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## **“Geography, Archaeology, Art History: A Case Study for a Multidisciplinary Approach to Mapping Architectural Heritage”**

By Kim McCarty, Britteny Gregory, and Mickey Abel, University of North Texas

Tadhg O’Keeffe, in *Archaeology and the Pan-European Romanesque*, made the claim that historically, art historians have had guardianship over certain domains, the study of Romanesque architecture in particular.<sup>1</sup> As an archeologist, he challenges this understanding by questioning the art historical use of the designation “Romanesque,” to represent a uniform *style*. At the core of this critique is the positivistic treatment of the buildings of this period. In an effort to move beyond the notion of these buildings as fragmented or regionalized re-formulations of an antique vocabulary, O’Keeffe proposed several provocative points for consideration. Rather than a history of “dismembered” forms, he suggested that buildings should be considered as a type of text that can be read as a multivalent history of meanings.<sup>2</sup> As such, buildings become “complex discursive objects of visual culture,” which are “localized in and contributing to networks of understanding at various levels.”<sup>3</sup> This expanded definition opens the analysis to the reception of “contingencies and multiplicities of meaning” and highlights the building as an

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<sup>1</sup> T. O’Keeffe, *Archaeology and the Pan-European Romanesque* (London, 2007).

<sup>2</sup> For O’Keeffe, 43, 98, one of the primary differences separating art history methodologically from archaeology is agency. In archaeology agency connects actors to the social context. Art history on the other hand highlights individual agency. It is the difference between social determinism and social relativism. In a similar vein, J. Morland, *Archaeology and Text* (London, 2001), argues generally for an archaeological remedy to the disconnect that lies between the written “word” studied by historians and the “object” studied by the archaeologist.

<sup>3</sup> O’Keeffe, 107.

“agent of the discourse.”<sup>4</sup> Eschewing the consistency implicit in an art historical *style*, O’Keeffe’s definition facilitates a theory of difference where the elements identified as Romanesque can be seen to come together as a series of *stabilizations*.<sup>5</sup> Defined as “points in time and place where a set of characteristics coalesce and stay constant,”<sup>6</sup> the identification of these nodal points focuses the analysis down from the generalized, to a level where meaning is found in the specific and the local. Importantly for the project that is the topic of this paper, O’Keeffe suggested that this shift in focus can be accomplished with an increased use of technology.<sup>7</sup> Criticizing the “connoisseur’s eye,” and art history’s reliance on an individual’s visual memory, he saw the strategic use of technology serving to qualify our observations, quantifying them in the form of data. Adding a technical component to our analysis will shift the weight of our conclusions from the positivistic to the challengeable, thus elevating them to the rank of a scientific hypothesis. From a practical standpoint the question is what type of technology is appropriate to the task? And how does one implement this element into an art historical research program? Ultimately, how will the shift in focus proposed by way of technology change the way we consider medieval buildings?

Our study takes on this challenge by accommodating O’Keeffe’s archaeologically based suggestions, as it combines the visual methodologies of the art historian with the technical tack of the geographer. This essay does not in the end propose a concrete set of conclusions. We seek rather to expand and deepen the perspective of our problem by illuminating the benefits of adding a technology element to our research agenda, thus shifting our approach towards the

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<sup>4</sup> O’Keeffe, 98, 103.

<sup>5</sup> O’Keeffe, 25-28.

<sup>6</sup> O’Keeffe, 10.

<sup>7</sup> O’Keeffe, 63, 88-89. He claims that his method falls between that of the “scientist” and the “culturist.”

scientific. We propose to outline here the genesis and process of a multidisciplinary project, highlighting the planning process, the equipment used, and methodologies engaged as we evaluate the theoretical clashes, productive collaborations, and potential gains entailed in this type of cross-disciplinary program.

The initial objective of our project was to examine a large set of twelfth- and thirteenth-century churches located on the high sierra following the upper Duero River in the province of Soria, Spain, which is located to the east of Madrid. The corpus of these churches was suggested by an article published in this journal in 2005 entitled “Strategic Domain: Reconquest Romanesque along the Duero in Soria, Spain.”<sup>8</sup> That article showed that Soria was well defined area with a unique identity as early as the Roman era, an identity that was constantly in flux with the battles of the Reconquest. With this in mind, the article examined the relationship between the hilltop fortresses of the Soria region built in conjunction with the Reconquest and the small *ermita*<sup>9</sup> churches located at their feet. **(fig. 1)** The conclusion drawn from mapping these relationships was that both the fortresses and the *ermita* responded to the location of the Duero River with the orientation of their portals.<sup>10</sup> **(fig. 2)** Regardless of the political affiliation of the builders, the religious faith of the local inhabitants, or visual accessibility of the river, the portals of fortress and *ermita* were found to face north if they were located on the south side of the river, and conversely, to face south if they were located on the north side of the river. And thus while

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<sup>8</sup> M. Abel, “Strategic Domain: Reconquest Romanesque Along the Duero in Soria, Spain,” *Peregrinations* 2/2(2007): 1-57, (<http://peregrinations.kenyon.edu/vol2-2>).

<sup>9</sup> Historically, an *ermita* is defined as the dwelling of a hermit—a hermitage. It is a term generally used to distinguish small isolated churches from parish churches that had sacramental rights. Evidence presented here suggests that at least some of the churches encompassed in this study processed these rights, and thus the colloquial usage of the term “*ermita*” is not technically correct. It is, however, how these churches are indicated on maps, road signs, and guide books. We use it here to distinguish these essentially undocumented chapels from the more codified designators of the twelfth-century churches, where we are on relatively solid ground in assigning them to a parochial system.

<sup>10</sup> The visibility referenced here in association with the fortress doors is similar to that of the *miradores* of Islamic palaces. See D. Fairchild Ruggles, “The Alcazar of Seville and Mudejar Architecture,” *Gesta* 43/2 (2004), 87-98.

the geographical setting of these buildings in relation to the local topography was significant in conveying the political ideology and social status of the powers that controlled the strategic



Figure 1, Gormaz, Soria, fortress and ermita

hilltop elevations, the pattern of orientational alignment of the portals suggested that these buildings were actually addressing the people who inhabited the broad plain on either side of the river.<sup>11</sup> This analytical conclusion added credence to the archaeological view that the inhabitants

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<sup>11</sup> For the source of this line of thought, see Moreland, 35-44.

of the plain and the work they performed as farmers and shepherds were necessary to both Muslim and Christian economies.<sup>12</sup> Recognized as valuable assets, these people were both

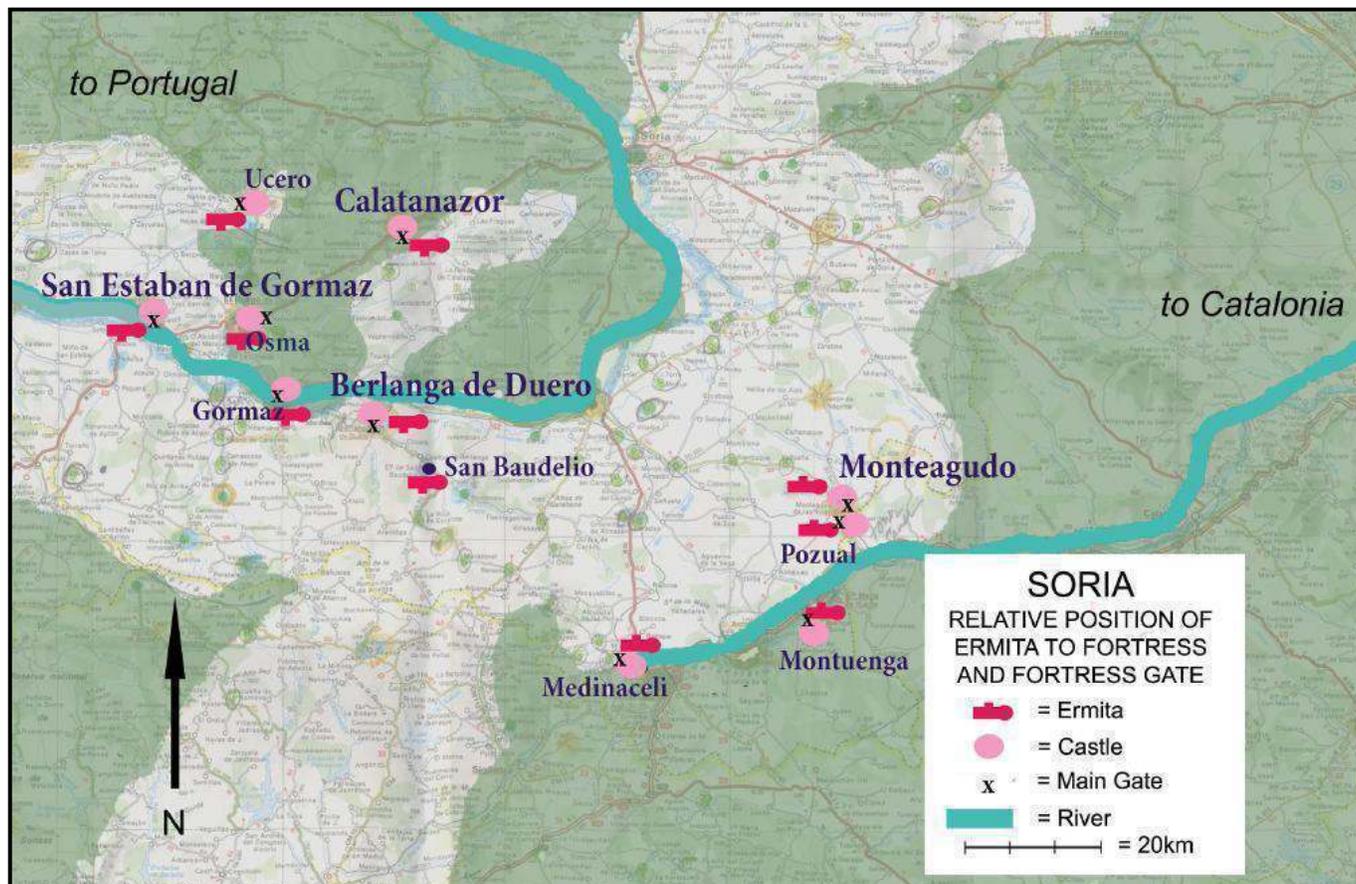


Figure 2, Soria region, map of ermita orientation

protected and supported by whoever held the fortress-dominated hilltops. As such, they were essentially unaffected by the shifts in power at the top.

<sup>12</sup> J. Gautier-Dalché, "Reconquête et structures de l'habitat en Castille," *Castrum 3: Guerre, fortification et habitat dans le monde méditerranéen au moyen âge* (Madrid, 1985), 200-206; D. Lomax, *The Reconquest of Spain* (New York, 1978), 96; J. Ángel García de Cortázar, "Sociedad rural y organización del espacio en la Castilla del año mil," *Campagnes médiévales: L'homme et son espace* (Paris, 1995), 613-625; J. Powers, *A Society Organized for War: The Iberian Municipal Militias in the Central Middle Ages 1000-1284* (Berkeley, 1988) 13-24; C. Sánchez-Albornoz, *Despoblación y Repoblación del Valle del Duero* (Buenos Aires, 1966); T. Glick, "Resettlement and Redistribution of Land," *Medieval Iberia: Readings from Christian, Muslim, and Jewish Sources*, O. R. Constable, ed. (Philadelphia, 1997), 228-231. For a study of the people caught in this nebulous period, see T. Burman, *Religious Polemic and the Intellectual History of the Mozarabs, c. 1050-1200* (Leiden, 1994), 20-25

The buildings examined in Abel's 2005 study were limited to those constructed before or during the time of the Reconquest. Following this period, when the power struggles had ended, there seems to have been an expansion in the population on the Sorian plain and a growth in the economy evidenced by the large number of extant buildings constructed during this era. It is the ecclesiastical buildings of this post-Reconquest period that define the larger corpus of structures considered in the present study. We begin with the same set of questions posed in relation to the earlier buildings, re-directing them to those churches built after the Reconquest efforts had pushed the Muslim forces to the south and when Christians gained a firm control over the entire region on both sides of the Duero. With the fundamental acknowledgement that these ecclesiastical structures were built on the plain itself, rather than the mountain tops on either side of the river, the primary problem underlying our questions was the difference in the landscape. Did the churches built on this different terrain continue the orientational relationship with the Duero River observed in the analysis of the earlier buildings? Did these new churches serve as a network of signposts broadcasting the secure arrival of Christianity as suggested by the 2005 article?<sup>13</sup> If so, to whom were they broadcasting, and how were these signs read? Most particularly, we wanted to know what role the local geography played in that visual understanding. We ask, therefore, how the inhabitants of the plain would have seen and understood the visual relationships between these new buildings and the landscape on which they

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<sup>13</sup> The idea of a church façade working as a billboard comes from C. Altman, "The Medieval Marquee: Church Portal Sculpture as Publicity," *Popular Culture in the Middle Ages* (Bowling Green, 1986), 6-16. See also R. Walker, "The Wall Paintings of the Panteón de los Reyes at León: A Cycle of Intercession," *Art Bulletin* 82/2 (2000), 200-225; and M. Abel, "Before Nationalities: Peace Initiatives and Corporate Identity via the Medieval Parish Church Portal," *Connections: European Studies Annual Review*, Center for the Study of Europe, Brigham Young University, Vol. 1 (2005), 6-11, (<http://europe.byu.edu/rmesc.html>).

were built.<sup>14</sup> At this more local level--that is, within the same vicinity as the places where the people lived, worked, and once new churches were built, worshipped--would the Duero River have continued to be the ideological landmark that it had represented in the previous era?<sup>15</sup> Or was there a new “sense of place” driving the construction of the post-reconquest churches?<sup>16</sup>

As two graduate students from two very different disciplines-- geography and art history — our involvement in the project began as students in a “Geography and Art” seminar co-taught by Dr. Abel and Dr. Jennifer Way, both of the University of North Texas. In this class we discussed geography as a theoretical model, reading numerous, diverse publications on place and space, landscape, and cognitive mapping, to form an understanding of how concepts of geography might be employed in the art historian’s study of art and architecture. Following this initial exploration we had the opportunity to travel to the Soria region of Spain during the summer of 2008 to carry out the field work on our proposed project under the direction of Dr. Abel.

A combined effort such as the proposed program of study involving two academic disciplines can be encumbered by misunderstandings and contention, as each discipline enters the project with certain expectations for the way things are to be done both in research

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<sup>14</sup> A similar question is traced in early medieval Italy. See R. Francovich and R. Hodges, “Conclusions: Four Stages of Transformation,” in *Villa to Village: The Transformation of the Roman Countryside in Italy, c. 400-1000* (London, 2003), 106-114.

<sup>15</sup> This is the line of inquiry presented by historians of the period before the conquest such as Lomax and Powers; R. Collins, *Early Medieval Spain: Unity in Diversity 400-1000*, (New York, 1983); and C. Bishko, “The Spanish and Portuguese Reconquest,” *A History of the Crusades*, K. Setton ed. (Madison, 1975), Vol. 3: 396-456.

<sup>16</sup> E. Casey, “How to Get from Space to Place in a Fairly Short Stretch of Time: Phenomenological Prolegomena,” *Senses of Place*, S. Feld and K. Basso eds. (Santa Fe, 1996), 14; C. Geertz, “Afterword,” *Senses of Place*, S. Feld and K. Basso, eds. (Santa Fe, 1996), 260-262; C. Renfrew and P. Bahn, “What Did They Think?: Cognitive Archaeology, Art, and Religion,” *Archaeology Theories, Methods, and Practice* (New York, 2004), 393-397, 406-408; Kevin Walsh, “A Sense of Place: A Rule for Cognitive Mapping in the ‘Postmodern’ World?,” *Interpreting Archaeology: Finding Meaning in the Past*, Hodder, et al eds. (London, 1995), 131-140; and S. Feld and K. Basso, “Introduction,” *Senses of Place* (Santa Fe, 1996), 11. A case study for this type of thought can be found in D. Smail, *Imaginary Cartographies: Possession and Identity in Late Medieval Marseille*, (Ithaca, 1999) 1-41.

preparation and in the field. Pre-trip planning and consistent weekly communication were invaluable as we agreed upon project goals and the methods for achieving them. The primary objective in mapping the twelfth-century churches of the Sorian plain was to grasp the architectural building patterns as they related to both the physical terrain and the twelfth-century Christian development of that landscape. We hoped to see, by way of this mapping exercise, relationships between the land, the buildings, and the ideology of the people who built them. Important in this program was the method we would use for the collection and visualization of a variety of data in a manner that would facilitate a period-specific perspective of the landscape. For this we realized that there were benefits in creating our own geographically specific and topographically correct maps of the proposed area. We understood that in scientific terms mapping refers to “plotting points and finding common terms of reference with which to analyze data.”<sup>17</sup> Acknowledging, however, that this process is also a creative act that describes and constructs a place, we were mindful of what we chose to exclude from the study as well as what was to be examined.<sup>18</sup> For example, because we were primarily interested in the role the landscape played in the perception of these churches, we chose not to include the churches within the city of Soria itself. Because of the close proximity of the churches within this city to one another, we decided that these churches would have been perceived as essentially urban, and

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<sup>17</sup> Janet Abrams and Peter Hall, “Mapping Mapping” in *Else/Where: Mapping New Cartographies of Networks and Territories*, (University of Minnesota Press, August 2003), 1. For the practice of mapping in the Middle Ages see, E. Edson, *Mapping Time and Space: How Medieval Mapmakers Viewed their World*, (London, 1997), vii; and P. D. A. Harvey, *Medieval Maps*, (London, 1991).

<sup>18</sup> Alternative views to mapping are discussed in Geoff King, *Mapping Reality: An Exploration of Cultural Cartographies* (New York, 1996); D. Cosgrove and S. Daniels eds., “Introduction,” *The Iconography of Landscape* (Cambridge, 1988), 1-10; and J. B. Harley, “Maps, Knowledge and Power,” in *The Iconography of Landscape*, D. Cosgrove and S. Daniels eds. (Cambridge, 1988), 277-312. For the geographical understanding of “place,” see T. Creswell, *Place: A Short Introduction* (Oxford, 2004); T. Yi-Fu, *Space and Place: The Perspective of Experience* (Minneapolis, 1977); N. Castree, “Place: Connections and Boundaries in an Interdependent World,” in *Key Concepts in Geography*, S. Holloway, S. Rice, and G. Valentine, eds. (London, 2003), 165-187; and Phil Hubbard, “Space/Place,” in *Cultural Geography: A Critical Dictionary of Key Concepts*, D. Atkinson *et al* eds. (London, 2005).

therefore quite different from the status of the other, rural churches in the region.<sup>19</sup> Our expectation was that our analysis of the maps we produced would reveal something new, but in order for this revelation to be justified we also understood that our findings had to be verifiable; they had to sustain not only the art historian's visual scrutiny, but the geographer's scientific qualifications.

To accomplish our geographically-theorized objective, we decided early on to supplement art historical observations with the type of data produced by geographers and archaeologists and the equipment they use to record and display data in the field. We wanted our maps to include not only visually perceptible elements such as topographical features and spatial relationships, but also quantifiable information obtained in the field, such as cardinal orientation, elevation, and building measurements. In addition we wanted to embed into our maps the building's stylistic criteria, as well as building phases in those cases where the church had been re-modeled in the Middle Ages.

From a geographer's point of view, one of the most important tasks in undertaking this type of field project is to establish the scope of the project in order to determine the equipment required. Initially, we outlined the parameters of our project corpus by scouring existing art historical catalogues and modern travel guides.<sup>20</sup> From these we compiled a list of churches built in the era under consideration and a corollary image bank for preliminary analysis. We

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<sup>19</sup> P. Díaz, "City and Territory in Hispania in Late Antiquity," *Towns and Their Territories Between Late Antiquity and the Early Middle Ages*, G. Brogiolo, N. Gauthier, and N. Christie eds., (Lieden, 2000), 3-5.

<sup>20</sup> For this type of listing of the Romanesque ecclesiastical structures in the region of Soria, see *Enciclopedia del románico en Castilla y León*, Soria, Volumen I-III, (Aguilar de Campoo, 2002, 51-1340; M. Durliat, *El arte románico en España*, (Barcelona, 1972); M. Gómez-Moreno, *El arte románico español*, (Madrid, 1934); J. Gaya Nuño, *El románico en la provincia de Soria*, (Madrid, 1946); and W. Whitehill, *Spanish Romanesque Architecture of the Eleventh Century*, (Oxford, 1968).

supplemented this list with additional religious sites indicated on a detailed Spanish military map at the scale of 1/100,000, making note that the validity of these added sites would have to be verified in the field. For cross-referencing purposes the initial catalogue sites were located and highlighted on these military maps. Interestingly, many of these sites were not labeled on the military map as having a religious monument indicating to us that the criteria used by the catalogue authors for this designation were different from that of the military cartographers. This dramatized the need for field evaluation of the validity of the military designated sites.

At this stage of the project we estimated that the corpus of churches built in the Sorian region after the Reconquest was at least 200 buildings. This number would be revised upon visual inspection, but given that the total area of the region to be mapped was only 144 square kilometers, this number represented a significantly denser pattern of building than suggested in the 2005 study. While not necessarily a critique of Abel's study, this realization highlighted for us the necessity for acknowledging the parameters and filters imposed within the studies we consulted to compile our original corpus. Knowing the size of the corpus in relation to the area being mapped highlighted the necessity for locational accuracy and impacted our decisions as to

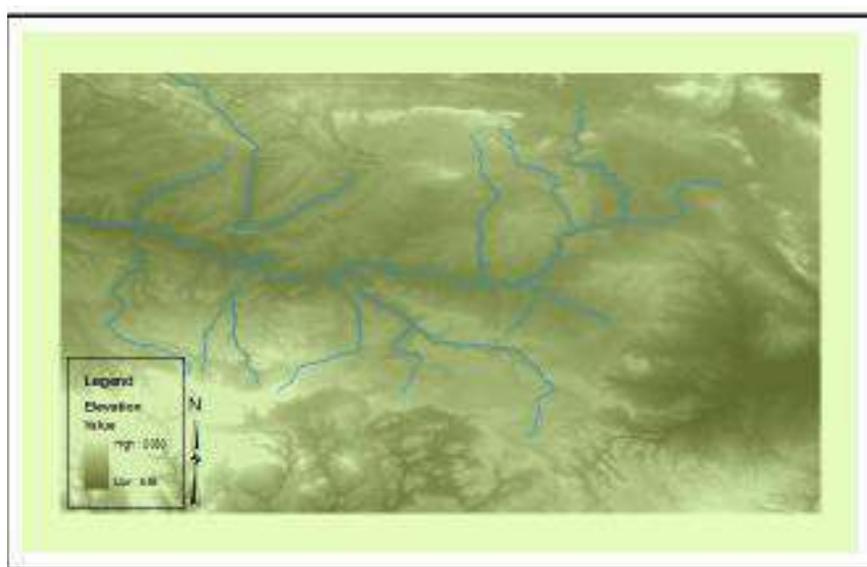


Figure 3, Baseline GIS Map of Soria region

what type of tools we would use to acquire and store our field data. Following O’Keeffe’s suggestion, it was clear that the use of technology—specifically a Geographic Positioning System (GPS), a hardware instrument used by many geography field personnel, would facilitate a more detailed accounting of what was going to be a large quantity and variety of data. With the GPS we could create our own base-line project map that would correspond to the area defined by our military maps. **(fig. 3)** At each site we visited, we would use a hand-held, satellite-driven GPS unit to triangulate the church’s exact position and assign it a geographic coordinate. The map created by the accumulation of these individual coordinates would serve as the base for the accurate recording of the data associated with each church. **(fig. 4)** In essence, this technology allowed the map to function as our data organizer.

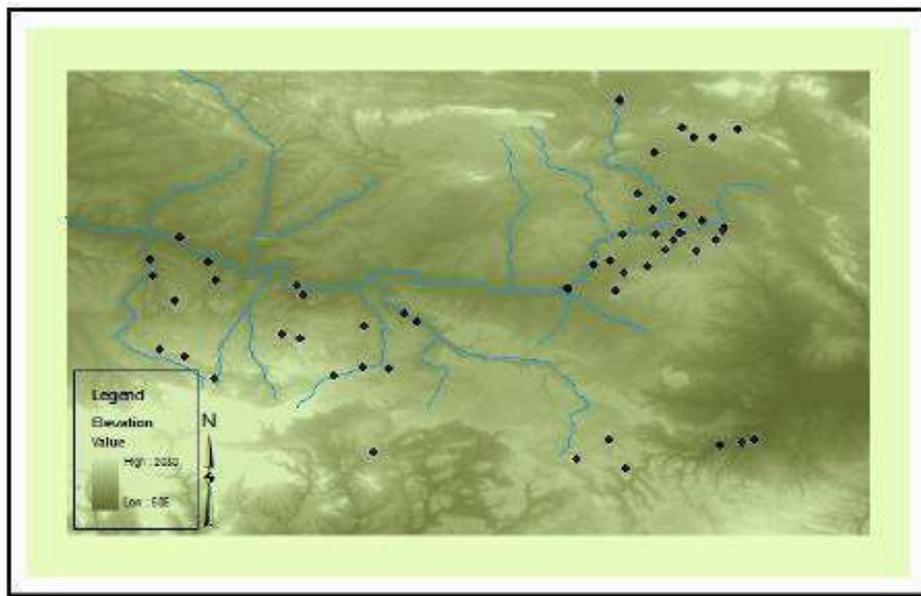


Figure 4, GIS map, all churches surveyed in 2008 field season

One of the advantages of using a GPS is that software programs, such as ArcPad, can be downloaded and used on its system. ArcPad is a mobile Geographic Information System (GIS)

software program designed for this type of field mapping application.<sup>21</sup> It provides field-based personnel with the ability to capture and analyze geographically-based data through the GPS generated map. For our project it allowed us to automatically link the variety of information we gathered and compiled as database categories to each GPS generated point on our map. Our initial categories of data were: elevation, church orientation, portal orientation, church type (monastic affiliation), portal view/sightline, apse configuration, and church size. (The length and width were measured on site, but were catalogued as small, medium, or large.) In the field, trudging through the weeds and up the hills, under the Spanish sun to closely inspect each church, we recorded these details based on measurements, calculations, and personal observation. Each night the data from our field notes was manually entered into the ArcPad. Later, when we opened the GPS map of churches in ArcPad, a click of the mouse on any given point would enable us to view all of the collected data for that particular church.

The real advantage of the ArcPad program lies in its facilitation of data analysis. Once all the fields of data have been filled, this program will sort, filter and display this data in relation to the GPS generated map. When queried for a particular set of data, the program will produce a map indicating only those sites which meet the criteria of the parameters defined in the question. For example, if asked, it will produce a map that indicates only those sites which are above a particular elevation, south of the Duero river, are small in size, have a round apse, and a southern portal with no tympanum, filtering out all other data. **(fig. 5)** This geographical display has interesting and important possibilities for the visually oriented art historian. It allows us to visualize quantifiable information in terms of its spatial relationship to the geographical locale.

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<sup>21</sup> For a brief introduction to GIS, see Michael Batty, "Using Geographical Information Systems," in *Key Methods in Geography*, N. Clifford and G. Valentine, eds. (London, 2005), 409-425.

One of the most difficult obstacles overcome in our multidisciplinary project was resolving our different epistemologies. Working with a geographer and this type of field equipment required specific, concise consideration of different types of data as categorizing and defining types of information is essential for the precise display and analysis of the data gathered. From the geographer's point of view, the criteria being used to categorize visual

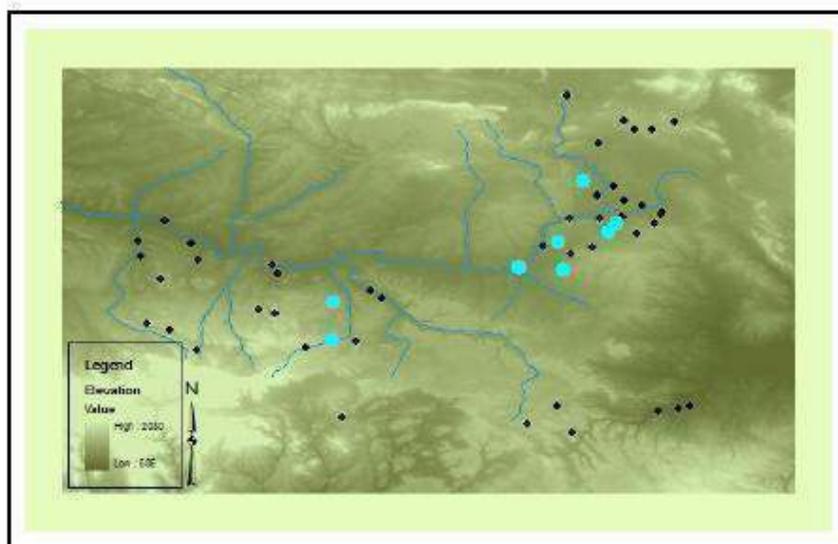


Figure 5, GIS map indicating all churches south of the Duero that are small in size, with a southern portal, no tympanum and a round apse

observations of items listed under the heading “style” were too vague. To the art historian’s mindset, setting the fields of data so precisely did not allow for the nuanced observations necessary to record the innovative solutions to the architectural remodeling and expansion, which were more often the rule than the exception in medieval buildings. In fact we found very few building that had not been altered over the centuries. In the end, we compromised by limiting the “style” categories in order to maintain consistency in our notes for the database construction and implementation, even when the data set seemed artificial. The compromise was justified with the addition of two supplementary sources of data. The first of these was the compiling of an extensive photographic record of each building. Conveniently, these digital

photographs were linked by way of the ArcPad program to the points on the electronic map, and thus could be easily accessible when evaluating the field data. In addition to these photographs, we also drew a footprint plan of each church that, while not a measured and surveyed plan, did serve to indicate significant and relevant details not captured in the data collection recorded in the field notes. (fig. 6) (See also figures 7, and 8A, 8B) These drawings were scanned and linked in the same manner as the photographs so that all forms of data and observations were stored in a single file, accessed through the point on the map.

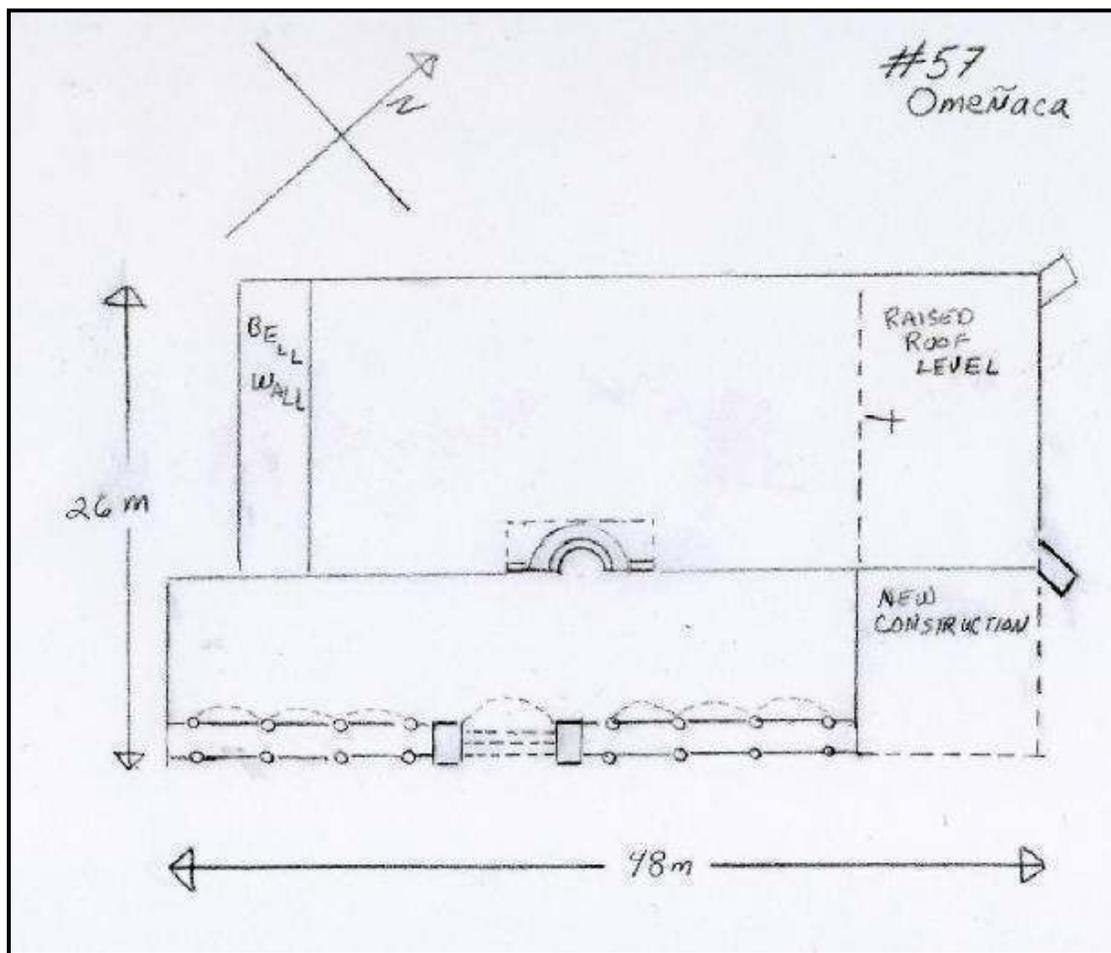


Figure 6, Omeñaca, field footprint drawing

Once these issues in data representation were resolved, the program in the field was quite efficient. At each church, the geographer of our team would establish with a compass the

cardinal orientation of the building. The GPS unit was then positioned at the northwest corner of the building to wait for the requisite satellites to generate the site's geographic coordinates.

Meanwhile, the length and width of the church were measured, while Dr. Abel drew the footprint plan of the church. The art historian, with her list of set data categories, would carefully observe and record these and any other architectural details, making note of anomalies. Finally all three members of the team would contribute to the observation of the surrounding landscape — both the built and the natural features — paying particular attention to the sightlines visible from the façade and the portal, as well as any distinctive topographical features such as exposed bedrock, rocky outcroppings, stream beds, or navigational patterns<sup>22</sup> which might have influenced the church's location or relation to other structures.

In this first phase of our field cataloging, we divided the Soria region into nine areas relative to the sections defined by the nine military maps needed to cover the region. Knowing that we did not have time to visit every church on the list in this first field season, we surveyed a selection from each area in order to achieve at least a thin coverage of the entire region. At the end of 10 days we had recorded a total of 58 churches or approximately 29% of the churches on our list. The remainder of the churches will be surveyed and the data bank completed in a second field season.

We can report some preliminary statistical conclusions that begin to answer some of our initial questions. As expected for the era, but differing from the objects of Abel's study, all but four of the 58 churches observed were oriented with their apses towards the east. The four that were not oriented to the east, were off axis by 45 degrees, 3 with their apses facing southeast and

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<sup>22</sup> For the study and analysis of ancient roads and their importance to trade and travel, see B. P. Hindle, *Medieval Roads*, (London, 1982); O. R. Constable, *Trade and Traders in Muslim Spain: The Commercial Realignment of the Iberian Peninsula, 900-1500*, (Cambridge, 1994); and T. Glick, Chapter 3, "Urbanization and Commerce," *Islamic and Christian Spain in the Early Middle Ages*, (Princeton, 1979), 110-134.

one facing northeast. Most telling for our question of portal orientation in relation to the Duero River was that the majority (52) of the churches oriented to the east had southern lateral portals regardless of whether they were located to the north or to the south of the river. Intriguingly, only six churches had both northern and southern lateral portals.<sup>23</sup> Of these, three were the churches that were off-axis. We found only one church with what appeared to be a “western” portal, but this was also one of the churches that were oriented 45 degrees off-axis, actually making this a southwestern door. Thirty-five, or 60% of the churches had polygonal apses; while the other twenty-three of them were semi-circular; and these were distributed on both sides of the Duero. All 58 churches had a bell wall or bell tower.<sup>24</sup> All but five of these were located on the western end of the church regardless of their apse configuration. The remaining five were placed at the crossing or at the north side of the crossing. This anomaly bore no relation to the true cardinal orientation of the building. Twenty-six, or 45% of the churches had portals that were ornamented with an original set of archivolt. (**fig. 7**)

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<sup>23</sup> Bango Torviso, “Atrio y pórtico en el románico español: Concepto y finalidad cívico-litúrgica,” *Boletín del Seminario de Arte y Arqueología*, 40-41, (Universidad de Valladolid, 1975), 186 stated that the village people would have entered the church by way of either the north or south lateral portal, depending on which side of the church would have been closest to the road leading to the church.

<sup>24</sup> A western bell-tower wall is called an *espadaña*. This wall is solid at the ground level, but rises well above the roof of the nave, where it is generally pedimental in shape and is pierced by two or three arched niches designed for the hanging of bells. The ropes for ringing these bells would hang into the interior of the church.



Figure 7, Omeñaca, projecting portal with archivolts

Twenty-one or 36% of the churches had a small porch or full *portada* over this portal.<sup>25</sup> (figs.

**8A, 8B)** Forty-nine of the fifty-eight churches had elements of their construction that had clearly

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<sup>25</sup> For a broader discussion of Iberian porches, see Bango Torviso, “Atrio y pórtico,” 175-88; and I. Gonzalo Bango Torviso, “El espacio para enterramientos privilegiados en la arquitectura medieval española,” *Anuario del Departamento de Historia y Teoría del Arte*, 4, (Universidad Autónoma de Madrid, 1992), 93-132. Bango Torviso suggested that the zone in front of and next to the lateral portal was privileged and could be used for a variety of functions to including liturgical celebrations, penitential acts, reunions of the laity, and especially the internment of socially privileged personages.



Figure 8A, Omeñaca, portada

been remodeled between the time of their foundation and the early modern period, as evidenced by the addition of Gothic sculptural elements or visible changes in the building materials building configuration. **(figs. 9A, 9B, 9C, 9D)** The statistical analysis of this sort of data gives us a certain understanding, but it is the visual display of this material on a map that for our



Figure 8B, Omeñaca, portada interior

purposes makes its compilation interesting. We have just begun to explore the results that are possible when the other fields of data, such as elevation or relation to topographical features are added into the analytical equation. Full results will come only after all the churches have been surveyed.

The question, of course, is what does this data tell us; what can be done with our databank in its present state and when it is truly complete? While these are questions yet to be answered, what we can say is that our cross-disciplinary affiliation has opened a new avenue for



Figure 9A, San Bartome, Viane de Duero, added bell tower



Figure 9B, Mountjo de Tiermes, reconfigured porch



Figure 9C, Morcuera, various building materials



Figure 9D, Fuensauco, three building phases and fortification

the exploration and analysis of this network of churches. Significantly different from the focused analysis of the most interesting churches of the region, as is typical of art historical materials we consulted to compile our original list of churches, this more exhaustive type of examination signals where the more singularly focused analysis is warranted and serves to clarify which questions are relevant to ask. Conversely, it also highlights areas of evenly distributed consistency that suggest a different set of conclusions than one might come to with the analysis of only a few examples. The most relevant conclusion is that the availability of the detail provided by a visually oriented data bank does indeed “change the complexion of the analysis.”<sup>26</sup> O’Keeffe warned that “aesthetic and experiential engagements with buildings as we understand them today can broadly be regarded as ‘cultural,’ and the difficulty of measuring these cultural qualities in an objective scientific way has significantly reduced their value in the minds of medieval architectural historians.”<sup>27</sup> We feel that this exercise addresses that dilemma. We found that the inclusion of the buildings traditionally seen as art-historically less interesting along side those previously documented for their unique spaces or elaborate ornamentation helped us check the subjectivity of our personal observations and provided a balance that enhanced the quantitative value of these experiential and aesthetic impressions. We feel that this exercise in data collection at the local level has important implications for future studies in the region. In the end, our work in Spain merged the methods and tools of three academic fields – geography, art history, and archaeology – providing data that will be readily available to be expanded upon or mined for anomalies.

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<sup>26</sup> O’Keeffe, 82.

<sup>27</sup> Ibid.