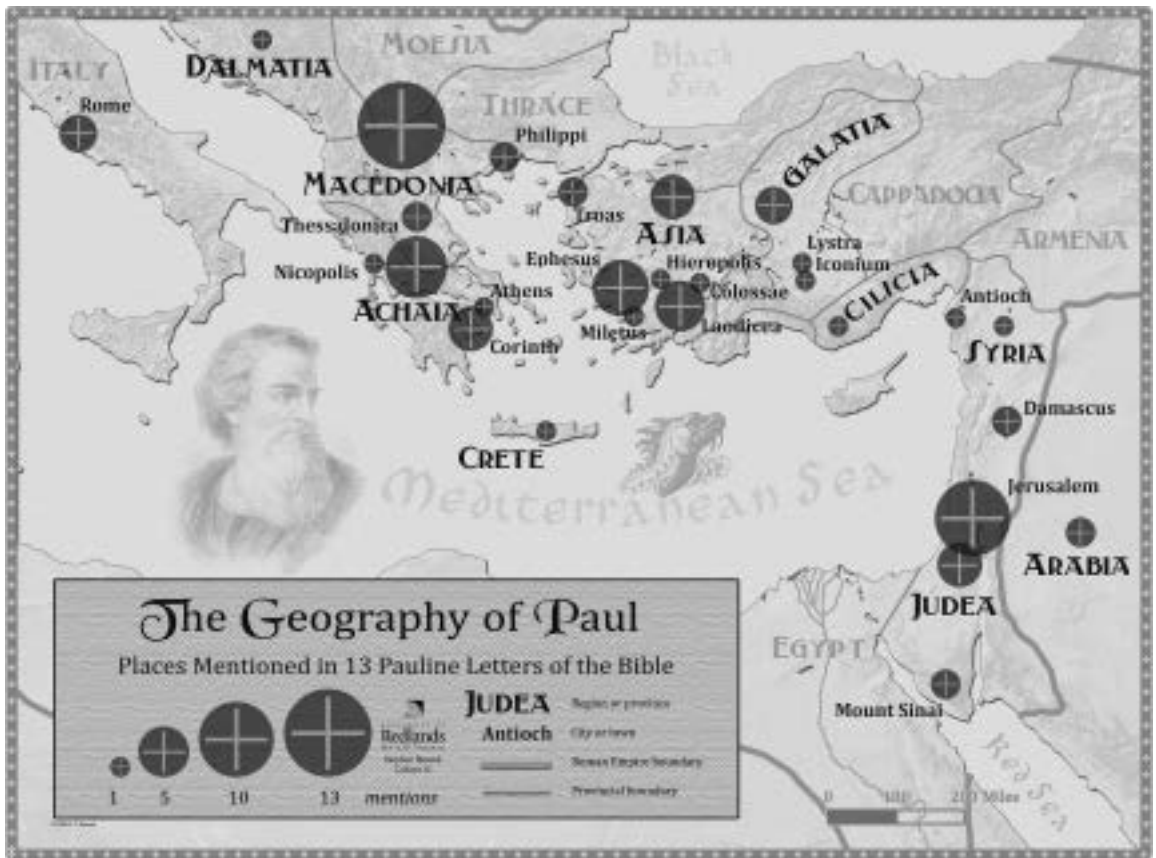


Figure 7

As viewers, students discussed the distinctive features of each map. As they likewise considered the potential for visualizing other data combinations related to Paul, it was no longer the range of Paul's journeys that made included content interesting, but instead the variable character of the data layers represented. Students also noted the degree to which the smooth lines of Paul's established itinerancy effaced gaps and fissures in the underlying historical record. Because more discrete visualization rendered visible the geographic diversity that characterizes early Christian source material—by, in the name of, and about Paul—visual and textual gaps offered unique access points. Challenging the prescriptive ethos of traditional maps of Paul, each map invited open-ended investigation, exploration, and discussion among students.

Digital Mapping

At this point students were introduced to the digital toolkits available in ArcGIS On-line. Although the learning curve for work with this interface is slightly steeper than that for Google maps, such initial investment is well rewarded. The online version of ArcGIS offers a scaled down version



Figure 8

of the sophisticated analytic and visualization tools available in more complex desktop versions of ArcGIS. A user-friendly but powerful interface, it captures the best of both worlds, and has proved ideal for classroom use. As we commenced work with a live GIS, students were tasked with mapping and comparing the geographical itinerary recounted by Paul in his letter to the Galatians, with a parallel account of Paul's movements reported in Acts (FIGURE 9). To foster discussion, we also assigned J. Brian Harley's article, "Deconstructing the Map," which considers the degree to which mapping (like text production) remains an inherently value-laden enterprise.

Because using digital tools within a humanities classroom often meets with a mixed response, students' prior work with paper maps oiled the wheels of this transition to a digital interface. Some students found repurposing technological tools intriguing, others a source of anxiety. Because they had already been introduced to the conceptual structures of a GIS through work with paper maps and acetate overlays, some students' anxiety about technology was allayed. Likewise, having gained a clear understanding of the malleable character of a GIS by first conceptualizing then discussing different visual representations of the same data, students were more comfortable experimenting with their own alternate, often quite innovative, digital reconfigurations.

In creating these GIS-generated cartographies, students quickly noticed the contrast in geographical representations derived from data by Paul as opposed to data about Paul. Paul's own account of his travels, as recorded in the introductory sections of Galatians (1:11–2:14), reflects an irregular, relatively organic path of travel (FIGURE 9–left). This stands in

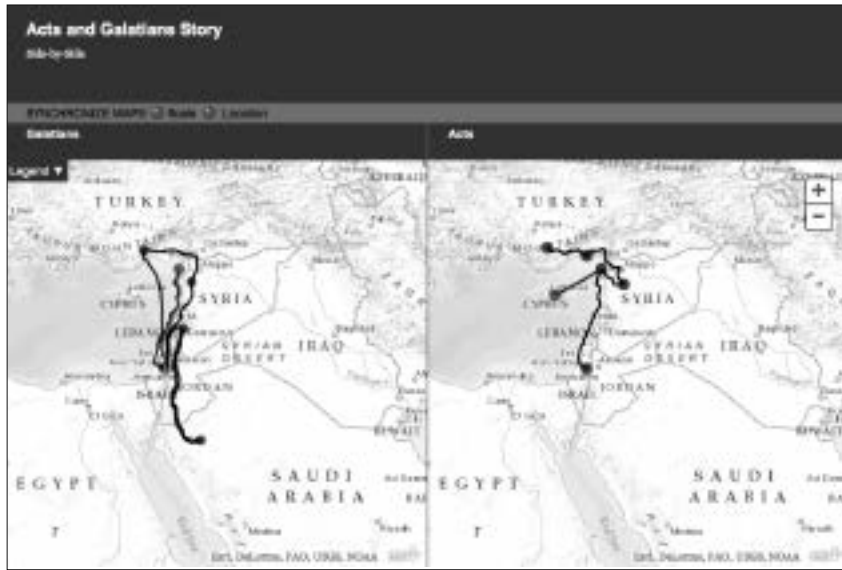


Figure 9

stark contrast to mapped data which derives from the account recorded in Acts (15:1–41; FIGURE 9 – right), which depicts a more regular, linear progression. Offering a dramatic visual record of the interpretive processes that separate early and late source layers, such cartographic disparity again sparked consideration of literary genre and historicity, and perhaps more critically, authorial aims and agendas.

In subsequent discussion, students reflected on the disparate visual refractions produced by mapping these parallel textual accounts. Extending Harley’s insights, they considered “the social forces that have structured” the representational conventions of both religion and cartography (3). As we debated the complexities inherent in the “locat[ion] and presence of power—and its effects—in all map [and textual] knowledge,” (3) students considered questions like: Who gets to choose the particular information pictured on a given map? What outside factors might govern the selection of sources included in a particular canon? As they examined long “assumed links between the reality and representation” (3) of Paul, students began to interrogate derivative geographies, routinely encountered in both classroom and popular venues. A number noted the degree to which popular notions of the emergent “Christian world” are defined by the events narrated in Acts, and reproduced in conventional, maps of Paul. Some wondered whether Christianity’s broader identification as a “western” religion is perhaps also a misrepresentation.

Through engaging this final sequence of maps, students were left with snapshots of Paul and his spheres of influence that were not certain but suggestive. Relative to the contours of Christian origins, these representations invited students to imagine a figure and emergent communities less securely situated in any one, artificially codified ancient landscape. Instead,

as students conceptually disassembled and reassembled a range of configurations, almost as one would a puzzle, respective geographical refractions underscored how little we know about Paul (and Christian origins), and how much what we think we know has been influenced by later confluences of often contradictory early source material.

Conclusion

It may seem counterintuitive that the conceptual constructs of GIS, a scientific system designed for analyses of minute exactitude, can be used to study contours of the ancient past—a fundamentally inexact, and shifting landscape. However, within a classroom setting, it is the inversion of its exacting character that makes GIS an effective tool. Because any knowledge of the past is fragmentary, narrative inconsistencies, fissures, and discrepancies abound. While in traditional settings, such discontinuity has often been treated as a riddle that through some series of mental gymnastics must be resolved or explained away, when viewed through a geographical lens, apparent gaps in the historical record evoke questions that resist easy answers.

Within the field of biblical scholarship, the conclusions that result from geographically parsing the Gospels and Paul are not new. However, the pedagogical and research implications inherent to this fledgling series of GIS-inspired exercises are promising. By incorporating a data-rich spatial perspective into the study of ancient texts, an alternate array of emergent variables presents a useful prism through which students can view ancient contexts.

Although initially these approaches were developed for classroom use, the potential to extend this model to other ancient figures, texts, and spaces, invites development in both pedagogical and scholarly directions. The conceptual fluidity of a GIS has affinities with the processes increasingly used by scholars and students engaged in critically deconstructing ancient texts and reconstructing of ancient contexts. The tensions and inconsistencies—the narrative gaps within a text or historical construct—often afford access to unexpected rich historical data. By applying exacting tools to less-than-exact data not only does one gain a new appreciation for how much geography matters, but as Richard G. Healey and Trem R. Stamp have observed, “GIS makes it much easier to determine the precise extent to which it matters in varying locations and at various times” (584).

Using GIS, further pedagogically focused consideration of the data related to the Christian canon could take on such topics as gender, travel, migration, economics—each yielding significant insight into the historical character of emergent communities. As more fluid representations necessarily involve students and scholars in the work of minding, and mining, both continuities and gaps and certainty and uncertainty, even the most familiar landscapes present productive opportunities for critical classroom engagement and focused scholarly research.

 WORKS CITED

- Alibrandi, Marsha. *GIS in the Classroom: Using Geographic Information Systems in Social Studies and Environmental Science*. Portsmouth, NH: Heinemann, 2003.
- ArcGIS Online. Environmental Systems Research Institute (Esri). 12 June 2014 <<https://www.arcgis.com>>.
- Benzek, Stephen. "Spatially Interactive Literature Analysis System (SILAS): An Interactive Tool to Study the Narrative Landscape of Ancient Texts." Masters Thesis. University of Redlands, 2008.
- Drummond, Dorothy. *Holy Land, Whose Land? Modern Dilemmas, Ancient Roots*. Terre Haute, IN: Fairhurst, 2002.
- Ehrman, Bart D. *The New Testament: A Historical Introduction to the Early Christian Writings*. Fifth Edition. New York: Oxford UP, 2011.
- Gregory, Ian N. and Paul S. Ell. *Historical GIS: Technologies, Methodologies and Scholarship*. Cambridge: Cambridge UP, 2007.
- Harper Collins Study Bible*. Student Edition. New York: Harper Collins, 2006.
- Harley, J. Brian. "Deconstructing the Map." *Cartographica* 26 (1989): 1-20.
- Healey, Richard G. and Trem R. Stamp. "Historical GIS as a Foundation for the Analysis of Regional Economic Growth: Theoretical, Methodological, and Practical Issues." *Social Science History* 24 (2000): 575-612.
- Knowles, Anne Kelly. "A Case for Teaching Geographic Visualization without GIS." *Cartographic Perspectives* 36 (2000): 24-37.
- _____. "GIS and History." *Placing History*. Edited by Anne Kelly Knowles. Redlands, CA: ESRI Press, 2007. 1-25.
- Larsen, Lillian I. "The Good News According to..." University of Redlands Christian Scriptures Course. Redlands, CA. October, 2007. Course Lectures and Discussion.
- Todhunter, Andrew. "In the Footsteps of the Apostles." *National Geographic* 221.3 (2012): 42-65.
- "What Is GIS?" http://www.esri.com/what-is-gis/overview#overview_panel. Accessed 31 Dec. 2013. Web.