



## Health statistics aren't born in a cabbage patch: Jesuits, political arithmetic, stigmergy and oligopticons

Las estadísticas de salud no nacen de un repollo:  
jesuitas, aritméticas políticas, estigmergias y  
oligópticos

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**ABSTRACT** By analyzing the content and network of production of a map from 1751, created by the circular mission of the Jesuits in Chiloé (an archipelago located off the southern coast of Chile), that contains birth, death and population data, this article discusses the role that health statistics play historically, philosophically, technically and sociologically. In doing so, the article seeks to comprehend the genesis of a process of production of data and references in order to debate what health statistics are composed of, what ends they are used for, what their connection is to the formation of collectives and the differential conditions of possibility that exist for producing statistics. We attempt to develop hypotheses that demonstrate statistics as a hybrid articulation between diverse elements, epistemological, biopolitical, historical and philosophical in nature, with facets at once religious and demographic, ontological and ethnic, scientific and governmental.

**KEY WORDS** Vital Statistics; Cartography; Chile.

**RESUMEN** A partir de un análisis del contenido y la red productora de un mapa de 1751, elaborado por la misión circular de los jesuitas en Chiloé (archipiélago ubicado en la costa austral chilena), que contiene cifras de nacimientos, defunciones y habitantes, este artículo discute el rol de las estadísticas de salud, en diferentes registros: históricos, filosóficos, técnicos y sociológicos. De este modo, se busca comprender la génesis de un proceso de producción de cifras y referencias, para debatir de qué están hechas las estadísticas de salud, qué roles cumplen, sus vínculos con la construcción de colectivos y las condiciones de posibilidad de producciones diferentes. Tratamos de ensayar algunas hipótesis que muestran las estadísticas como articulación híbrida de elementos de índole muy diversa: epistemológicos, biopolíticos, históricos y filosóficos, reconociendo en ellos facetas religiosas y demográficas, ontológicas y étnicas, científicas y de gobierno.

**PALABRAS CLAVES** Estadísticas Vitales; Cartografía; Chile.

## STATISTICS AS QUESTIONS

The discussion and debate about the character and existence of statistics are not restricted to a univocal logic. Among the many methods of approximation, it is possible to conduct a mainly theoretical analysis that deals with the ontological and epistemic scope and suppositions behind the numbers and their syntaxes. Furthermore, it is possible to reflect on the basis of a material object – empirically delimited – whose distances of use allow for an exploration of the materiality and its implications in the constitution of statistics as a techno-scientific object.

We propose a journey in this second sense, through the study of a map with 260 years behind it. The map includes records of what today we call vital statistics, which refer to the Chiloé Archipelago in the Chilean colonial period. The archipelago is a territory distant from government centers, and not only in a temporal and geographical sense. A seafaring, nomad lifestyle is made possible by an inland sea which buffets and dishevels both territory and administration. The combination of these elements constitutes the starting point of this research.

### THE MAP FROM 1751

When examining Figure 1, the map in the center is what most draws one's attention. The drawing outlines the long, curved contour of Chiloé Island, different from its current representation. Correlative numbers identify 76 places that today are inhabited localities. A dotted line indicates a route that connects these 76 places. To the left of the map – in one large column – there is an enumeration in Latin with 15 items. To the right, a table with 77 rows and 7 columns is shown. The table headings announce words familiar to us: *parish, families, souls, communions, baptisms, marriages, deaths*. The last line reads *sum*; and, of course, at the bottom of the table, we find explanations and descriptions of the categories used. Each column represents places, families, people, births, marriages, and deaths corresponding to the points indicated on the map and, at the bottom, the totals. Finally, there is a text.

Looking simultaneously at the map and the tables, we find, for instance, that the first place marked is Ichuac, with *75 families, 370 souls, 426 communions, 24 baptisms, 2 marriages and 12 deaths*. The last place is Castro. Altogether: *2,295 families, 11,647 souls, 12,720 communions, 626 baptisms, 113 marriages and 515 deaths*.

Not only is the document an excellent record of vital statistics – with all the variables that currently define this field – but it also georeferences those statistics. It could be an academic paper were it not for its folded sheet format, the lack of references in Vancouver or APA style, the absence of an abstract and, of course, of key words. And what about the authors' identities? They are the Jesuits from the Chiloé Residence in Castro (in the center of the island), reporting on the circular mission carried out in 1751 (Figure 2).

How was this scientific production of vital statistics possible in this dark Chilean colony, so far from the seat of the monarchy?

## THE JESUITS' ACTIVITIES

### Circular missions

The map gives an account of one of the many circular missions that the Jesuits carried out every year from September to May, from the year 1624 until their painful expulsion on December 8, 1767 (1). Sailing in Chilota *dalcas* (a), the priests' main goal was to convert people to Christianity; however, they also devoted their time to the building of churches, the collection and recording of songs, the knowledge of herbs, and the exploration of passes such the Vuriloche, which connects Reloncaví Estuary to the Argentine Patagonia. While the information recorded has connotations of proselytism and *Indian* protection, it expresses an effort worth highlighting: by means of tables, numbers and graphs, the Jesuits sought to make the wandering *Chono* people (b) a collective. Their work amounts to the creation of a codified, organized and diagramed territory:

The most difficult mission that the priests have is that of the *Chonos*, the people furthest from Spanish trade, closest to the Strait and the most uncultured in these parts. The Chono are

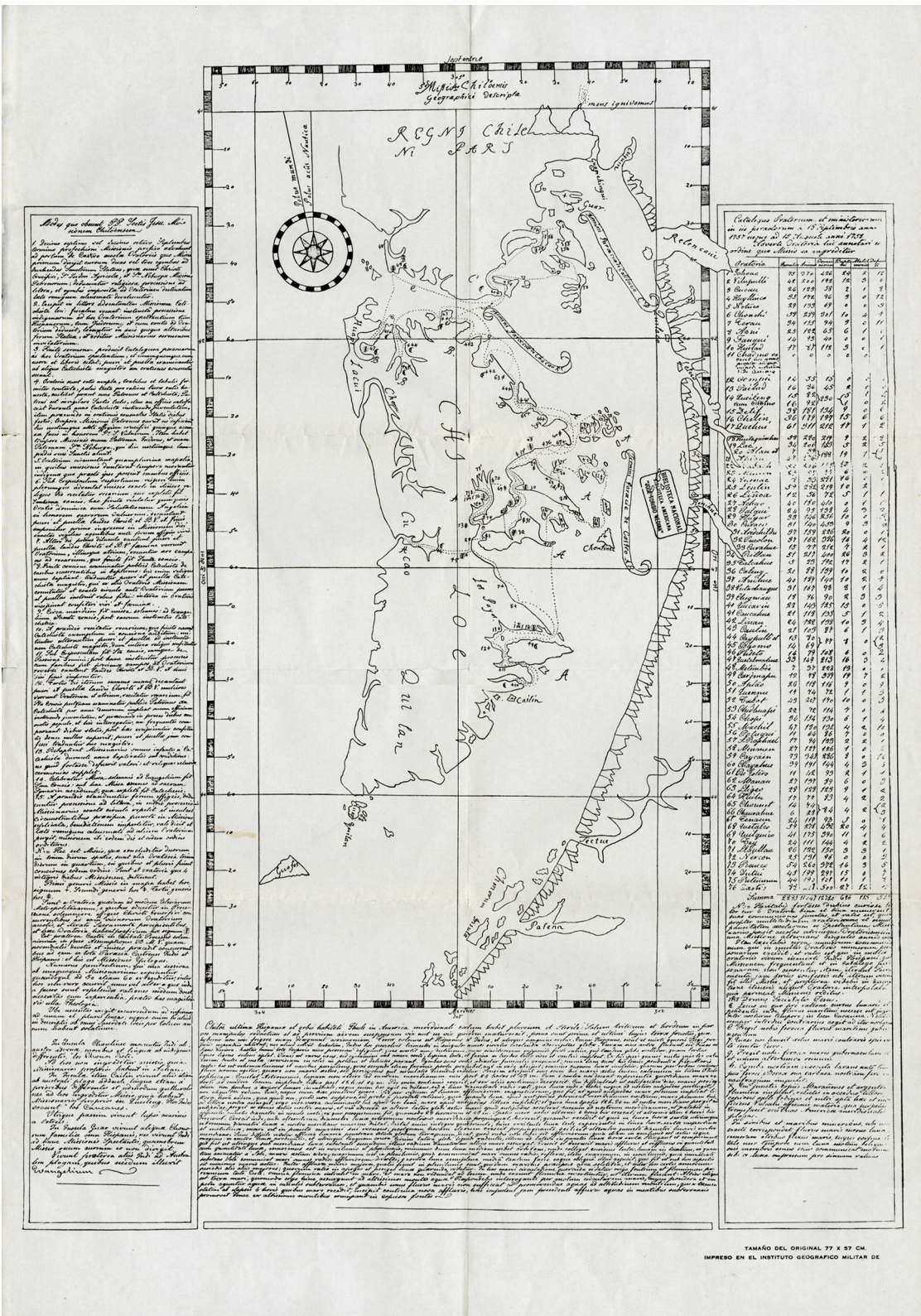
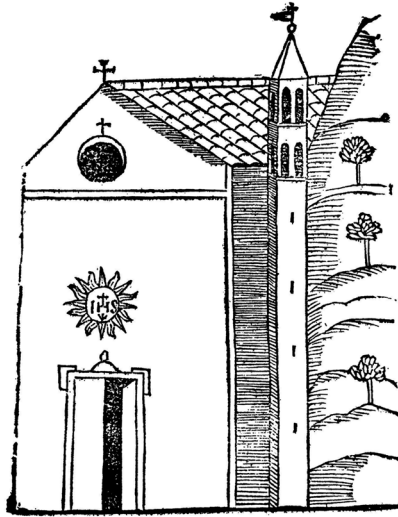


Figure 1. Circular Mission of the Jesuits from Chiloé in 1751.  
Source: Eduardo Tampe Maldonado (1).

## Residencia de Chiloc.

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**E**sta Residencia es la corona de todas las misiones, de donde salen nuestros Padres misioneros a cinquenta y dos Yslas, q̄ tienen alu cargo, navegando en piraguas, con tan grandes y incomodidades, trabajos y peligros de la vida, que no ay mision, que en esto la exceda, salen tambien a tierra firme, de donde tienen que correr de largo mas de cien leguas, hasta el estrecho de Magallanes.

Translation: This residence is the crown of all the missions, from whence our missionary fathers journey to fifty-two islands under their charge, sailing in pirogues at great inconvenience, toil, and mortal danger such that no mission can surpass it. They also go hence on land, on which they must travel over fifty leagues to the Strait of Magellan.

Figure 2. Picture of the Jesuits' residence in Castro according to Alonso de Ovalle, 1646.

Source: Alonso de Ovalle (2).

Note: The indicated year corresponds to the first edition of the book by Alonso de Ovalle, published in Rome.

divided into several groups spread over many islands, such as in the Chiloé Archipelago. They do not have a true dwelling and are continuously traveling, moving with their family and their bundle of belongings from island to island to collect seafood, their habitual sustenance. They have neither *chácaras* [farms] nor sowings; furthermore, they drink the oil of sea lions, which gives them their pale color. They therefore live most of the year in the sea, as they find it necessary to look there for their sustenance. (2 p.555) (c) [Italics in original] [Own translation]

How can we understand the multifaceted efforts of the Jesuits? What aspects are present in this

diverse exercise of evangelization and civilization? How can we recover the different approaches that take part in this primary constitution of territorialization, government and population? What are the underlying scientific and disciplinary suppositions?

## MAP, TERRITORY, GOVERNMENTALITY

It is useful to highlight the points of encounter between map and territory. In fact, the proposition *the map is not the territory*, "made famous thanks to Alfred Korzybski" (3 p.26), refers to the fact that cartography and graphic elaborations are different from the landscape. It is enough to go to the national borders located in hostile lands such as mountain ranges or deserts to observe the impossibility of finding, in the beautiful wild landscape, something similar to a mark, division or other mechanism that defines sovereignty. The statement encourages us not to trust entirely the representation of what is being explored and thus to avoid the risk of getting lost. However, this does not mean that the map does not serve to order or control: in search of orientation, the map is an attempt to dominate, manage and organize. Hence, more than to pursue the immediate proximity of a wild virgin landscape, the statement highlights the fact that any map is an attempt – deliberate or not – to constitute, invent, or found a territory. In that respect, the map is territorialization: a coding that allows the advancement, organization, demarcation of something that appears to be unknown.

Deleuze and Guattari (4) have made contributions to the concept of territorialization, considered a permanent movement of folding and unfolding of subjectivity in the diversity of its practices. By means of this language, these authors attempt to provide tools with which to explain political and cultural processes without appealing to the substantiality of the subject or to invariable structural processes that operate with a binary logic. Instead, they propose a logic of rhizomes and of flows, which emphasizes the mobility and plurality of the dimensions that intervene in these processes. Thus, they appeal to a complementarity more than to an opposition between explanatory models, in which, however, the territorial principle is unavoidable:

...the first operates as a transcendent model and tracing, even if it engenders its own escapes; the second operates as an imminent process that overturns the model and outlines a map, even if it constitutes its own hierarchies... (4 p.25)

From this perspective, the map questions and tries to establish a point of contact with the references themselves, with the very symbology that permits us to understand the world and order experience. But this is not only an interpretive gesture. Geography is always associated with a conquering impulse, and thus territorialization indicates the unfolding of a subjectivity that advances:

...territory is a synonym for appropriation, for subjectivation fixed on itself. It is a set of representations that will culminate, pragmatically, in a series of behaviors, investments and in social, cultural, esthetic, cognitive times and places. (5 p.467-468) (d) [Own translation]

In spite of the passive nature of the Jesuit missions, the map indicates an encounter with the Jesuits' intentions to convert the *Chono*, a nomadic people dwelling in an inland sea area. The map is an attempt to articulate a common world among inhabitants of dissimilar worlds. Foucault has described this dynamics in terms of governmentality. The process by which territorial logic gives rise to population logic allows us to comprehend the importance of the management and order of the territory in the constitution of a population:

By governmentality I mean...the ensemble formed by the institutions, procedures, analyses and reflections, the calculations and tactics that allow the exercise of this very specific albeit complex form of power, which has as its target population, as its principal form of knowledge political economy, and as its essential technical means apparatuses of security. (6 p. 655) (e)

As with a number of notions employed by Foucault, those of territory and population, rather than annulling or replacing one another, add to, complement and superpose one other, accenting different things and enhancing certain



Translation: In this archipelago, and the islands of the Chono, of which there are over fifty, missions are carried out at the cost of enormous work and frequent mortal dangers.

Figure 3. Map of Chiloé according to Alonso de Ovalle, 1646.

Source: Alonso de Ovalle (2).

Note: The indicated year corresponds to the first edition of the book by Alonso de Ovalle, published in Rome.

approaches. Thus, governmentality implies the previous gesture of territorial order and management in terms of border and sovereignty, but goes hand in hand with the elaboration of statistics and the inventory of elements arranged in space. Governmentality is, more precisely, an art of governing that creates a rationality and procedures for the functioning of the State. Rather than centering on the territory, governmentality consists of its management, knowledge of its strengths and particularities in benefit of a project, an exercise of governability. This map contemplates variables of government, indicators of population and a tentative approximation to the state of these *Indians'* faith. In summary, the map is the first record of

their lifestyles. The value of the maps to the Jesuits explains the existence of various representations of these missions and the fact that documents that record the confessional work of the order are historic relationships with a great cartographic production, as shown in Figure 3, taken from the book by Ovalle.

## POLITICAL ARITHMETIC

The use of numbers to create collectives can be related to what Foucault called techniques of governmentality (7,8). The expression perhaps excessively emphasizes government from a vertical perspective and relegates more horizontal problems of reference, translation and coordination – necessary in any collective – to the examination of more or less centralized institutions which are imposed, instead of recognizing more distributed forms with double flows. Indeed, Foucault deals with governmentality from a perspective characterized as biopolitical, as a type of technology that asserts a specific form of power over individuals' lives and that fundamentally marks the deployment of State policies over the population. So characterized and compared to disciplinary technologies, governmentality does not take on a very good color, but rather acquires suspicious connotations of domination and control that, although true, should not make us forget that the implementation and elaboration of the population as an object of government also represents the possibility of identifying deprivations, taking living conditions into consideration and, in that respect, constituting basic social guarantees. From our perspective, the discussion in these terms neglects the performative richness of the technical gesture contained in the map and does not allow the value that it specially has for health statistics to be seen. No ethical judgment or "activism" of rationality and intention can unveil this sketch by the Jesuits.

Health professionals may often have William Petty in mind when referring to numbers and government. We certainly think about *Natural and Political Observations; mentioned in a following Index, and made upon the bills of mortality*, presented by John Graunt in the Royal Society of

London in 1662; through mathematical modeling of population dynamics from London parish registers, the author was able to simultaneously calculate the number of city inhabitants and obtain the King's favor.

However, Petty can also be seen as a precursor of the physiocratic movement. He can be considered as a figure of renewal of mercantilism that, by placing emphasis on the agriculture and productivity of country people, proposes an intellectual transformation of the concept of economy – led by Turgot and Quesnay – around the value-labor problem (9). These aspects continue to stimulate economic thought and, as such, are key points of articulation in the economization of collective life. The words with which his son introduces the posthumous edition of *Political Arithmetick* in 1690 highlight Petty's purpose:

It was by him stiled Political Arithmetick, in as much as things of Government, and of no less concern and extent, than the Glory of the Prince, and the happiness and greatness of the People, are by the Ordinary Rules of Arithmetick, brought into a sort of Demonstration. (10 p.3)

For Petty, numbers are instruments of government but also of the people's happiness, of debate and of demonstration. In Petty's life, the idea of numbers as a construction of the collective was present in the Ireland census, in mortality figures and in the challenge of creating national counts. All in all, what Petty did in the seventeenth century our Jesuits did a century later, laying the foundations of what we experience as the economization of collective life, under the rules of what Callon calls neoclassical anthropology "to highlight the fact that any economics is an anthropologics" (11 p.10), as it assumes a certain model of the human being, in which there is someone who is a subject, who is individuated and, in turn, who holds an economically organized rationality.

The movement of political and statistical arithmetic had at that time some decades of development:

A German professor, Hermann Conring (1606–81), is usually credited with having been the first to give lectures of this kind.

Another, Gottfried Achenwall (1719–72), who did the same, introduced the term Statistics. These “statistics” did not present figures primarily but rather non-numerical facts, and therefore had nothing to do, in the hands of those professors, with what we now call statistical method. But the purpose of this information was much the same as that which our figures, treated by somewhat more refined methods, are calculated to serve. (12 p.201)

A reflection on both aspects of statistics, governmentality and economization, is today an urgent necessity for public health. The growing process of the economization of health and the need to deal directly with the political aspects of collective health require the examination of objects as close and powerful as statistics with distance and strangeness (f).

By the *economization of collective life*, we refer to the use of devices of calculation that coordinate aspects of life as economic phenomena (18). The study of economization is an area of the sociology of translation or actor-network theory that endeavors to comprehend how objects and people are connected (entanglements and disentanglements) in *agencements* [socio-technical arrangements that include the possibility for agency], and thus seeks conditions of possibility for other variants of numbering the collective (11).

## MODERN SCIENCE

The function of numbers in the emergence of contemporary science is closely linked to the divine meaning of numbers. As shown by Frances Yates (19), the heresy of Giordano Bruno (1548-1600) was not simply displacing an erroneous astronomical theory. It was linked to the pagan dialog of second century Christianity present in *Asclepius and Pimander* (g), wrongly attributed to pre-Christian times. To place the sun in the center of the universe also changed the perspective of numbers and signs. The use of mnemonics and his work with spatial diagrams for such purposes are also part of his intellectual legacy. Bruno discusses *divine mathesis*, one of the four guides to religion (19); this *mathesis* resonates with the project of

*mathesis universalis*, developed throughout the seventeenth and eighteenth centuries according to Foucault (20). *Mathesis universalis* is nothing less than the project of total representation, that is, the integration of the whole universe into signs and symbols. Thus, it expresses the relation between knowledge and total order: “the project of a general science of order; a theory of signs analyzing representation; the arrangement of identities and differences into ordered tables” (20 p. 86) (h).

It is a notion that encompasses many meanings and that cannot be explicitly identified. On the contrary, the *mathesis* circulates as an aspiration manifested in a universal method of analysis, which integrates within its framework all simple natures, that is, all particular cases. The approximation to any type of singularity, be it in the field of living beings, of words and names, or of the estimation of monetary value – indeed, in all cases – is mediated by a general design of the order in which it takes place and which allows for its representation. For the same reason, the *mathesis* is closely linked to a genesis – the determination of the origin and the possibility of comparison – and with a taxonomy – analysis of the representations on the basis of similarities and differences – which finally allow for the elaboration of a system of signs in which it is possible to read the *continuum* of things. Thus, we attend to a way of reading the great order of nature, a key of analysis that establishes a certain disposition between representations and signs. A key, incidentally, that is raised as a frame in which general grammar, natural history and the analysis of wealth meet, and which, as a whole, is constituted as a reflection of the world order:

The continuum of representation and being, an ontology defined negatively as an absence of nothingness, a general representability of being, and being as expressed in the presence of representation – all this is included in the total configuration of the Classical episteme. (20 p. 219) (i)

Reference to numbers, of central importance within current science, was, in turn, strengthened and given new implications because of the use of the movable type printing press and the possibility of having thousands of copies, similar replicas of the same text (21). Goody highlights that,

in collectives where the distribution of writing is limited, magic influences number interpretation (22). We could consider that even after the invention of the printing press, the circulation of written texts was not massive enough to avoid the magic of numbers.

Indeed, it is precisely that magic which is still present in the Jesuits' world. In fact, we can see Bruno's influence on Athanasius Kircher (a German Jesuit priest), who mentions Bruno in his works and, like him, still believes in the Egyptian filiation of Christianity according to the incorrect attribution of *Asclepius* and *Corpus Hermeticum*.

As shown by Acuña (23), Chilean Jesuit priest Alonso de Ovalle, when visiting the Vatican between 1647 and 1650, had an important meeting with Kircher, who published materials by Ovalle in two of his books. Kircher's presence and importance among Chilean Jesuits is expressed in the 18 copies of his books that went to the Universidad Real de San Felipe (Chile's first university) and on August 5, 1818 were introduced into the Chilean National Library. Nicolás Mascardi, Kircher's favorite disciple, joined Ovalle in his return to Chile and himself never returned to Italy. There are seven letters Mascardi sent to Kircher, which serve as evidence of their continued relationship despite the distance.

Mascardi had knowledge of mathematics and a particular interest in geography; together with Alonso de Ovalle and another young student, José María Adami, he visited Giovanni Battista Riccioli, an Italian Jesuit knowledgeable in geography. After Mascardi's death, Riccioli's *Astronomia* was found among his belongings.

Mascardi arrived in Chile in 1652 and became a missionary in the village of Buena Esperanza in the Araucanía Region. After his instruments were destroyed in the insurrection led by Tinagucupu in 1655, he was appointed rector of the Jesuit School in Chiloé in 1662. We know that this disciple of Kircher's died in the search for the City of the Caesars in 1674, during a journey east from Castro, while crossing the mountain range through Reloncaví Estuary using the Vuriloches Pass.

The technical knowledge and the drawing and counting ability of the Jesuits from Chiloé have a point in common with the emergence of

the modern sciences and the role of numbers. Somehow, all these elements – the *mathesis*, the magical conception of numbers and Giordano Bruno's influence – are present in the work and territorial design of the Jesuits in Chiloé. Furthermore, their work relativizes suppositions about what is center and what is periphery at a particular moment. We are used to judging according to the winner's story (Whig history), as though a territory had never been in dispute by different lines of force, as though an established center always existed.

## STATISTICS AND STIMERGY

The numbers on the map allow us to question some explanations of the emergence of statistics. Hervé Le Brass has questioned formulations that analyze the use of numbers as a way of organizing collectives through a purely economic explanation or a capitalist rationality (9). Le Brass accepts neither that mortality tables are related to a supposedly rational calculation for insurance purposes, nor that they are derived from the double-entry tables of accounting. Le Brass's criticism is important, for it is connected to radical questionings regarding the real usefulness of utilizing the word "capitalism," such as that made by Goody:

Can we not therefore dispense with this pejorative term drawn from nineteenth-century Britain and recognize the element of continuity in the market and in bourgeois activities from the Bronze Age until modern times? (24 p.227)

Or by Latour:

Capitalism has no plausible enemy since it is 'everywhere', but a given *trading room* in Wall Street has many competitors in Shanghai, Frankfurt, and London—a computer breakdown, a sneaky movement by a competitor, an unexpected figure, a neglected variable in a pricing formula, a risky accounting procedure—that may shift the balance from an obscene profit to a dramatic loss [...] Don't focus on capitalism, but don't stay stuck on the screen of the trading room either: follow the



connections, 'follow the actors themselves'.  
(25 p.256-257) [Italics in original]

Based in some of Foucault's research, Senra suggests considering statistics as distance technologies (26) and Desroisères suggests considering them a combination of government and measurement (27). In addition to the usual semantic or representational functions of numbers, Senra recognizes a syntactic function of statistics, that is, an organizing and performative function. This double function of numbers, which allows them to be examined from richer perspectives, nevertheless suffers from an analysis style based on suspicion, which leads us back to the matter of governmentality.

It cannot be denied that questions of governmentality were present in the Jesuits' map and in the actions of the order. Contemporary estimates indicate that Jesuits controlled approximately 25% of the gross domestic product of Chile in those times, constituting a sort of government in *inxile* – internal to the country, but possessing an otherness with passive antagonism – which of course upset the king every time he heard of the reformist political forces in America and Europe (28).

But there is something more than governmentality in the numbers. There are also unquestionable collective aspects, which we have called the horizontal dimension of numbers, which makes collective life possible. Latour has suggested that the expression *stigmergy*, employed in ecology (29,30), be used for human beings.

Taken from the studies of animals that organize themselves in collectives, stigmergy refers to the signals traced on the walls of beehives or nests or in the build-up of matter, which guide animals to continue the work. Those signals allow the common production to be coordinated. When stigmergy is not considered, the whole seems to arise like something inexplicably produced by a chaotic addition of parts, that is, a collective that emerges from the spontaneous actions of isolated individuals. But stigmergy makes the invisible hand of God unnecessary in beehives.

Holisms and atomisms in sociology contrast individuals with society. However, that agony disappears if we consider that there are not two levels at play, the individual and the whole, but a continuum organized by stigmergic traces.

In the human world, enriched and multiplied by technical objects such as oral language, writing, numbers, the zero, graphs, the press, the computer and the Internet, statistical objects play a role we dare to call stigmergic. Maps propose the articulation of organizational forms of the life of a collective, highlighting important aspects, signaling problems in common, and fostering debates. They are of course contingent, transitory forms, which are neither necessary nor organized around a radical break with a lineal past

## OLIGOPTICONS

The production of health statistics is a part of this stigmergic function, which connects us to Dewey's expressions about democracy, understood as the search for the construction of the public, and the role that corresponded to signs and arts in that task:

Our Babel is not one of tongues but of the signs and symbols without which shared experience is impossible. [...] Only when there exist *signs* and *symbols* of activities and their outcome can the flux be viewed as from without, be arrested for consideration and esteem, and be regulated. Lightning strikes and rives a tree or rock, and the resulting fragments take up and continue the process of interaction, and so on and on. But when phases of the process are represented by signs, a new medium is interposed. As symbols are related to one another, the important relations of a course of events are recorded and are preserved as meanings. Recollection and foresight are possible; the new medium facilitates calculation, planning, and a new kind of action which intervenes in what happens to direct its course in the interest of what is foreseen and desired. (31 p.134-141) [Italics in original]

A good disciple of Peirce, Dewey understood the essential functions of signs – as words, numbers, icons – in collective life. The value he gave signs in the creation of the public is in accordance with Peirce's view:

...the word or sign which man uses is the man himself. For...the fact that every thought is a sign, taken in conjunction with the fact that life is a train of thought, proves that man is a sign. [...] The individual man, since his separate existence is manifested only by ignorance and error, so far as he is anything apart from his fellows, and from what he and they are to be, is only a negation. (32 p.121)

A place where inscriptions (or signs) meet and their traceability, or chain of transformation, is preserved can be considered an oligopticon:

...these places do exactly the opposite of panoptica: they see much *too little* to feed the megalomania of the inspector or the paranoia of the inspected, but what they see, they see *it well* – hence the use of this Greek word to designate an ingredient at once indispensable and that comes in tiny amounts [...] From oligoptica, sturdy but extremely narrow views of the (connected) whole are made possible – as long as connections hold. (25 p.260) [Italics in original]

The Jesuits outlined a Chilote oligopticon on their map; they collected upon the paper's surface in a single bivariate graph what they

thought “important” regarding the *Chono*. The question of importance in statistics is of the highest order. As Whitehead stated:

We concentrate by reason of a sense of importance. And when we concentrate, we attend to matter-of-fact. Those people who in a hard-headed way confine their attention to matter-of-fact do so by reason of their sense of the importance of such an attitude. The two notions are antithetical, and require each other. (33 p.14)

The Jesuits' document highlights today other meanings not considered at that time, such as the value of the architectural patrimony made up of the buildings and places enumerated on the map. Although it is true that the oligopticon sees less than what is there, at the same time it allows us to see what we would not see otherwise. Some call oligopticons “the whole”: the health diagnosis, the health situation, the priorities in health, the health statistics. No problem, we are not discussing names. We simply insist that such a whole is always smaller than the parts, that such a whole is contingent and therefore one among many possible wholes. Another statistics is not simply necessary; we wish to think that it is increasingly possible.

## ENDNOTES

a. *Dalcas* are boats made up of three planks joined together and caulked with oakum made of fiber from larch trees. They serve as evidence of the hybridization of the circular missions.

b. The *Chono* were a seagoing people in the *Chiloé* island territory that developed a sort of woodcrafting culture. Their most representative products were the three-plank canoes or *dalcas* and the *Chilota* churches presently considered a heritage of humanity. The Jesuit circular missions in *Chiloé* organized religious, political, and material encounters with this ethnic group.

c. “*La misión más trabajosa que aquí tienen los padres es la de los chonos, gente más apartada del comercio de los españoles, más cercana al Estrecho e inculta de cuantas hay en estas partes. Divídense en varias parcialidades esparcidas por muchas islas, como en el archipiélago de Chiloé. No*

*tienen morada cierta, de continuo traen el hato a cuestras, mudándose con su familia de isla en isla a coger marisco, que es su ordinario sustento, sin tener otras chácaras ni sementeras; a que añaden beber el aceite de lobos, con que traen el color pálido, y a la causa viven lo más del año dentro del mar, porque les es fuerza buscar en él su sustento.*” (2 p.555) [Italics in original]

d. “*...el territorio es sinónimo de apropiación, de subjetivación fichada sobre sí misma. Él es un conjunto de representaciones las cuales van a desembocar, pragmáticamente, en una serie de comportamientos, inversiones, en tiempos y espacios sociales, culturales, estéticos, cognitivos.*” (5 p.467-468)

e. “*Par gouvernementalité, j’entends l’ensemble constitué par les institutions, les procédures, analyses et réflexions, les calculs et les tactiques qui permettent d’exercer cette forme bien spécifique, bien que complexe, de pouvoir, qui a pour cible principale la population, pour forme majeure de savoir,*

*l'économie politique, pour instrument technique essentiel les dispositifs de sécurité*" (8 p.655).

f. Using other words and approaches, Adolfo Murillo (13), Augusto Orrego Luco (14), Salvador Commentz (15), Alvaro Covarrubias (16) and Hugo Behm (17) discussed statistics with a sense of the collective.

g. *Pimander* – the first tractate of *Corpus Hermeticum* – and *Asclepius* are texts written between 100 and 300 AD, which were highly debated in the Renaissance under the conviction that they came from the Egyptian civilization.

h. "*Projet d'une science générale de l'ordre; théorie des signes analysant la représentation; disposition en tableaux ordonnés des identités et des différences...*" (20 p. 86).

i. "*Le continuum de la représentation et de l'être, une ontologie définie négativement comme absence de néant, une représentabilité générale de l'être, et l'être manifesté par la présence de la représentation, -tout ceci fait partie de la configuration d'ensemble de l'épistémè classique.*" (20 p.219).

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