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Territorial and Mapping Hypothesis. Application of Portulano Method for the case Chascomús and Lezama, Buenos Aires, Argentina.

Prefeasibility study of a possible division of administrative area

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Introduction

In this paper we present an application of the *Portulano* cartographic method (Bozzano, 2009) to the pre-feasibility study and territorial hypothesis of the partition of a district in the province of Buenos Aires. This method constitutes one of the axes of research and action of the TAG-UNLP team, initial core belonging to the Latin American Net, www.territoriosposibles.org. The case of study corresponds to a broader research project¹ done in the rural pampas field in two towns of the district of Chascomús in the province of Buenos Aires: Chascomús and Lezama. Chascomús is municipal head of the district of the same name while Manuel J. Cobo – Estación Lezama is a town that currently has a municipal office. This district is at 115 km. at the south-south east from the city of Buenos Aires within what is known as Salado Depression or Depressed pampa.

This interdisciplinary investigation had the purpose of studying the pre-feasibility of a possible territorial partition of the district of Chascomús in two new districts: Chascomús and Lezama. The object of study-intervention is acknowledged as a multidimensional, dynamic and complex object, where socio-cultural, economic, political, territorial and environmental aspects must be taken into account. Therefore, the definition of territorial hypotheses for these places required the recognition of identity features and the precise identification of its boundaries, with multiple criteria of sustainability based on the above mentioned dimensions.

In the approach of this object, a series of events has been selected, based on the assumption that events change things, transform objects, giving new characteristics to them, suggesting a new history (Santos, 2000). On the other hand, as there is no event without a subject, the social actors whose actions have contributed to these historical-spatial processes have been identified in each case. Finally, the different style of government from the hierarchic control model, defined with the term *governance*, enables us to re think about the processes of territorial autonomy and co-construction in more participatory decisions and actions; as this notion is characterized by a higher degree of cooperation where the decision-taking process is the result of a very wide range of interrelations among the civil society, the market and the State (Karol, 2004).

When resuming the aim of this article, the application of the *Portulano* method to the territorial hypotheses of the partition of the district of Chascomús, we have started from the idea that map spatiality helps understanding the places, the processes that come into play in that territory and their issues. However, the question arises as to what kind of cartography is suitable for the solution of that problem, what utility the cartographic tool entails, how maps should be conceived, which limitations approaching a complex object may imply, taking into account that different dimensions come into play here: geographic, historical, cultural, administrative, election interests, among others.

¹ “TERRITORIAL HYPOTHESES FOR CHASCOMÚS AND LEZAMA. Assessment of pre-feasibility of a possible territorial partition of the district of Chascomús in two new Districts” (2006) STUDY. Participants: Prof. Dr. Horacio Bozzano (Director); Mgsc. Lic. Alejandro Jurado; Ing. Agr. Miguel Uranga; Lic. Laura Vaccari; Mgsc. Lic. Claudia Carut; Prof. Fabricio Gliemmo; Prof. Juan Pablo del Río; Mgsc. Lic. Graciela Mateo; Ing. Agr. Alberto Grau; Lic. Mariana Cavalieri; Mgsc. Lic. Mariela Iglesias; Téc. Inf. Amb. Paula Sangrá; Miss Anabel Mauri

The *Portulano* method

In this work the inventory, analysis, correlation and synthesis cartographies are articulated with the three moments of Jacques Bertin's graph (conceptual, technical or of processing and communication) and with the twelve operating stages of the cartographic process (Bozzano, 1991, 2009). The *Portulano* Method is complemented with other generic methods and tools used in different scientific disciplines. It is precisely the combination "topics / tools / investigation phases" that makes it possible to organize the proposal, transforming it into a method rather than into a tool (Bozzano: 2009).

Portulano constitutes itself as a cartographic method intended to be applied in interdisciplinary research projects in which it is worth working with maps, "...it is a proposal based on the inductive method that, starting from an inventory and an analysis of spatializable aspects of reality after consecutive correlations, manages to approach a synthesis with a greater degree of explicitness than at the beginning..." (Bozzano: 2009). This inductive perspective is complemented with other perspectives which attempt to blanket empiric and excessively inductive tendencies in the work of social, territorial and environmental investigations. In this way, maps are selected based on theoretical criteria more than on the availability of geo referential data or on empiric issues (Bozzano: 2009).

With reference to the issue raised here, in order to define a hypothesis of limit or territorial partition between two places, where the spatial component becomes significant, we resorted to the notion of *cora* more than to that of area of influence. This notion becomes useful so as to make these hypotheses operational since *coras* are small precise -not diffuse- territorial fields with common qualities, whatever the nature of the topic under analysis. In other words, *coras* are territorializations of specific events, phenomena and processes. In this sense, they do not have application by themselves separately; rather their superposition make the territorial analysis more complex, enabling the progress to more explanatory levels (Bozzano, 1996, 2006).

In this work we have defined three types of *coras* at the operational level: jurisdictional, functional and socio-cultural. The first type refers to the territorial boundary that indicates the jurisdiction of a department or institution. The second is defined by multiple interactions that the rural population frequently has with close towns, either for work, health, education or other reasons. The third is associated with the identity aspect, it refers to the sense of belonging; in this case it implies representing the area of influence of the survey rural neighbors' stance-taking in connection with Lezama autonomy.

From the inventory map to the synthesis map, matrix of analysis and hypotheses of limits

With the aim of specifying a possible limit for Lezama and its zone of influence certain *coras* were overlapped. Then *coras* of different weights were integrated into an adjusted matrix in order to determine the limits more precisely and exclude diffuse areas. And finally some alternative hypotheses of territorial partition between Chascomús and Lezama were analyzed. The methodological course taken here can be summarized in the following steps (some maps are shown by way of example):

[illegible]

3- Field-work preliminary map

Mapa de la zona de estudio en la ciudad de Castelli, mostrando establecimientos educativos, rutas, y límites de barrios. El mapa incluye una escala de 0 a 200 metros y una brújula. La leyenda indica:

- Establecimientos educativos: Representados por rectángulos verdes.
- Ruta de Misiones: Representada por una línea amarilla.
- Ruta de Triloma: Representada por una línea naranja.
- Ruta de Yabuy: Representada por una línea roja.
- Parqueamiento: Representado por rectángulos azules.
- Estabilidad de barrio: Representado por líneas de puntos.

Fuente: Dirección de Estadística y Censos, Provincia de Tucumán, 2010.

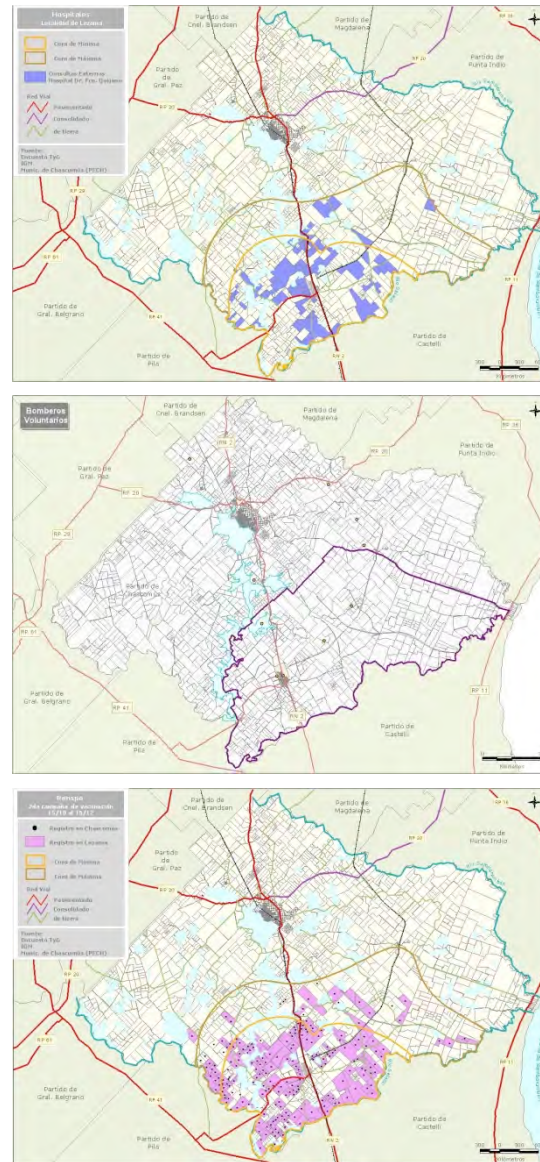
2

2 The consulted sources are listed below: 1) Strategic Plan of Chascomús, 2) Study of feasibility of Autonomy 1994-2004, District of Lezama. Permanent Pro-Autonomy Committee of Lezama and its zone of Influence; 3) Secretary of Planning and Development of the Municipality of Chascomús; 4) Rural Map S.A; 5) Interviews to referents and qualified informants, 6) Diverse public offices from the Municipal Office of Lezama

4- Analytical maps

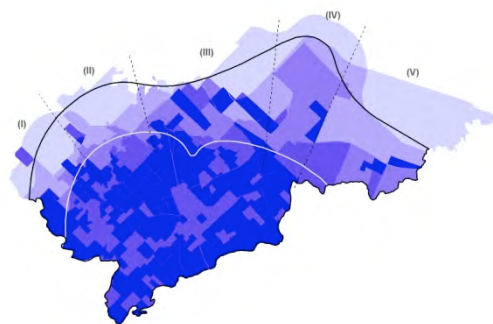
The making of *jurisdictional or institutional coras* was based on the making of 8 thematic maps: 1- Lezama Jurisdiction of the Vaccination for Foot-and-mouth Disease Plan; 2- Civil Registry Municipal Office; 3- Taxpayers registered in the Lezama Revenue office; 4- Rural School students' place of origin; 5- Volunteer Fire Jurisdiction; 6- Coverage area of rural roads dealt by the municipal office of Lezama; 7- Power supply union, public services, consumption and housing; and 8- Section of Lezama Police station. The definition of *real functional coras* was based on the making of 3 thematic maps: 1- "Dr. Francisco Quijano" Hospital, registry of outpatients clinic; 2- Vaccination schedule from the SENASA National Registry, farm producers and rural establishments that receive the vaccination service; and 3- Rural Schools, students' place of origin.

The configuration of the *survey functional coras* was based on the making of 2 thematic maps: 1- Survey respondents' daily purchases; and 2- Survey respondents' reference place of clinical services.



5- Correlation maps

The following step consisted of the correlation of each thematic map; that is, 3 correlation maps were created, one for each type of *cora*. The correlation levels were assessed according to the spatially overlapped variables.

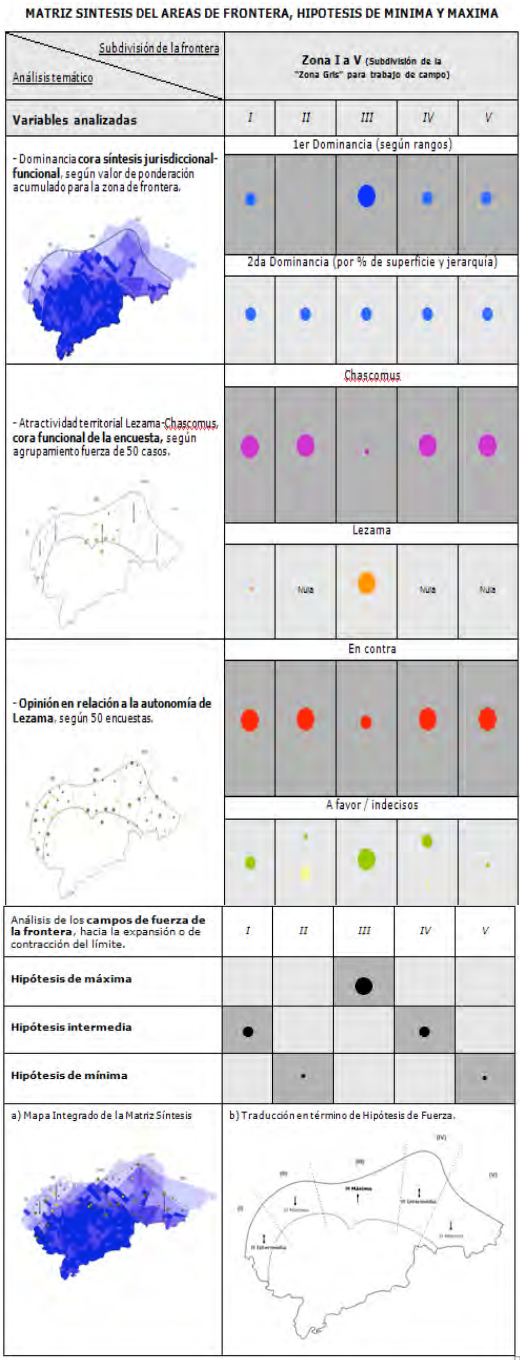
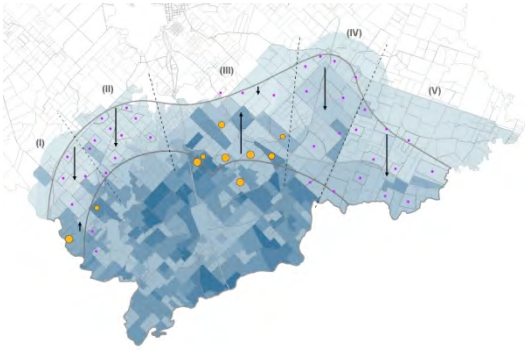


6- Synthesis maps

Finally, a synthesis map was made according to high or low correlation levels, based on the differential weighting of the different *coras*. As well as this, the emergent tendencies from surveys were mapped.³ As well as this, the emergent tendencies from surveys were mapped.

By way of conclusion, the analysis of *functions and rural services coverage* is integrated into a matrix with the results of surveys in terms of the *opinions regarding the autonomy of Lezama* in order to project some hypotheses or core ideas about the Lezama-Chascomús border. The matrix analysis aims at integration by means of a double-entry matrix (for spatial reasons the matrix is not presented in this work): in the direction of rows, the *jurisdictional-functional synthesis cora*, the *functional cora emerging from the survey* and the *opinion of rural neighbors regarding the autonomy of Lezama* are analyzed while in the direction of columns *five zones* are presented in order to develop the field work .

The result is an integrated synthesis of previous qualitative-quantitative analyses which show the contradictory dynamics in the border area, with variable intensity according to the features of each zone. This resulted in the expansion or contraction of the border and it enabled the identification of *hypotheses of maximum, medium and minimum limits* for each zone from the area of study.



³ Among the weighting criteria, the number of variables for each analysis dimension was taken into account, the corrective factor of the clinical complexity of Chascomús against Lezama, the sparse population at school age, etc

As a conclusion

So far we have presented the *Portulano* method and its applicability to a specific case of study related with the territorial hypotheses of the partition of a district in the province of Buenos Aires. In this sense, the cartography no longer acts as a mere tool, the theoretical question related with the map meta data and its articulation with an object of study-intervention turns this tool into a method.

On the other hand, the notion of *coras* as precise territorial fields and territorialization of specific events, phenomena and processes was extremely useful to determine the influence of central Lezama. It has also been observed that the different types of *coras* (jurisdictional, functional and socio-cultural) have oscillating configurations, although they converge indicating general tendency lines.

The limits emerging from the analysis of functions and rural services constitute a frontier but they do not set a limit by themselves, neither does this ease the tension from the social and political contradictions that are present in the discussion of autonomy. In this sense, territorial configurations must be analyzed globally and they must be contrasted with other limits: the physical-natural borders, the economic-productive borders, the historical limits of local events and the tax-budgetary feasibility limits that go beyond the scope of this work.

The dynamics of the analyzed area of study unquestionably constitutes a zone of transition that redefines the “grey zone” made for operational reasons in the field work. We believe that the progress made as regards the identification of core ideas in terms of the expansion and contraction of the border is meaningful. They do not constitute the final result; rather, they enrich the discussion and the analysis of the object of study-intervention.

Finally, we have emphasized the application of the *Portulano* method as a contribution of a comprehensive cartography of problems of a knowledge- and action-related nature, based on the theoretical line supporting the investigations within the frame of territorial understanding. This, in turn, understood as it has developed from the European Net of Territorial Intelligence – ENTI: the understanding of the territory is the entry door to a territorial intelligence conceived as the way in which public actors and citizens –with scientific contributions- manage to make possible territories and places more sustainable and durable than the current ones, in the micro and meso-scale, within a frame of more real than discursive governance. This aims at the co-construction of scientific-technological production paths that could be useful to institutions and societies.

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