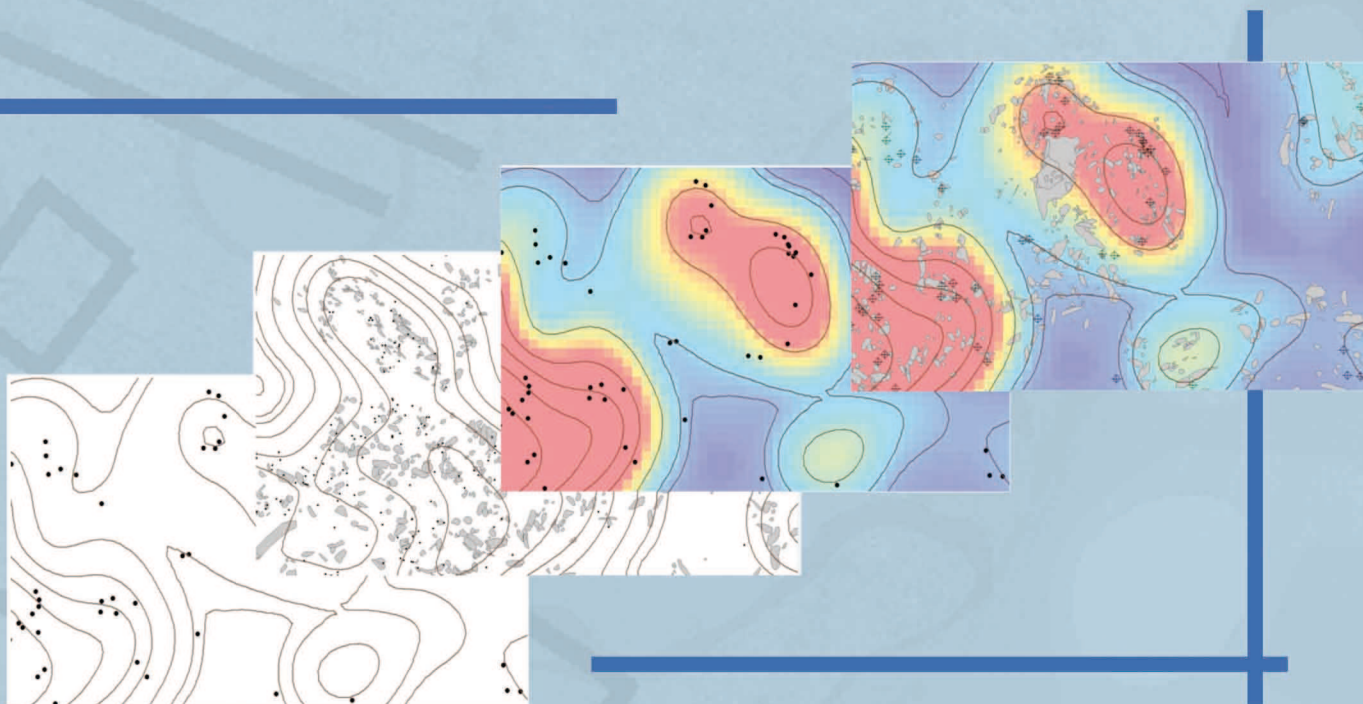


# DEBATING SPATIAL ARCHAEOLOGY

Proceedings of the International Workshop  
on Landscape and Spatial Analysis in Archaeology  
Santander, June 8th – 9th, 2012



Edited by  
**Alejandro García, Jesús García,  
Alfredo Maximiano, Joseba Ríos-Garaizar**

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Alejandro García, Jesús García, Alfredo Maximiano,  
Joseba Ríos-Garaizar (Eds.)



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## **Rethinking the Boundaries of Baetica: a Historiographical Criticism from Spatial Display**

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### **Abstract**

From a review of the political geography of Hispania Vltior Baetica, we present some methodological principles to propose the geographical demarcation of provincial boundaries. Once the different historical proposals had been mapped, we proposed a buffer as an analysis tool. From the resulting proposal we have developed several study cases relating to the road network, the citizen territories and the provincial limes. The combination of various historical sources, the historiography and GIS applications proves its worth in the process of rethinking the provincial boundaries.

**Keywords:** Baetica, fines, GIS, historiography, methodology.

### **1. Fines Baeticae: historical issues and objectives.**

The construction of the Roman Empire as a political structure entailed the establishment of territorial constituencies – provinciae - whose exact definition is still discussed by the historiography. During the conquest of Hispania, with a broad front of territorial expansion in the NE-SW diagonal and advancing roughly towards the NW, there was no historical definition of the perception of provincial spaces delimited with appropriate boundaries – fines; this became clearer as areas of jurisdictional competence of magistrates appointed by the Roman

Senate as political and military leaders of the conquered territories that were defined (Nicolet, 1978; Roldán, 2001).

A reading of the geographical description of Pliny's *Naturalis Historia* shows the diversity of elements that could be considered and conjugated to delimit a provincial unit: orographic entities, ethnic ensembles (Cruz, 2009), varied symbolic markers, etc. So, to revise the historiographical proposals and to define the boundary of Baetica is necessarily a flexible issue, in terms of chronological delimitation and historic perception.

Obtaining the geography of ancient social formations is an aspiration of research that is becoming feasible through the combined development of ICT and GIS. Most of the proposals that are nowadays study references were derived from the limitations of cartographic resources in the past. Today we can review these proposals from an exceptional geographic perception, comparing them with a geographical logic, and also with the use of historically and archaeologically well geo-referenced elements, from literary and epigraphic sources and from the cultural perspective that generated this political and jurisdictional space management.

This is the range and challenge of our research. We have designed a methodology that uses GIS location of urban civic entities bordering the provinces Baetica, Lusitania and Tarraconensis in order to define the buffer in which fines should be established.

The ultimate goal of our work is the establishment of a basis for mapping a geography of Baetica, beginning with a political geography that reasonably defines the provincial frame and the borders of the *conuenti iuridici*, and the precise location of the urban centres of civic communities. It would be desirable furthermore to make a hypothetical proposal on the territorial reach of the many civic organizations of Baetica. But this political geography is a puzzle that requires the correct placement of the pieces, in order to be completely recomposed. The overall objective of our researches about Baetica is to achieve quantitative data with spatial projection of available geographical information (surface areas, average altitude, comparative rainfall...), population information (population densities, urban settlement distribution...) and onomastic information (family distribution, community relations); also information about the various natural resources (agricultural, mining, forestry...) and their potential exploitation (crafting, processing, distribution...), and other strategic resources from the perspective of ancient communities (water control, communications, defence...). The importance of the proposed delimitation is that, especially in the context of a reasoned historical hypothesis, it will further the approach to a quantitative history.

## 2. Historiographical review of Baetican delimitation.

# Historiographical Outline

Albertini, E. (1923).	<ul style="list-style-type: none"> <li>- Based on Pliny descriptions.</li> <li>- <i>Flumen Anas</i> as border.</li> <li>- Exceptions on <i>Metellinum</i>, <i>Emerita Augusta</i> and <i>Serpa</i>.</li> </ul>
Thouvenot, R. (1940).	<ul style="list-style-type: none"> <li>- Based on Pliny.</li> <li>- <i>Flumen Anas</i> as border.</li> <li>- Exceptions on <i>Metellinum</i>, <i>Emerita Augusta</i> and <i>Serpa</i>.</li> <li>- Increased presence of delimitation by geographical factors.</li> <li>- Mention of the "<i>provinciae Baeticae Maurorum</i>" (in the of North Africa).</li> </ul>
García Iglesias, L. (1972).	<ul style="list-style-type: none"> <li>- Focused on the Baetican – Lusitanian border.</li> <li>- <i>Flumen Anas</i> <b>not</b> as border.</li> <li>- Territories of border cities as delimiters.</li> </ul>
Marín, N. and Prieto, A. (1972).	<ul style="list-style-type: none"> <li>- More attention given to the indigenous component.</li> <li>- Less specific demarcation.</li> <li>- Pointed out errors in Albertini and Thouvenot.</li> </ul>
Alarcão, J. (1988).	<ul style="list-style-type: none"> <li>- Focused primarily on Western boundary.</li> <li>- <i>Flumen Anas</i> not as exact border.</li> </ul>
Cortijo Cerezo, M.L. (1993).	<ul style="list-style-type: none"> <li>- Most detailed, accurate and substantiated research.</li> <li>- Deep historiographical study (from Albertini's to latest researches).</li> <li>- Deep geographical analysis.</li> <li>- Study of the cases of <i>Baria</i>, <i>Lacimurga</i>, <i>Metellinum</i>, <i>Emerita Augusta</i>, <i>Zihil</i>.</li> </ul>
Corrales Aguilar, P. (1997).	<ul style="list-style-type: none"> <li>- Most based on geographical factors.</li> <li>- Focused on the Eastern boundary.</li> <li>- Largely discarded the indigenous component.</li> </ul>

**Figure 1:** Historiographical outline.

The most and best studied territorial limit of all the provinces that formed Hispania was that of Hispania Ulterior Baetica. Although by the Nineteenth Century, cartographers, geographers and travellers were concerned with showing on the map the possible provincial divisions of Roman Hispania (as Sulzer et al., 1893), until the early Twentieth Century we found no academic publications that attempt to capture its delimitation, as well as the various methods to define it.

For the delimitation of these boundaries, researchers have used different criteria. The relevance of these has fluctuated over the years. Thus, we can see how the first authors based their researches on the chorographia provided by the classical authors, mainly Pliny and Strabo (Albertini, 1923; Thouvenot, 1940). These works provide not only distances offered by these authors, but also valuable descriptions of landscapes, geographic features, information about the pre-Roman communities and their territorial distribution, etc.

Numerous authors have based their proposals on direct analysis of geographical features such as mountain ranges and rivers of different magnitudes, among other less obvious features. The Roman road network - and related objects - has also been used to characterize the provincial



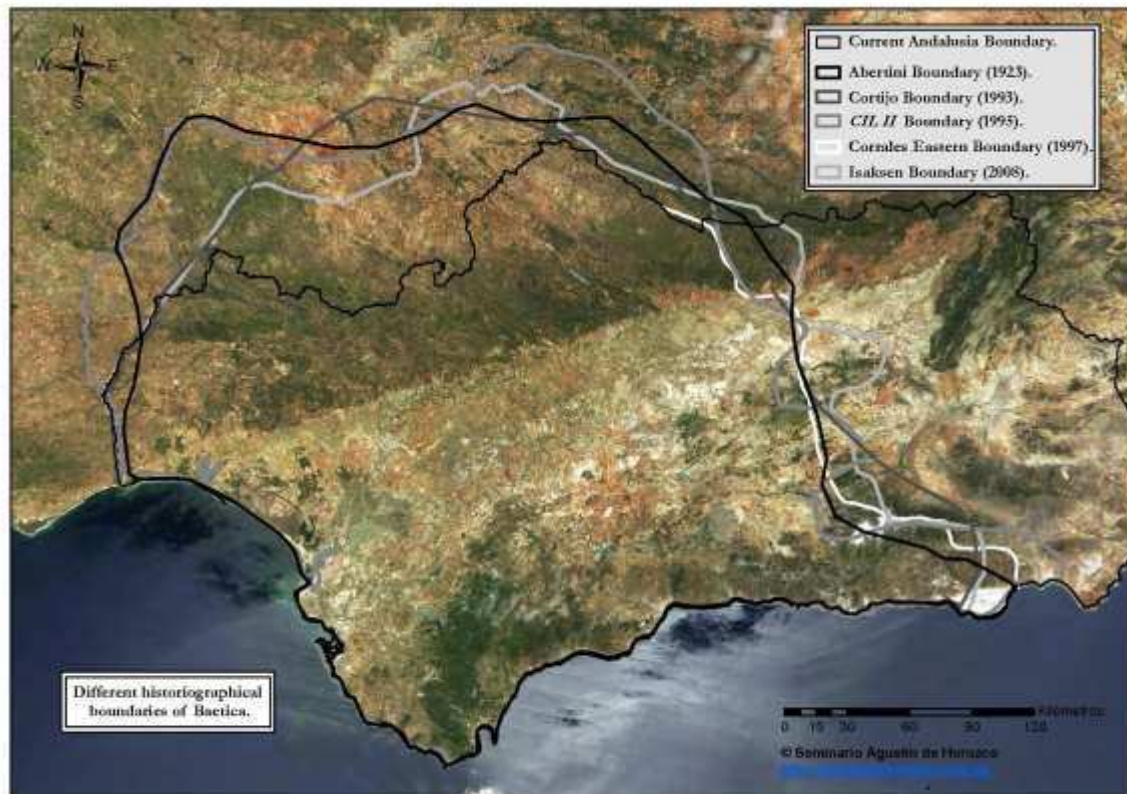
boundaries. For example, in a critique of the Antonine Itinerary, pathways numbering was used to include them within the same province, (Hurtado, 1964, 102-108). Other authors studied pathways quality to try to establish the point where the responsibility for conservation passed from the hands of one provincial authority to another (Sillières, 1982). It is also stated that Rome based the spatial planning of Baetica, at least in the beginning, on pre-Roman divisions. This has led to a deeper study of the archaeological records, especially epigraphic, that could define somehow those old boundaries.

The issue of provincial boundaries of Baetica has turned around three points of interest: the river Anas as the border limit; the eastern border; and the impact of Augustus' land policies. The historiography has widely discussed the use of flumen Anas as the province delimiter; some authors have suggested the correspondence between the river and the border (Albertini, 1923; Thouvenot 1940; Alarcão, 1988), others came even to deny this possibility (García Iglesias, 1972). Concerning the delimitation of the eastern border, researchers have mainly focused on the geographical and urban elements (Cortijo, 1993), and have resorted to the indigenous factor to a lesser extent (Marín & Prieto, 1974). Others dismiss this factor, indicating that it could be applied only to the early Romanization period, without affecting the firmer establishment of the borders after Augustus (Corrales, 1997). Finally, the inclusion or exclusion of certain municipal territoria by Augustus and their interaction with the boundary has been readily taken into account in the historiography.

### **3. Methodological proposal.**

The methodology we propose for locating the provincial boundaries is based on applying methods of Geographic Information Technologies to existing historical information. We can clarify the hypothesis and provide new approaches to the historiographical issues. The main proposed processes are:

- Geo-referencing of different historiographical proposals for the Baetican fines in a GIS (see Figure 2), delimiting an area of influence that will serve for further spatial analysis, indicating a high probability area for the existence of the ancient boundary. The buffer generated includes, with a double delineation, maximum and minimum extensions of the border on each stretch of the path, defining the frame in which the search for items indicating the existence of provincial boundaries will proceed.



**Figure 2:** Historiographical proposals for Baetican boundaries.

- Identification and geo-referencing of distinctive elements, boundary markers in Antiquity, within the Baetican territory:
  - a. The physical geography, mainly relevant landforms, which define a landmark in the landscape and the hydrography.
  - b. The location of civic communities and the interaction of their hypothetical territoria among themselves and with provincial boundaries.
  - c. The road sources, mainly itinerary information and milestones. These sources provide us with information on the location of unique elements that set limits, whether these were monumental landmarks, mansiones or stationes located at the intersection of the Roman roads and the hypothetical boundaries.
  - d. The monumental landmarks, elements with high significance and uniqueness in the creation of the province.

### **3.1 Analysis of unique cases.**

We present some application examples of the designed methodology for the study of provincial boundaries:

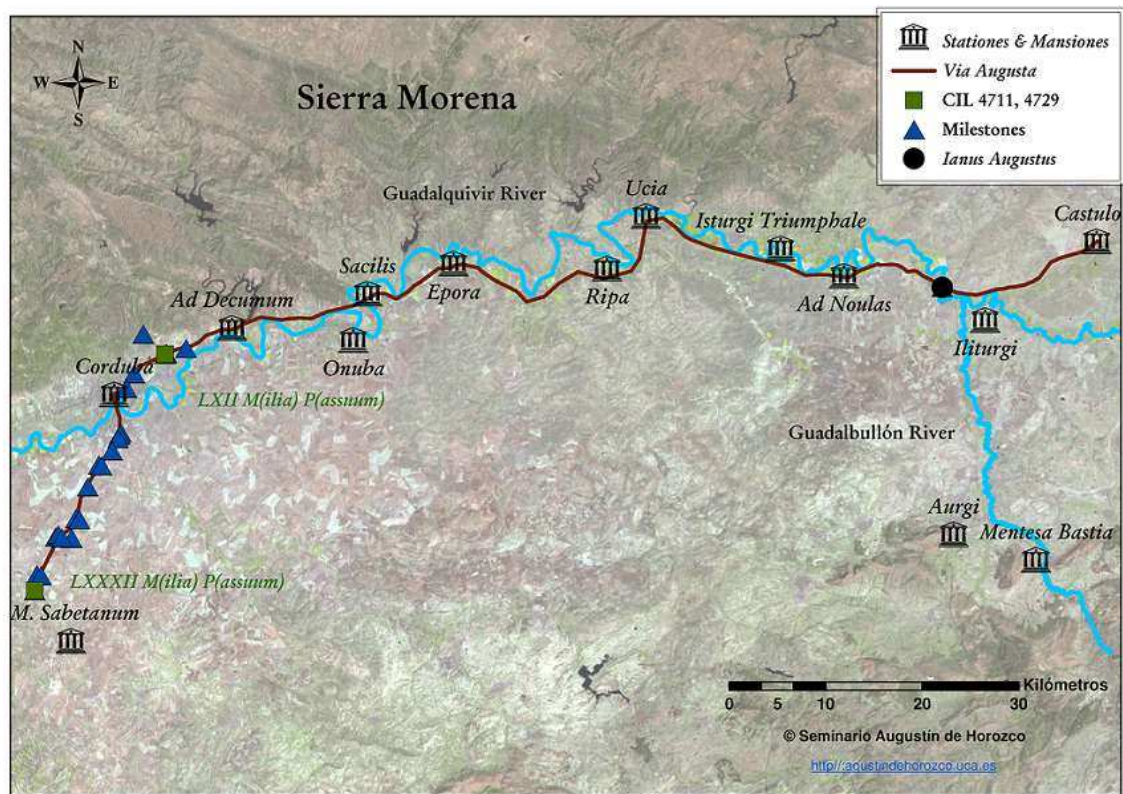
#### **3.1.1. Road landmarks.**

The border of Baetica served as a starting point for demarcation of Via Augusta inside the province. The Arch of Ianus Augustus, caput viae located at the intersection of Via Augusta, the river Baetis and the provincial border, is known thanks to eleven milestones from different periods that convey different formulas: a Baete et Iano Augusto, ab Iano qui est ad Baetem, ab arcu unde incipit Baetica (CIL II 4701, 4703, 4704, 4707-4709, 4711, 4712, 4715-4717, 4721, 4722; Sillières 1981, 255-261).

P. Sillières (1990, 795-798) places this arch on a bridge over the river Baetis, near the confluence with river Guadalbullón, from detection on aerial photography and topographic mapping of the remains of Via Augusta, the contextualization of the eleven aforementioned milestones and the calculation of the distances provided.

Our review using GIS methodology includes the location of the milestones as mentioned by their discoverers and investigators. In the same way we have geo-referenced stationes and mansiones from itinerary sources. Subsequently, we created a polyline shape representing Via Augusta, outlined from previous studies, and proceeded to search for evidence in the field through remote sensing techniques using orthophotography. We have also taken into account the toponymy relatable to ancient bridges and roads on topographic maps and historical cartography.

The distance provided by one of the geo-referenced milestones (CIL 4715) is LXXXII M(ilia) P(assuum) towards Ianus Augustus. This landmark is located 16 miles from Corduba and approximately 2 kilometres from the current village of La Quintana. The aforementioned distance is equal to a total of 121500 meters. For this, we used the polemic equivalence of Radke (1971, col. 1447-1448), the validity of which was tested by Sillières (1990, 60) for Via Augusta. The same procedure was applied to the milestone located in the property of Rabanales (CIL 4729), which indicates a distance of LXII milia passuum towards Ianus Augustus, that is 91.5 kilometres. Contrasting this distance in GIS, we obtain a score of 91904 metres. From these calculations we have created a 1000 metre buffer from the caput viae, for the purpose of prospecting the land and finding evidence of the monumental arch of Iano Augustus.



**Figure 3:** Map of Via Augusta mansions, stations and milestones.

On the western boundary of Baetica we observe another case of analysis whose study can be performed using our methodology. This is the case of Ad Fines, a mansio shown in the itineraries and located on the provincial border. Applying the method of recomposing the road on which it is located, and the conversion and calculation of the distances provided by the sources, we can establish an area of high probability of existence of the border.

### 3.1.2. Territoria

As we already mentioned, the spatial constitution of Baetica had to respond to several factors, recomposition of which leads to the very boundaries of the Roman province. Among these factors Augustus encountered the historical rights of pre-existing communities and the needs and commitments acquired with the colonies installed in Baetica and its immediate surroundings. At the same time, this colonial settlement was subject to a special process that begins in 45 BC (D.C., XLIII, 39, 4-5), after the Caesarean intervention against Pompeians, and culminated with the second trip of Augustus to Hispania, between 16 and 13 BC (D.C., LIV, 23, 7), when the province was probably constituted (D.C., LIII, 12, 4).

As we pointed out for the road network, we suggest territorial models of interaction of the colonies with the Baetican boundary (excepting Baria):

1. Territories delimiting the Baetican border from the outside: Acci.
2. Territories delimiting the Baetican border from the inside: Tucci.
3. Territories that exceed the Baetican boundary without affecting it: Emerita, Metellinum and Pax Iulia.
4. Territories which discontinuity affects the Baetican boundary: Ucubi.
5. Territories which make the Baetican boundary discontinuous: Zilil y Baria.

These cases show both different and shared characteristics. The difference between the outer and inner boundary responds to different conditions of the territoria, depending on whether it is included in a senatorial province (Baetica) or an imperial province (Citerior Tarraconensis). The territories could be continuous or discontinuous, establishing territorial 'islands'. These 'islands', single or multiple, could be inside, outside or over the boundaries of the provinces to which the owning cities belonged. Political regulation of this diversity is an issue to consider, but its treatment exceeds the scope of this work. For the hypothetical reconstruction of the territories which form the provincial boundary, we will use a set of strategies adapted to the available documentation.

In the case of Acci, a first approximation locates nearby towns according to the mapping offered by Sillières (1990) and, from various regional studies, other archaeological sites. Usually there has been interest shown in the dispersion of epigraphs indicating data such as origo or tribus as criteria for exclusion or inclusion of a specific territory near the approximate location of the discovery. For Acci we take into account the presence of one of the so-called singular tribus, the Pupinia. However, the scarcity of epigraphs makes their dispersion lack relevance for this study. The agricultural settlements do not allow the creation of a settlement pattern concerning colonization of Acci. The geographical analysis of their locations could provide some meaningful information in the future.

For the moment, facing a first cartographic representation of the research, it has been chosen to highlight a number of urban entities, mansiones and thermae. Surrounding towns are taken as delimiters of the space of Acci, with some reservations about its political conditions and more or less eccentric positions within their own territories. Mansiones and thermae are aggregation points relating to communication routes, and constitute space organizing elements. The road network is an important element in the compression of space, and a fundamental objective for

the advancement of the research. The mining sites are also landmarks, understood from a double geological and archaeological point. They are interesting because traditionally there have been questions regarding the role of mining in the constitution of territories, especially for colonies, and as a hypothetical condition for the exclusion of communities in the creation of the Baetica province. The reactivation of mining operations throughout history has often erased ancient traces, so the interpretation of this economic sector requires a special analysis. For that reason we initially chose to include proven Roman mining sites with others potentially exploited by them.

We also used the precise delineation of historical entities specific to the political geography. In the case of Acci it is the municipality and the tithe collectors of its diocese between 1750 and 1808 (Lara 2001, 76). In view of the absence of other previous constraints, we used this recent model, appealing to a certain geographic determinism and avoiding anachronisms. However, Acci already played a prominent religious role in Pagan and Christian Antiquity, with records of the existence of his bishopric at a late stage (González 2011, 321-327), when its territorial legacy still would not have undergone the medieval border modifications. Ecclesiastical properties and boundaries, beyond its own historical evolution, can syncretize and give continuity to various ancient territorial realities facing the succession of purely political formations.

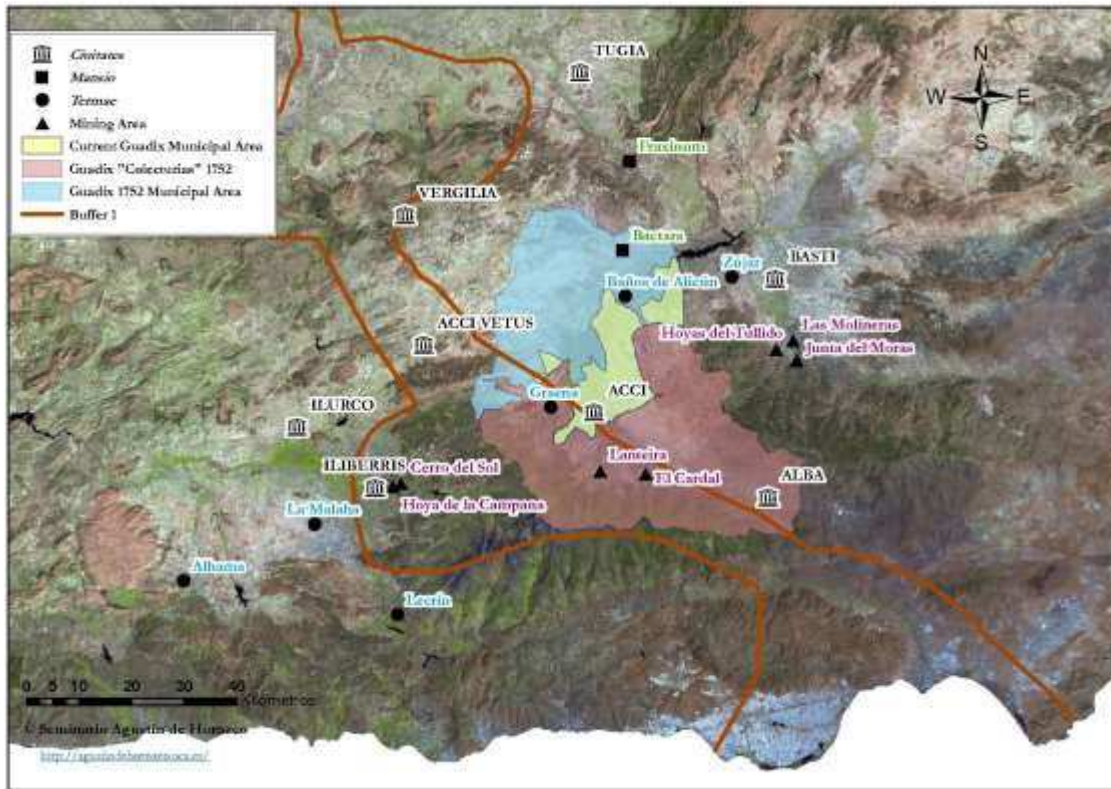
The resulting image is significant as it suggests that the installation of the colonia Iulia Gemella Acci, far from Acci Vetus, set a new power centre that divided a likely domain of Basti in the Hoyas de Guadix-Baza. In fact, the domain of the bishopric of Acci was restricted in modern times, when the hypothetical historical link with the environment of Acci Vetus did not exist, to the geographic unit of the Hoya de Baza and to the strategic corridor de Fiñana.

Limitation of indigenous hegemony and sustainability of the new foundation explain the inclusion of iron deposits in the area of influence of Peñón de Arruta and the surroundings of El Cardal. It also includes silver deposits at Lanteira (Minas del Marquesado). The former ones are attested from archaeology, the last one using toponymy (González 2011, 307). In support of the latter case, we should mention a pedestal dedicated to the goddess Isis (CILA IV 122; CIL II 3386 (p 952) = ILS 4422 = SIRIS 00761 = ILPGr 63 = HEp 5, 1995, 351) which attests to jewellery donation and a significant amount of silver, indirect testimony of the great fortunes that such mining exploitation would have generated.

Taking into account the certainties and uncertainties of the political environment and applying certain logical patterns in the appropriation of space by ancient communities, the Baetican boundary can be recomposed. Meanwhile, the application of techniques such as the historiographical buffer may represent valuable tools for reflection. Applied to the case of Acci,



it is observed overlaying the territory of Acci Vetus, whose territorial relationship with the colony, provincial affiliation and Baetican boundary effects may be rethought. It would also be interesting to explore the mining potentiality of delimited space by this historiographical buffer, under the criterion of the potential relationship with the colony. Ultimately, the determination of these issues will lead to a better definition of the Baetican boundary in this area.

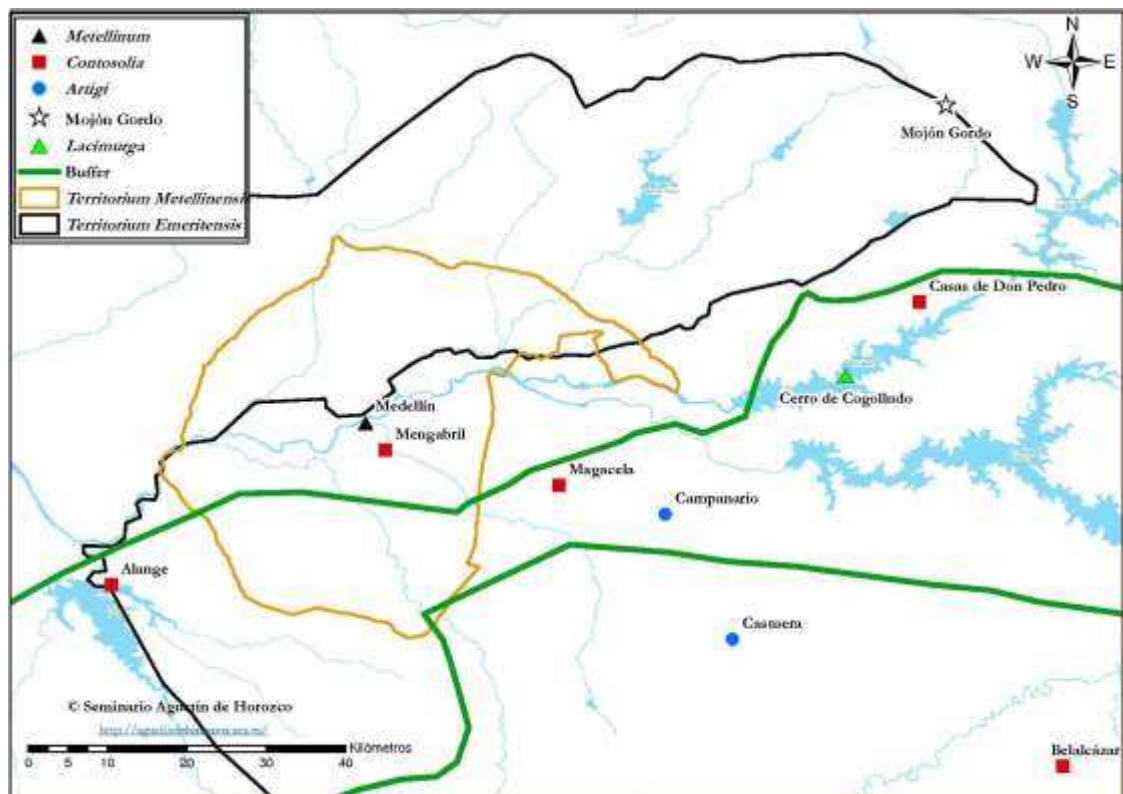


**Figure 4:** Elements to define the territorium of Acci.

When displaying the buffer and the the path of flumen Anas in relation to the most recent proposals about the territoria of Emerita (Cordero 2010) and Metellinum (Haba 1998), there is an evident inaccuracy in the traditional mapping, and potential historic and geographic disputes in the interpretation of provincial boundary. If we take the previous elements, and add the hydrographic network and a set of milestones and civic entities, we obtain a model on which other issues could be raised. First, the so-called 'trifinium of Hispanic provinces'. We can note the accurate location of certain sites - Metellinum and Lacimurga - against the multiplicity of proposals given for others - Contosolia and Artigi. This polarity is also manifested in the assignment of communities to one province or another (Cortijo 1993, 68-71).

Another issue to discuss is the location of the praefectura of Ucubi. We can note the difficulty of establishing a continuous and consistent distribution of the territoria of Lacimurga and

Emerita to the environment of Mojón Gordo, especially if we accept the representation of the territorium of Emerita and the location of Contosolia in Casas de Don Pedro, the more likely according to M. L. Cortijo Cerezo (1993, 69). However, we might suppose an extension of the territorium of Lacimurga between the rivers Guadiana and Gargáligas which border the territorium of Contosolia, consequently projected to the other side of the Guadiana. Thus, the territory of Lacimurga would occupy a southeast quadrant over Mojón Gordo, the praefectura of Ucubi would take the northeast quadrant and the territorium of Emerita would spread to the west. Here is another hypothetical framework from which to rethink the layout of Baetican boundary.



**Figure 5:** Elements to define the praefectura of Ucubi and triffinium of Hispanic provinces.

#### 4. Conclusions.

The provincial border is the sum of the borders of certain civic communities, a dynamic reality dependent on the imperial policies and the heredities and local ambitions. The challenge of our project requires a rigorous representation and interpretation of the data. The creation of a GIS cartography base will offer a powerful tool for reflection on the Historical Geography.

With this methodology we check the accuracy of the distances provided by epigraphic sources and the suitability of the application of GIS in spatial analysis in studies of Ancient History. So,



with this study we present a methodological approach for the recomposition of the old Roman borders applicable not only to the boundaries of Hispania Ulterior Baetica, but also to the whole Roman ambit. A task remaining for further works would be the realization of our own proposal of delimitation of Baetica.

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