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Medical Doctor, Economist and Statistician: A Strategic Alliance for Healthcare and Development in the Italian Directorate General for Statistics (1861-1898)

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Introduction

- 1 Throughout the last decades of the 19th century in Italy, the positivist debate on hygiene and social issues raised the awareness of the State on the need to work hard for public health. The positivist influence was summed up to medicine's achievements in the fields of bacteriology and the study of pathologies, and to an increased attention towards the non-integrated areas in the national development process. Statistics provided the tools for creating new development strategies, and healthcare, as well as education, were increasingly being considered fundamental parts of this process.
- 2 Thanks to the work of medical doctors, pharmacists, teachers, and parish priests, Italians were taught proper hygienic behavior and trust was built for doctors and modern medicine. Statisticians—some of which were medical doctors too—provided legislators with factual analysis on health-related phenomena making comparisons across other countries. Some governments would gradually lay the groundwork to let this cultural push become effective from a political point of view. Despite its ups and downs, this process would lead to a healthcare legislation adequate to a developing country.

- 3 It is generally believed that welfare was born as one of the most important corrective actions to face social costs in advanced capitalist countries. Nevertheless, it is also true that the history of healthcare responded to a request for development which was not only economic but also social. Such a request was increasingly being recognized by the civil society of a developing country and—as far as Italy is concerned—it was certainly recognized at the moment of the Italian Unification (in 1861).
- 4 The rising need for protecting public health and the extension of the State's obligations provide a measure of the strengthening of the Unitary State and of the development of its internal social forces.
- 5 In order to cope with this issue, great importance should be given to the legislative process of public health protection measures. The reference framework for our journey is the history of Italian legislation on health and hygiene (section 1). We will then analyze the role of the doctors in particular and the social medicine perspective in general, that played a fundamental role in raising public opinion's and government institutions' awareness (section 2). Economists played a key role in linking health protection and development. Openness to foreign theoretical experiences and a general faith in the worthiness of the positivist methodology had especially contributed to the advancement of the study and factual application of statistics, both in the domains of political economy and science of administration. For this reason, economists' work, and particularly the ideas of the Lombard-Venetian school, will be thoroughly analyzed, as well as the relationships between the school's members and the statisticians. Here, great importance is given to the creation of the Directorate General for Statistics and to Luigi Bodio, Director of Statistics (from 1872 to 1898) and developer of a wide net of international relationships (section 3). Finally, it will be examined the issue of health in the analysis run by the Ministry of Agriculture, Industry and Commerce (MAIC)'s Directorate General for Statistics from Italian Unification to the end of the century (section 4).

1. The Development of the Italian Healthcare Legislation. The Post-Unitarian Evolution

- 6 Article 32 of the 1948 Constitution of the Italian Republic sets out:
- The Republic protects health as a fundamental right of the individual and concern of the collective and guarantees free medical care to the indigent.
- 7 This article is the point of arrival of a process which had started with Italian Unification in the second half of the 19th century. First step of the process is the Italian Law n. 3793 dated November 20, 1859 setting out that “it is up to Italian local authorities to decide whether to set up or not a *condotta medica*”.¹ This led to an irregularly distributed healthcare system that was especially detrimental for rural communities and Southern Italy. Healthcare needs were generally satisfied thanks to private and religious charity. The Italian Law n. 2243 dated March 20, 1865 marked a second step, as it is the first organic law on healthcare. It sets out that Italian Municipalities had to include in their budgets the cost of healthcare for indigents—considering the expenses for doctors, surgeons, and midwives. More and more *condotte mediche* were set up far and wide over Italy (Soresina, 2015).
- 8 In 1874, the 1865 Italian Law's implementing rules were regulated and reviewed. Here importance was given to hygiene practices in residential areas, workplaces, food

processing and to sanitary requisites in burials. For the first time, an increased sensibility towards social and environmental hygiene—hot topics in medical conferences—could be perceived.

- 9 In 1880, Agostino Depretis, Prime Minister and Minister of the Interior of Italy, entrusted Agostino Bertani, medical doctor and patriot of the Italian *Risorgimento*,² with drafting a new health code system. In 1886, Bertani proposed a project based upon the idea that the State had *the obligation* to protect public health by coordinating prevention and healthcare. Bertani died on August 1886, and Depretis' government was dismissed the following year. Their project was never put into action.³
- 10 In 1887, under Francesco Crispi's government, a period of reforms started and a General Directorate for Public Health was created. It was made up of medical doctors, chemists and engineers in charge of laying the groundwork for laws and general regulations that would result in the Health Law of 1888.
- 11 Under Crispi's direction Italian Law n. 5849 dated December 22, 1888 was released. It sets out some important measures on healthcare based upon a project of Luigi Pagliani, an Italian hygienist and the first General-Director of Health (in 1888).
- 12 The Supreme Council of Health was created by the Italian Ministry of the Interior. An obligation was introduced for Italian Municipalities to pay one or more *medici condotti* and midwives (Soresina,2015, 183-185).
- 13 The legislature—taking the principles contained in the Laws of 1865 and 1888 as a point of reference—progressively started to focus on specific or social diseases, such as: swamp fever, tuberculosis and pellagra. The legislature's intervention extended to female and child labor, workmen and rural workers' guarantees, and new fields (food, housing, maternity and dangerous manufacturing among others) were also to apply hygiene practices.
- 14 To complete the picture, the Italian Law n. 6972 dated July 17, 1890 on Italian Institutes of Public Assistance and Charity (IPAB, for its acronym in Italian), commonly known as *legge Crispi* (Crispi's Law), called for the nationalization of Italian private hospitals, retirement homes and charity institutions. According to an 1896 statistic, in Italy there were more than 23,000 private institutes that could count on substantial assets and that would become IPABs. This was the most important reform in the Italian health and assistance landscape. This measure did not have big tangible outcomes in terms of improving assistance. Nevertheless, it was important in that it disciplined and fostered the widespread and commonly recognized right to hospital care. It set out that poor, sick people and people in need of emergency admission have the right to benefit from hospital care. As a consequence, the charity and assistance institutions' net—inherited from a long tradition but still rich in initiatives and resources—became part of a brand-new public, state-run system.
- 15 Later on, in the early 20th century, under Giolitti's liberal governments (between 1898 and 1913) a further step forward would be taken. Nevertheless, much more time was required before introducing a compulsory health insurance to improve labor force's⁴ productive capacity.
- 16 With World War I, the role of the State would be profoundly changed, thus overcoming—for the first time—liberal governments' functions of control and remote assistance. The war would underline the deficiencies of the Italian voluntary-based Welfare system that was not able to cope with an increase in diseases. Such deficiencies would come to light

with the 1918 Spanish flu pandemic and its incredibly high mortality rate. Because of this, Francesco Saverio Nitti (Prime Minister at that time) would propose to establish an Italian global insurance system for diseases, pensions and unemployment.

- 17 Nevertheless, neither a direct link between such public health legislation and Italian Welfare nor a truly social-state model existed, yet. In reference to public health, it is possible to recognize that a transition process had started. The subsequent laws would be influenced by a new and different understanding of what healthcare was and what health-related State's obligations were.⁵
- 18 Now that the historical record of Italian legislation on health and hygiene issues has been outlined, we can turn to the role played by medical doctors and social medicine in raising public opinion and government institutions' awareness.

2. Medical doctors and Social Medicine: the “Healthcare Conscience” of the Nation⁶

- 19 What role did medical doctors play across this legislative process? Some medical doctors were directly asked to draft legislative proposals by Italian Prime Ministers and Ministers of the Interior. At that time, medical doctors thought of their work as a social mission they could complete working together with government's institutions and civil society. The “social medicine” rising perspective was focused both on hygiene and disease prevention, thus leading medical doctors of different political orientations (moderates, democrats, socialists) to recognize the important role played by the State in health protection.
- 20 In 1880, Cesare Correnti—another protagonist of the Italian *Risorgimento*, President of the Italian Royal Commission of Enquiry on Charity Institutions, and well known for his statistical enquiries—recognized the need for a new kind of assistance that would overcome a charity-based system and respond to a demand for Social Security. The model was the “medical police” that had already been implemented in Lombardy during the period of enlightened reforms of the Habsburg House. According to Correnti, the Kingdom of Italy should revive Johann Peter Frank's *medizinischen Polizey*.⁷
- 21 Health was seen as a community concern with an important value both for the interest of the individual and for the community. In this cultural-historical process, medical doctors played a fundamental role. This was true especially for the city of Milan where in 1879 the Italian Society of Hygiene was founded under the initiative of the Italian Medical Association's Committee of Milan. Its main purpose was to support and spread medical-health practices with a view to social medicine.
- 22 In order to achieve this goal, a lot of work had to be done. In the early years of the Kingdom of Italy, people's health conditions were miserable both in absolute terms and when compared to other European countries. Some social diseases-related data (Della Peruta, 1980) can help us to understand the health conditions in Italy. In 1881—the first year for which good statistics on mortality-by-cause are available—roughly 30% of all deaths occurring were attributable to infectious diseases, then to respiratory diseases, flu and digestive system diseases. During this period, most people died from tuberculosis (220 deaths for every 100,000 citizens per year) a lethal and easily spread infectious disease. It gradually became clear that the social nature of the disease tended to affect poor classes and to spread in overcrowded and unhealthy places. Tuberculosis spread due

to unhealthy conditions in industries and public places, a lack of basic healthcare education, and food-shortages in rural classes. Anti-tuberculosis vaccines were not available yet, but preventive measures were increased. The social control of the disease was increased through: disinfection practices, environmental recovery actions, development of sewage systems, health and hygiene education and by improving eating habits of ill people.⁸

- 23 Social medicine also focused on the fight against malaria. Being a swamp and unhealthy environment-related disease, malaria outbreaks usually affected underdeveloped areas. In 1881, in Italy, 50 people for every 100,000 citizens per year died from malaria. Some endemic and severe forms of malaria were present in many Italian regions while being completely absent in others. Both the economy and the demography of areas facing a malaria outbreak were strongly affected (Rossi, 1982). It was possible to fight the disease by reclaiming swamps and using land for intensive farming. Preventive measures and treatments were also increased by means of numerous legislative interventions. Since 1901,⁹ for example, quinine would be distributed for free to people working in areas at risk of malaria.
- 24 At the end of the 19th century, 0.5% of all deaths per year were attributable to pellagra.¹⁰ This disease had a smaller death rate than others, but still remained an interesting case of study. Pellagra was a nutritional deficiency disease that tended to affect some specific sections of the population such as workers living in the rural areas of Northern Italy¹¹ (Finzi, 1982). In this case, to eradicate “deficiency diseases” it was useful to match an increase in the population’s income—which has a direct result in improving eating habits—with medical knowledge. By investigating the aetiology of the disease, it was indeed possible to take concrete actions with people’s diet that—without requiring substantial increases in income—could help to avoid deaths.
- 25 In the following years, the relevant advances in bacteriology would influence preventive medicine policies and interact with Crispi-Pagliani’s Law of 1888. The Law set out the basic hygiene principles that the government of the city should adopt and gave guidelines on: building planning, drinking water supply, and on the removal of organic wastes and noxious industries.
- 26 As social diseases started to spread, hygiene passed from being a private issue to a public one that encompassed environment, waters, as well as all the city’s areas. Many issues had to be addressed in relation to unhealthy environments, water supply, waste disposal, overcrowded households and so forth. The hygiene of the city was included in a community-protection-setting that complemented an individual-care-setting implemented in clinics. The *clinic* and *hygiene practices* were referred to as “the science of the individual” and “the complex science of healthcare”, respectively. Hygiene would heal a sick city thus preventing the need for a clinic where to heal a sick individual (Zucchi, 1881, 92).
- 27 At this time, the first Institute of Experimental Hygiene in Europe was established in Munich by Max Pettenkofer. According to him, hygiene and an unhealthy environment were “the first science of public health” and “the first cause for disease”, respectively.
- 28 In 1882, Robert Koch identified the specific causative agent of tuberculosis. From then, hygiene would be given solid scientific basis by microbiology. As more discoveries were made, the environmental factors seemed to scale down and to become just a contributory cause. But in Italy, the Italian Society of Hygiene continued to stress the importance of

the environment and started to collaborate with physicists, chemists, engineers, and architects in order to overhaul the city of Milan.¹²

- 29 The fight against child mortality—with 48% death rate in the early years of the Italian Unification—happened to be another important facet of hygiene awareness. According to hygienists, the problem was associated with the society and not with nature. It referred to people's level of education and social classes and it called for some prevention tools—such as a multilateral assistance for pregnant women, women in labor and newborns—to be used. In considering this matter, great relevance was also given to the issues of breastfeeding and abandoned babies. Importance was given to the role of women (mothers, teachers) in hygiene and to physical and mental hygiene, thus calling for a strong collaboration between the school doctor and the gym professor. Reflections were made on work hygiene and on a social legislation that would protect women and children from premature work and/or overwork, and workers from accident hazards.¹³
- 30 A new sensitivity towards these issues and its diffusion in the civil society would result in the already-cited Law of 1888. It has already been underlined the role played by medical doctors in this legislative history. Further details are shown below. It is worth mentioning that in 1876 Agostino Bertani¹⁴—a medical doctor from Milan—ran an inquest entitled *Sulle condizioni igieniche e sanitarie dei coltivatori della terra in Italia (On the hygienic and sanitary conditions of farmers in Italy)*. He distributed a questionnaire to more than four thousand *medici condotti*, and he collected many data on the social situation and on farmers' hygienic-sanitary deficiencies. Thanks to this data, he was able to draft a health code system based on the principle that the State had the obligation to protect public health. Bertani would make his proposal to Agostino Depretis, Minister of the Interior of Italy, who had entrusted him with drafting the code. This State's obligation can be justified by the hygienist doctrine according to which first come prevention, then—if need be—action. For this reason, Bertani's code was entitled *Della Pubblica igiene (On the Public hygiene)* (Cosmacini, 2002, 23-24).
- 31 Bertani—member of the Italian Society of Hygiene—was a meeting point between the government and the innovative proposals of the hygienists from Milan. Francesco Crispi, successor to Depretis as Prime Minister, entrusted Luigi Pagliani—professor of Hygiene in Turin—with drafting the law. As a direct result, the Law n. 5489—also known as “Law on healthcare reform”—of 1888 on the tools to manage national healthcare was released. This reform was named after Francesco Crispi (who is considered the Bismarck of Italy) and Luigi Pagliani. Nevertheless, Crispi himself recognised the important role also played by Bertani.¹⁵
- 32 As far as social medicine was acknowledged as discipline—it kept on demanding more normative interventions.
- 33 Giuseppe Sormani—medical doctor and professor of Hygiene at the University of Pavia—studied the Nosological Geography of Italy (Sormani, 1881) and offered a taxonomy of diseases. His work illustrated the path medical statistics has embarked on in order to offer a disease distribution map to the nation. Sormani's analysis referred to Jean Ch. M. Boudin and his *Traité de géographie et de statistique médicales et des maladies endémiques (Treatise on the medical geography and statistics of the endemic diseases, 1857)*, as importance was given to health geography, a relevant discipline for the medical doctor, the hygienist and the administrator. Another important source of inspiration for the author was Francis A. Walter and his *Statistical Atlas of the United States based on the results of the Ninth Census 1870*, published in 1874.

- 34 A few years later, Enrico Raseri an Italian medical doctor and statisticians (who shall be mentioned later) wrote in his *Atlante di demografia e geografia medica d'Italia (Italian Atlas of medical demography and geography)* (1906) that: “infectious and epidemic diseases seem to be circumscribed and less and less dangerous. This means that hygienic good practices are spreading in every social class” (Raseri, 1906, 80).
- 35 A fundamental contribution to hygienists’ work came from statistics that was believed to ensure coherence in the concepts used to decode social and biological phenomena.
- 36 Hygienists’ opinions were supported and amplified by the extensive use made of statistics by national bureaucracies, scientists and laboratory technicians. Statistics was indeed required to run detailed social surveys and to find proper procedures for experimental research. This was a wide interdisciplinary field that included—within the same explanatory system—an increasing number of clinical trials, anthropometric taxonomy, the construction of averages and optimal curves, natality and mortality rates, and thoughts on normal individuals and criminals.¹⁶
- 37 Being more and more involved in legislative drafting, hygienists were led to believe that the State, among other obligations, had to actively run a population- and territory-based intervention. References and inspiration points gradually diverged from the simple measures of medical police that were initially implemented to face epidemics. Hygienists now promoted the construction of *ad hoc* technical bureaucracies to manage healthcare and hygiene.

3. Economists, Statisticians, and the Role of the State

3.1. The Contribution of the Lombard-Venetian School

- 38 It has already been mentioned that medical doctors, through their actions and thoughts, recognized the role of the State in protecting healthcare. This perspective was in line with the approach of a group of Italian economists, the so called “Lombard-Venetians” or “Academic Chair Socialists”, who played an important role in promoting the social legislation and statistical studies in Italy during the second half of the 19th century (Gozzi, 1989). It is from their reflections on the role of the State that the link between health protection and development emerged.
- 39 An important starting point in understanding the role played by economists in consolidating these principles is to be traced back to their specific approach to positivism.
- 40 According to these economists, “positivism” translates in a renewed methodology of enquiry, as well as a new way to understand one’s own role in connection with the transformations of the society (Bobbio, 1985, 12). They ask themselves How events evolve? rather than Why they happen? in a certain way. In order to demonstrate the “how”, they believe in the necessity of collecting those “facts” of economic and social life. Clearly, this approach could, generally speaking, imply a full subjugation to facts paired with the belief in a rigid determination of events and phenomena. This made them believing to be able to scientifically experiment human circumstances¹⁷ resulting, at the very edge, in the total elimination of any metaphysical and philosophical implication.¹⁸
- 41 In Italy, this temptation was tempered somehow by various academic-institutional circumstances of particular interest to us. Just at the time when the positivist

methodology was spreading, economics was set up as an academic discipline. Economists, thus, began to be listened within institutions as professionals and holders of a specific cultural formation. These are the years of “making the Italians” and who is called to carry out this duty feels “the trust or the hope that the technosciences [are] able to put Italy, unified with the recent annexation of the Veneto and Roma, at the same level with the top countries. In this new condition, it becomes important to create a political economy able to take shape according to technosciences, territorial enquiries and coherent normative provisions” (Macchioro, 1996, 10).

42 The first economist worth to be mentioned is Angelo Messedaglia. He had been Romagnosi’s student in Padua and would later teach political economy and statistics in Padua and Rome.¹⁹

43 He was well trained in French and German statistics, besides having many connections with other contemporary economists and statisticians (Favero, 2000b).

44 He asserts the scientific role of statistics, starting from the criticism of the deductive methodology in economic and social sciences. In his view, statistics are the more appropriate instrument to study social phenomena because it lets to adopt new methods to analyze and to interpret the changes occurring within the society. This kind of analysis is not an end in itself. Messedaglia strongly ties statistics to the domain of Science of Administration. By favoring a scientific approach, the Science of Administration, statistics let to acquire new scientific knowledge through the use of mathematics. Statistics must investigate and interpret the objective needs of the society:

it does not tell or describe us anything concerning the relative degree of well-being, morality or security enjoyed by the population; on the contrary it collects, brings order and records those data, those quantifiable relationships and those laws which, under the natural order of things, are clues of wealth and poorness, morality and vice, of the calm or troubled existence of a society (Messedaglia A., 1920, quoted in Favero, 2000b, 157).

45 That is how that administrative action can “scientifically” frame social transformations towards a regular, rational and harmonious development.

46 We may then cite one Messedaglia’s student, Luigi Luzzatti,²⁰ whose approach was clearly inspired by the social legislation of the British Parliament. He appreciated it because the social legislation seeks to improve the life conditions of the weaker members of the society by identifying both the problems to be addressed and the good actions to be introduced.²¹

47 Luigi Cossa’s work is also worth mentioning as he stated that freedom is the guiding principle of economic science.²² He referred to a freedom supported by forms of public intervention from a supplementary perspective (Cossa, 1871). He called for a social legislation in which the rights of the industrial class were protected.

The social authority’s direct interference—seeking to *fix a salary*, a *wage ceiling* or a *minimum wage*, or determine the number of *working hours* for *adult male workers*—causes an unfair disruption of economic relations. Also, it unnecessarily limits industrial freedom. On the contrary, laws seeking to limit *children*, *adolescents* and *women* work are to be praised. Indeed, when fairly and effectively implemented, they generate *hygienic*, *moral*, *intellectual* and *economic advantages* that are bigger than the disadvantages related to the restrictions to free competition. These laws tend also to bring the authority’s support to people who, for whatever reason, may need it—due to their vulnerability—they are at risk of being abused (Cossa, 1871, 95-96, italics in the original).

- 48 Fedele Lampertico²³ also offered some interesting points of reflection by analysing in depth the role of the State in relation to the development of social reality (Lampertico, 1874). Deeply influenced by Spencer's evolutionary theory, he investigated a pluralist-democratic model of society. This was the prerequisite for a structure in which the State was actively engaged to give proper answers to the new problems raised by the modern age civil coexistence, both in the economic and social fields (Chiecchi, 1977, 226-227).
- 49 Writing about labour force, he said that:
- only in a condition of freedom [it] is able to reach its total effectiveness. (...) Once the man has become the proper subject of the economic law, the vigour of his physical and intellectual forces can't be neglected any longer. The economist is no longer allowed to accept these forces with resignation—or in the name of some noble principles—because they become essential for ensuring economic prosperity (Lampertico, 1876, 253-254).
- 50 Angelo Messedaglia, Luigi Luzzatti, Luigi Cossa and Fedele Lampertico discussed about the weaknesses of the Italian civil society and the need for an active contribution of the State to its development (Romani, 1985; 1992). Taking direct inspiration from the German historical school of economics, they always tended to relate economic science to other disciplines, such as: sociology, law, geography, history. The school promoted research on applied statistics both in Italy and Germany.
- 51 They were also closely related to Luigi Bodio whose appointment as Director of the General Statistics of the Kingdom of Italy they would support. As stated by Bodio, economics “in order to expand its scope of application needs now to refer to (...) statistics and to demand more and better data from statistical analysis” (Bodio, 1869, 10). And he added: “[The] deep relationships between statistics and social economy [are] like those between means and goals, tools and effects” (Bodio, 1869, 16).

3.2. Statisticians at the Ministry of Agriculture, Industry and Commerce

3.2.1 The Directorate General for Statistics (DGS)

- 52 The first statistics office was opened at the Ministry for Agriculture, Industry and Commerce (MAIC, for its acronym in Italian) on October, 1861. It was meant to be a technical body of the MAIC itself, the most important economic ministry in Italy in the aftermath of the Unification. It was headed by Pietro Maestri (1816-1871) an Italian medical doctor and patriot of the *Risorgimento*. The office's name and its place in the organizational chart of the Italian bureaucracy changed during the years. However, it is generally referred to as Directorate General for Statistics (Giuva, Guercio, 1992; Marucco, 1996).
- 53 The Directorate developed statistics—as some other Italian Ministries do—, had a coordinating role, and was in charge of general summaries. During this stage, Italy paid attention to what was being done in Belgium (Dumoulin, 1982; Delpérée, 1994) and to the great prestige of Adolphe Quetelet, who was in stable relations with the Directors of the Italian Statistics.
- 54 Since the very beginning, the Directorate sought to support the economic policy while its internal Council was a kind of “Prince's advisor”. Between the 1860s and the 1870s, Fedele Lampertico, Luigi Luzzatti and Angelo Messedaglia became members of the Council of

Statistics, the Directorate's advisory body. As we have already stressed, these economists were personally engaged in political activity, immersed in the real problems of the Nation, and interested in creating its economic unity (Barucci, 1980, 70). According to them, statistics is a "modernization" tool that operates for "the art of governing" (Cardini, 1994, 23-24).

- 55 The Council not only coordinated and developed public statistics but also had a more extensive role to play. The Directorate's duties were not precisely defined by the public body. Indeed, the report accompanying the decree on the Directorate referred, only in general terms, to the similar Belgian Committee and to the Committee established to unify and reorganize statistics in the Germanic Empire. Taking such committees as example, the Directorate "should become that social facts court, that scientific and independent institution desired for a long time by distinguished representatives of statistics disciplines" (Gnesutta, 2000, 321).
- 56 In 1881, Luigi Bodio, the Director of Statistics who used to have regular confrontations with his economist colleagues, clearly explained the role of statistics in his report:
- The Government and the Parliament cannot be satisfied with partial and incomplete information; they have the obligation—as well as the required means—to examine facts in their entirety. It is not enough to adduce examples, events, and exceptions—statistics are required. Such statistics have to determine phenomena and give a quantitative expression of the means of actions that are used and of their effects (Bodio, 1882, 80)²⁴.
- 57 The Directorate was mainly focused on the development of industrial statistics, external trade, and on monetary and credit institutions. Beyond the identification of strictly related production phenomena, its work was focused on other fields, such as local finance, and charity and assistance, that sought to complete a framework on national conditions and development perspectives (Faucci, 1980).

3.2.2 Luigi Bodio and His International Network

- 58 After the death of the first Director, Luigi Bodio²⁵ was elected. His name was suggested by Luigi Luzzatti, the General Secretary of the MAIC. Under his guidance, the orientation of the Directorate was changed. His predecessor Pietro Maestri, as well as Melchiorre Gioia and Gian Domenico Romagnosi, saw statistics as a tool to disclose the political conditions of a State, while to Bodio statistics was a tool to understand social facts.²⁶
- 59 In 1867, Bodio dealt with the Statistics of the Population of the Kingdom of Italy, by analyzing the population surveys that were run during the first five years of the Italian Unification. In 1862 he started to work in the MAIC where his mentor was Cesare Correnti. Under Correnti's advice, Bodio went to Paris to improve his studies of Political Economy by attending H. Baudrillart's lessons at the Collège de France, and L. Wolowski's ones at the Conservatoire des Arts et Métiers.
- 60 In France he came in contact with Émile Levasseur—who held free lessons on Le Play's social survey method at the Collège de France—and the demographer Louis-Adolphe Bertillon who would become his true mentor (Soresina, 1996).
- 61 In this way, Bodio started to get in contact with the French science world and to collaborate with some social scientists and economists, such as: Arthur Chervin, Emile Cheyasson, Alfred De Foville, Paul Leroy-Beaulieu, and Yves Guyot (Soresina, 2001).

- 62 Bodio followed the studies of Quetelet—continued by Achille Guillard and Louis-Adolphe Bertillon—and said that the description of the human population and its social constraints was the main application field for statistics. The aim was to detect, through an inductive reasoning, the set of laws regulating the society by means of identifying the constants of the nature (Quetelet, 1835). In order to do that, phenomena investigations not only had to include the study of demographic phenomena—such as births, marriages, deaths, migrations—but also other elements—such as the production and consumption of goods, education, crime rate, religious beliefs. Non-measurable phenomena had to be excluded. For this reason, according to Quetelet, statistics was a “social physics” of large numbers that made it possible to identify general laws. Bodio endorsed this philosophy but was sceptical about the possibility of determining general laws. In his writings he sometimes focused on theoretical issues, and—writing about large numbers—he stated: “there is a rigorous coincidence between the results of an experiment and the expected results” (Bodio, 1869, 29).
- 63 In the 19th century all the main European countries opened their Central Office of Statistics. Some of the most known statisticians of this period—such as, Adolphe Quetelet and Ernst Engel—were also public officials. Adolphe and Jacques Bertillon were entrusted with creating and managing official departments of Statistics. Bodio was their Italian counterpart. By establishing these offices, statistics became an increasingly effective tool for addressing specifically the government’s needs. Public officials were more and more referred to as *commis d’Etat*. By creating committees in order to run specific surveys, statisticians linked together scientific and administrative skills. Statisticians coming from many different countries of the world, periodically gathered in international congresses in order to spread and share uniform classification and survey criteria. In this way, the national experiences of different countries could be compared.
- 64 In the early congresses, Adolphe Quetelet—President of the Central Commission of Statistics of Belgium—played a very important role, and Belgian statistics became a point of reference for other countries. Bodio and Quetelet wrote letters to each other, thus revealing the influence of the Belgian model on the organisation of the Italian statistics. Italy established a privileged relation with the Belgian experience (Julin, 1938; Dumoulin, 1982). Bodio²⁷ wrote letters to many people in order to establish and reconcile scientific relationships between international statisticians. He had influence on the admission or exclusion of new members in international organisations, and he definitely helped to determine the guidelines of the international statistical research.²⁸ He was both General Secretary (from 1885 to 1905) and President (from 1909 to 1920) of the International Statistical Institute.²⁹
- 65 Thanks to statistics, over a 50-year time period, Bodio contacted colleagues from across Europe and established strong relationships with demographers, economists, sociologists, and governments’ representatives. Since the mid-1860s, by participating—as head or member of delegations—into Congresses of Hygiene, Demography, and Statistics he became one of the main protagonists of statistics.
- 66 He was at the center of a local-and-global interactive network that he created, broadened and enlivened during the decades. This network encompassed public administration, politics, and the international scientific community of economists and social scientists.³⁰
- 67 Moreover, he also established relationships with: Ernst Engel and Adolph Heinrich Gottlieb Wagner from Germany; Karl Pearson, Francis Galton and William Farr from the

UK; Karl Czoernig, Bohemian; József Körösi from Hungary—Director of Statistics in Budapest—and with Anders Nicolai Kiaer—Director of statistics of Norway (Soresina, 1996; 2001; 2003; Favero, 2000a).

- 68 All these relationships were important in order to develop comparative statistics: the main goal of the congresses of statistics, which took place in the mid-19th century.

3.2.3 The “Statistics Factory”

- 69 Influenced by his colleague Messedaglia, Bodio also tended to believe that demography was purely descriptive while it was up to another science (political economy, according to Bodio) to explain phenomena.

If political economy (...) seeks to expand in the field of application, it has to take advantage of the experience of new—or reconfirmed—facts and to boost surveys of facts. Mutually, statistics is more confident and skilled in running researches when it can count on proven economic truths (Bodio, 1869, 42).

- 70 According to the above sentence, Bodio was aware that statistics was at the service of the politics’ needs. Nevertheless, he advocated for its autonomy in the research method and work organization. During more than 25 years (up to 1898), Bodio worked in the Directorate where—together with a close group of important scientific collaborators who had wide power of delegation—he achieved very important results. This element was fundamental in order to outline and give identity to the official statistics of Italy. Bodio’s years as President of the Directorate (1872-1898) are referred to as the Golden Age of the Italian Statistics. During his office term, official statistics extended its own analysis and surveys in many fields, improved both methods and graphics, developed more specialized publications, and, above all, became aware of the need of coordination with other countries’ statistics. All this was made possible thanks to Bodio’s collaborators: a group of people who he personally chose depending on their résumés and projects. In the group there were future Presidents of the Directorate, Ministries and Governors of the Bank of Italy, and university professors of Economics, Statistics and Finance Science,³¹ among the others. The office not only offered surveys but also methods on social statistics. Some useful tools—like stereograms—to use probability calculus to study statistical phenomena were created, synthetic indexes of the economic movement were developed, and the role of statistics in agriculture was updated. In the office some foreign scientists were working as special officers of statistics, too. E. Wurzburger, I. Blumel, R. Salinger, C. Mischler, W. Sombart among the others (Marucco, 1996).
- 71 Rodolfo Benini, an important statistician, referred to this group as a “statistics factory” whose members were carefully selected and whose duties were separated, in order to develop qualifications and increase particular sectors in the Directorate.

4. Healthcare in the Directorate General for Statistics

4.1. Cesare Correnti’s Program and Enrico Raseri’s Analyses

- 72 In the Directorate, Statistics on Assistance and Charity were developed according to a program delegated to Italy by the International Congresses of The Hague (1869) and Saint Petersburg (1872). The program “seeks to collect and organize comparative information on public health coming from all the civilised countries” (Correnti, 1874, 231). In 1873

Cesare Correnti was entrusted with drafting a program of work (Correnti, 1874). For this reason, he identified different fields of intervention: to benefit childhood (kindergartens, children hospitals, orphanages, ...); to offer educational support to adolescents (primary schools, education subsidies, protection of working adolescents, gyms, homes for deaf-mute and blind people); to help adults (hospitals for invalid people and soldiers, and for people with chronic illnesses, as well as, at-home support services—such as, medicine distribution and *condotte mediche*).

- 73 According to Correnti, there were many reasons why to strengthen public health, such as: to protect the order and decency (Correnti, 1874, 231), to preserve and restore productive forces and the social activity (Gnesutta, 2000, 347), and to be compassionate towards other people. Therefore, public health had to be strengthened for reasons of social need, utility, and solidarity.
- 74 Correnti refused theories based on theoretical economic considerations stating that charity was disturbing for the economy as if it was a “supernatural force, a sort of *deus ex machina*, that intercepts the competition and disrupts the logical sequence of the events. According to the pure economic law, people who do not think or look after their own interests on time are destined to be relentlessly beaten” (Correnti, 1874, 239-240).
- 75 On the contrary, in his opinion it is better to intervene to avoid social tensions and imbalances related to economic processes.
- 76 For the first time since the Italian Unification, an issue delineating some measures of public Welfare was being raised. It also took into account all the measures-related problems, their extension, and the actors to put them in practice.
- 77 The guidelines on healthcare given by the Directorate and its Council were put in practice by Enrico Raseri,³² a medical doctor and demographer. He was appointed inspector of Demography and Health Statistics by Bodio, and he would head this office up until his premature death.³³ In 1878, Bodio participated in the first Congress of Hygiene and Demography in Paris together with Raseri whom he entrusted with compiling a report for the *Annali di Statistica (Annals of Statistics)* in 1879. He participated into the Congress after spending a long period of time studying what had been done on mortality and alcoholism. He kept working on population, hygiene, and healthcare and he participated—together with Bodio—in the meetings of Geneva (1882) and Budapest (1894). Since 1880, he was the Italian government’s representative in national and international Congresses of Hygiene.
- ³⁴
- 78 With Enrico Raseri, a project of hospital statistics—both from a nosological and administrative point of view—was started and accomplished, following the example of other European countries (Raseri 1883). He was the editor of the volumes *Movimento degli infermi negli ospedali civili del Regno (Sicks’ movement in the Kingdom’s civilian hospitals)* that were published every year between 1883 and 1888. Raseri undertook all the main statistical studies of the Directorate on population, healthcare and public assistance. He worked on: the population census of 1881 and 1901; the 1885 statistic on hygiene and sanitary conditions in the Kingdom’s municipalities, and on the data on demographic, administrative and building conditions of some Italian and foreign cities. Such data were first collected in 1888, then updated in 1901 (Bodio, 1911, 2). He studied the distribution of population on a national scale, migrations, and child and infant mortality.

- 79 In 1906, Raseri published the already mentioned *Atlante di demografia e geografia medica d'Italia* where he studied mortality by implementing in Italy Lexis and Person's methods (Bodio, 1911, 2).
- 80 His study linked with others of health geography that were undertaken in Italy based on the model that was simultaneously being diffused in Europe. The main drive came from Jean Boudin, who was interested in the issues of hygiene and epidemiology when applied to war problems and colonial expansion. Some Italians such as Giuseppe Sormani (1881) and Cesare Lombroso (1865) were interested in the same issues, too. Sormani and Lombroso's analysis were tightly related to statistics that was considered to be an auxiliary science of medicine. In 1906, their work was joined by Enrico Raseri's *Atlante di demografia e geografia medica d'Italia*, one of the most important works on the issue. In Raseri's *Atlas*, 78 tables tried to describe in an effective and immediate way the different factors of demography, morbidity, and mortality which were taken into consideration. The *Atlas* was aimed at health officers, and the author used statistical methods such as, linear and areal diagrams, and cartograms deriving from applying statistical diagrams to maps.

4.2. Healthcare in the *Annali di Statistica* (Annals of Statistics)

- 81 As far as the Directorate's measures on healthcare were concerned, this paper drew from the *Annali di Statistica* periodically published by the Directorate, among other sources. The *Annali* reflected the Golden Age (from 1878 to 1898, under Bodio's presidency) of Statistics Administration.
- 82 For the members of the Directorate's factory, the *Annali* were the perfect training ground to confront themselves with other countries' applied statistics results. They became aware of International Congresses' rising trends, and they formulated hypotheses, proposals and projects.³⁵
- 83 Articles on health activities—even though they were limited and not systematically collected—created a new multi-value subject case. Indeed, they calculated state healthcare assistance mainly for the poorest classes; they made it possible to control care quality; and they completed the data collected on mortality with an indicator (even if an indirect one) of disease incidence.
- 84 The first series of the *Annali*—ten volumes published between 1871-1877—was focused on the scientific debate on causes-of-death survey results.
- 85 The classification of the causes of death was of the uttermost importance for statisticians in the mid-19th century. The issue was dealt with during the first International Congress of Statistics (Brussels, 1853), where some representatives of the Italian pre-Unification states³⁶ participated, too.
- 86 In 1855, in Paris, William Farr and Marc d'Espine's proposals were examined, and Farr's list of 139-causes of death was chosen (Geddes da Filicaia, 2000, 182).
- 87 Since 1875, a Committee for Causes of Death Statistics has operated in Italy, with the duty of compiling an annual municipal register of causes of death. The Committee—whose works were reported in the *Annali*—was made up of medical doctors and statisticians.³⁷ It analysed the organisation of general mortality statistics in different European countries and in the United States. It identified Sweden, Norway and the UK as the most advanced countries and hoped for Italy to be able to close the gap with them soon. Sormani

- compiled a report on fundamental criteria to classify the causes of death. He would also play a very important role in developing statistics on causes of death (Sormani, 1875).
- 88 Surveys on mortality were always compared to weather conditions. Such comparison was supposed to unveil useful information to eradicate epidemics and fight their causes. Still, there was a lack of adequate capacity and willpower in the Government, as far as reforms were involved. Nevertheless, surveys were started and the studies that were made in Italy on the causes of death were attested in the *Annali di Statistica*.
- 89 In the following years, in the *Annali di Statistica*'s second (1878-1881) and third (1882-1885) series, some relevant studies on healthcare and, especially, on hygiene and health conditions in Italy were reported.
- 90 It is also worth mentioning Ruggero Bandarin's *Influenza dei prezzi sulla mortalità (Prices' influence on mortality)*, a summary of Bela Weisz's book (Jena, 1880). The work was focused on the link between the economic situation and mortality (Bandarin, 1880).³⁸
- 91 Other articles published in the *Annali* were also important for information on the health conditions of the Italians at the end of the 19th century. Such contributions dealt with public order-related issues, which had to be calculated in order to run statistical surveys on them.
- 92 It is worth remembering Luigi Bodio and medical doctor Cesare Lombroso's works. The latter, wrote about pellagra in Italy (Lombroso 1877) and in the province of Mantua (Lombroso 1878). Bodio wrote a substantial report on the 1871 *Censimento della popolazione per professioni (Population census by profession)* (Bodio, 1877) and then compared 1861 and 1871 census data on the prevalence of blindness, deaf-muteness, mental retardation, and cretinism in Italy (Bodio, 1883). He compared Italian data with other European countries' ones, and he ran some analysis to assess the number of people living with these conditions according to where they live, their religious, gender, and job.
- 93 Enrico Raseri wrote about childhood problems in his article "*I fanciulli illegittimi e gli esposti in Italia*" (Illegitimate and abandoned children in Italy) (Raseri, 1881).³⁹
- 94 In these years, Andrea Verga developed two studies: *Censimento dei pazzi che trovansi ricoverati nei manicomi e d'ospitali d'Italia l'ultimo giorno dell'anno 1880* (Census of mentally diseased people hospitalized in the Italian asylums and hospitals on the last day of 1880) in 1882 (Verga 1882), and *Delle forme frenopatiche nelle classi agiate* (About frenetic forms in the wealthy classes) published in 1883 (Verga, 1883).
- 95 These studies—useful to analyze Italian people's health status—were integrated with studies identifying the number of health workers, and with proposals for collecting data on hospitals' activities.
- 96 At this regard, it is worth mentioning Raseri's contribution *Il personale sanitario in Italia e all'estero. Studio statistico comparativo* (Health personnel in Italy and abroad. Statistical comparative study) (Raseri, 1878). The article examined the national distribution of medical doctors, surgeons, dentists, phlebotomists, midwives, and veterinaries in comparison with other countries. Their distribution changed between county seats—where most people lived—and municipalities. Traditional phlebotomists were still present in the less developed areas of Italy.
- 97 Observations on statistics in France, Germany, the UK, Austria, Hungary, Belgium, Switzerland and the US were useful to draw a comparative framework on the presence of healthcare workers in these countries.

- 98 Italy had a good healthcare-worker-to-population ratio, with 6.1 medical doctors for every 10 thousand citizens. Nevertheless, their regional distribution was far from being regular.
- 99 Italian healthcare-worker-to-population (for every 10 thousand citizens) ratio was compared with those of France, Germany, Austria-Hungary, Switzerland, Belgium, the UK, Ireland, and the US.
- 100 In 1882, Raseri published another essay focused on healthcare workers *Le condotte mediche in Italia (Medical districts in Italy)* (Raseri 1882) for the International Congress of Hygiene and Demography in Geneva of September, 1882.
- 101 In an atmosphere of social commitment and positivism, one of the *Annali's* issues was dedicated to the Acts of the International Congress of Charity in Milan (*Annali di Statistica*, vol. II, n. 14, 1882). Readers' attention was drawn on Alfonso Corradi's Report on different forms of assistance. According to him, at-home assistance was to be preferred because "people get sick in very different ways that ask for different treatments ... therefore, it is not convenient for people to be hospitalised in one place, where the same rules and treatments are applied to everybody". The informed consent practice was developed.
- To protect the individual freedom, some informed consent measures have to be increased or introduced in or outside hospitals. Such measures aim at getting permission before conducting a dangerous healthcare intervention on a person. When an individual is considered unable to, another person is authorised to give consent on his behalf". Corradi cared also about the importance of hospital's reputation and hoped for compulsory statistics to be compiled for every hospital "thus, giving more guarantees to patients on the hospital's status (Corradi, 1882).
- 102 Later on, this proposal would also be mentioned by Enrico Raseri in the Superior Council of Statistics in 1882 (Raseri, 1883). He introduced the *Programma della statistica negli ospedali (Hospitals' Statistics Programme)* where all the other countries' initiatives for publishing hospital statistics were reported. In Italy, such initiatives were still sporadic and limited only to some hospitals. But statistics were believed to be important both from administrative and data analysis purposes.
- 103 Corradi and Raseri therefore started an overall reflection on healthcare organisation and made a series of innovative proposals which referred to a more advanced Italian culture. Such culture was indeed more open towards international debates from a healthcare, social and political point of view.

5. Conclusion

- 104 In 1861—when Italian Unification took place—Italian life expectancy at birth was of 30 years. Italians would live on average ten years less than French people, and 16-17 years less than Swedish people. This gap was bigger than the one existing in terms of GDP per capita. According to Maddison's data, in 1861 Sweden was poorer than Italy, but its life expectancy was 16-17 years higher than Italy's one (Atella, Francisci, Vecchi, 2011, 167).
- 105 In 1913, on the eve of WWI, life expectancy in Italy was of 47 years. This extension in life expectancy—one of the most important achievements of Italy—was due to economic development (and the resulting improvement in eating habits); advances of medicine (such as, new preventive measures and treatments); improvements in public health structures; advances of hygiene practices; better education, and a better environment

(Riley, 2001; Atella, Francisci, and Vecchi, 2011). To recreate a nosological framework was of the uttermost importance, in order to: reveal the causes leading to an increase in Italians' expectancy of life, and to identify when and which people benefited from advances of healthcare.

- 106 In Italy, the creation of uniform statistics—that included healthcare statistics, too—played a fundamental role in the national building process. A process started in the Italian *Risorgimento*, and continued after the Italian Unification by political, administrative classes (Romanelli, 1980). For this reason, it is important to recreate the internal transitions and debates that gave origin to Italian statistics, and to its objects of investigation (Favero, 1999, 7). Statistics plays a fundamental role especially in identifying healthcare policy issues with regard to the social and economic development of the country. But, as a recent review of studies shows, this issue has not yet been specifically studied by historians of economic doctrines (Soresina, 2015).
- 107 A Directorate General for Statistics' archive doesn't exist. Therefore, important sources of information are: publications edited by the Directorate; Directorate's member personal archives; and epistolary exchanges that—when compared with official sources—offer an alternative and integrated interpretation of statistics issues (Patriarca, 1996).
- 108 The link between statisticians and medical doctors was of the uttermost importance, as medical doctors were often also statisticians, such as Enrico Raseri. Writing about the relationship between statistics and geography in 1881, Sormani said:
- Health geography is a branch of and cannot exist without medical statistics. Statistics is a discipline that has developed many sciences—natural, social, and moral sciences—and has contributed to creating new ones—such as, demography or demology. ... It has led to medicine, and—above all—to public hygiene, two new survey tools to discover new truths, and to favor the advance of science. The same happens when a microscope or chemistry are applied” (Sormani, 1881).⁴⁰
- 109 The role of Lombard-Venetians economists is not to be underestimated. It was them to start the debate around methodology in political economy, a debate that was meant to exert substantial influence over economic policy's decisions in the liberal Italy. They carried out a work of awareness and reception of theories that were emerging in foreign countries. This work became, as well, the channel to introduce, in post-unitary Italy, the statistical techniques providing all the necessary factual elements to analyze and interpret economic and social facts.
- 110 The comparability and the homogeneity of statistical methods, so intensely sought after by the General Direction of Statics under Luigi Bodio presidency, is considered as an integrating part of a process which requires the homogeneity of both administrative and normative action.
- 111 As stated by Messedaglia, these homogeneities are essentials to provide cohesion “for a country like ours, with so many social differences and where the recent political unity is not followed by a similar unity in economics and moral” (Messedaglia, 1908, 106).
- 112 Thus, the process of creation of devices, procedures and tools for quantitative analysis of social data started to emerge. This was also the result of political and scientific relationships, and of interrupted projects that offered interesting starting points for further future developments.

- 113 In addition to that—and thanks to Bodio’s contribution—the international dimension and perspective of statistics were a key factor in creating a language that could be used by States and scientists to communicate.
- 114 It is not surprising that the *Annali di Statistica* lacks in continuity when dealing with health-related issues. It certainly reflects the different importance given to healthcare topics in different periods of time by a central institution that was entrusted with the statistics on all these subjects. Therefore, the government’s program and the Institute collaborators’ specialised approach (especially that of those working for the *Annali*) were definitely relevant. Some healthcare-related issues were also dealt with direct surveys of the Government or the Ministry of the Interior, or through parliamentary surveys that were independent from the Central Directorate for Statistics.⁴¹
- 115 The little relevance given in the *Annali di Statistica* to the issue, even if not wide, became much more important when we link it to the Directorate’s interest for the relationship between statistics—a new discipline—and social medicine. Statistics was seen as at the service of the new unitary State, and was given a fundamental role in identifying the necessary fields of intervention, and determining the State’s action. Social medicine set the guidelines to be followed by the State in order both to protect population health and to achieve economic progress.

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BIBLIOGRAPHY

- Arcucci E. 1937. Enrico Raseri. In Istat (ed.), *Decennale, 1926-1936*. Roma: Istituto Centrale di Statistica del Regno d’Italia, 111-115.
- Atella, Vincenzo, Silvia Francisci and Giovanni Vecchi. 2011. La salute degli italiani 1861-2011. *Politiche sanitarie*, 12(4): 165-189.
- Bandarin, Ruggero. 1880. Dell’influenza dei prezzi sulla mortalità I von Bela Weisz. *Annali di Statistica*, II(16): 114-137.
- Bertani, Luigi. 1937. Luigi Bodio. In Istat, *Decennale, 1926-1936*. Roma: Istituto Centrale di Statistica del Regno d’Italia, 91-99.
- Bobbio N. 1985. *Prefazione*. In Emilio R. Papa (ed.), *Il positivismo e la cultura italiana*. Milano: Angeli, 11-14.
- Bodio, Luigi. 1867. *Sui documenti statistici del Regno d’Italia. Cenni bibliografici presentati al VI Congresso internazionale di statistica*. Firenze: Barbera.
- Bodio, Luigi. 1869. *Della Statistica nei suoi rapporti coll’Economia politica e colle altre scienze affini*. Milano: Treves.

- Bodio, Luigi. 1877. Censimento della popolazione per professioni del 1871. *Annali di Statistica*, I (10): 41-76.
- Bodio, Luigi. 1880. Sulla statistica dei matrimoni civili e religiosi. *Annali di Statistica*, II(15): 281-288.
- Bodio, Luigi. 1882. Statistica delle fondazioni di beneficenza in Italia, in Atti del Congresso internazionale di beneficenza di Milano: sessione del 1880. *Annali di Statistica*, II(14): 207-224.
- Bodio, Luigi. 1883. Sulla diffusione della cecità, del sordomutismo, dell'idiozia e del cretinismo in Italia. *Annali di Statistica*, III(7): 224-248
- Bertillon, Jacques. 1893. Trois projets de nomenclature des maladies. Causes de décès, causes d'incapacité de travail. *Bulletin de l'Institut International de Statistique*, tome VIII.
- Caracciolo, Alberto. 1973. *L'inchiesta agraria Jacini*. Torino: Einaudi.
- Cardini Antonio. 1994. Gli economisti e la statistica tra Italia liberale e fascismo. *Studi e informazioni*, XVII: 23-34.
- Chiecchi, Silvio. 1977. Stato moderno e società civile nella dottrina del Lampertico. In Roberto Finzi (ed.), *Il ruolo dello Stato nel pensiero degli economisti*. Bologna: il Mulino, 211-227.
- Clay, Karen, Ethan Schmick and Werner Troesken. 2017. The Rise and Fall of Pellagra in the American South. *NBER Working Paper*, (23730). Available at <http://www.nber.org/papers/w23730>.
- Conti, Fulvio, Anna Maria Isastia and Fiorenza Tarozzi. 1998. *La morte laica. I. Storia della cremazione in Italia (1880-1920)*. Torino: Scriptorium.
- Corradi, Alfonso. 1882. Beneficenza ospedaliera e sanitaria, Atti del Congresso internazionale di beneficenza di Milano: sessione del 1882. *Annali di Statistica*, II(14): 53-103.
- Correnti, Cesare. 1874. Programma di una statistica internazionale dell'assistenza pubblica e beneficenza. *Annali di Statistica*, I(5): 231-257.
- Cossa, Luigi. [1871] 1878. Lettera al Professore Emilio Nazzani sul Sunto di economia politica. In Luigi Cossa. *Saggi di economia politica*. Milano: Hoepli.
- Cosmacini, Giorgio. 2002. *Milano capitale sanitaria. Modelli ideali, organizzativi, assistenziali, scientifici (1881-1950)*. Firenze: Le Monnier.
- D'Autilia, Maria Letizia and Melis Guido. 2000. *L'amministrazione della statistica ufficiale*. In Istat (ed.). *Statistica ufficiale e storia d'Italia: gli "Annali di statistica" dal 1871 al 1997*. *Annali di statistica*, X(21): 19-116.
- Della Peruta, Franco. 1980. Sanità pubblica e legislazione sanitaria dall'Unità a Crispi. *Studi storici*, 21(4): 713-759.
- Delpérée, Francis. 1994. Luigi Luzzatti et le système constitutionnel belge. In Pierluigi Ballini and Paolo Pecorari (eds), *Luigi Luzzatti e il suo tempo*. Venezia: Istituto Veneto di Scienze, Lettere ed Arti, 129-143.
- Dumoulin, Michel. 1982. Hommes et cultures dans les relations Italo-Belges (1861-1915). *Bullettin de l'Institut historique belge de Rome*, 52: 271-567.
- Fauci, Riccardo. 1980. La cultura economica dopo l'Unità. In Massimo Finio (ed.), *Il pensiero economico italiano, 1850-1950*. Bologna: Cappelli, 51-65.
- Favero, Giovanni (ed.). 1999. Lo statistico e l'industriale. Carteggio tra Luigi Bodio e Alessandro Rossi (1869-1897). *Annali di Statistica*, X(19): 1-261.

- Favero, Giovanni. 2000a. Quadro sinottico dell'evoluzione degli Annali di statistica. In Istat (ed.), *Statistica ufficiale e storia d'Italia: gli "Annali di statistica" dal 1871 al 1997*, *Annali di statistica*, X (21): 303-309.
- Favero, Giovanni. 2000b. Angelo Messedaglia: la statistica tra scienza della popolazione e scienza dell'amministrazione. *Popolazione e Storia*. 151-176.
- Ferraris, Carlo Francesco. 1877. La statistica e la scienza dell'amministrazione nelle facoltà giuridiche. *Giornale degli economisti*, I(5): 225-252, 333-365, 433-461, and I(6): 1-29.
- Finzi, Roberto. 1982. Quando e perché fu sconfitta la pellagra in Italia. In Maria Luisa Betri and Ada Gigli Marchetti (eds), *Salute e classi lavoratrici in Italia dall'Unità al fascismo*. Milano: Franco Angeli, 391-429.
- Geddes da Filicaia, Marco. 2000. Le statistiche sulla salute: dalla "normalità ai servizi". In Istat (ed.), *Statistica ufficiale e storia d'Italia: gli "Annali di statistica" dal 1871 al 1997*, *Annali di statistica*, X(21): 176-198.
- Ginnaio, Monica. 2011. Pellagra in Late Nineteenth Century Italy: Effects of a Deficiency Disease. *Population-E*, 66(3-4): 583-610.
- Giuva, Linda and Maria Guercio. 1992. I Ministeri economici. In Guido Melis (ed.), *L'amministrazione centrale dall'Unità alla Repubblica: le strutture e i dirigenti*. Bologna: il Mulino, vol. 3, 147-158.
- Gnesutta, Claudio. 2000. Prospettive di sviluppo nazionale e rappresentazione della realtà economica negli Annali di Statistica. In Istat (ed.), *Statistica ufficiale e storia d'Italia: gli "Annali di statistica" dal 1871 al 1997*, *Annali di statistica*, X(21): 309-419.
- Gozzi, Gustavo. 1989. Ideologia liberale e politica sociale: il socialismo della cattedra in Italia. In Pierangelo Schiera and Friedrik Tenbruck (eds), *Gustav Schmoller e il suo tempo*. Bologna: il Mulino.
- Jacini, Stefano. [1884] 1976. *I risultati dell'inchiesta agraria*. Torino: Einaudi.
- Julin, Armand. 1938. Luigi Bodio et Adolphe Quetelet. Extraits de leur correspondance (1868-1874). *Revue de l'Institut International de statistique*, VI(I): 1-24, VI(II): 195-218.
- Lampertico, Fedele. 1874. *Economia dei popoli e degli Stati*. Milano: Treves.
- Lampertico, Fedele. 1876. *Il lavoro*. Milano: Treves.
- Lombroso, Cesare. 1877. Sulla statistica della pellagra in Italia: memoria presentata alla Giunta centrale di statistica. *Annali di Statistica*, I(10): 105-116.
- Lombroso, Cesare. 1878. Della pellagra nella provincia di Mantova. *Annali di Statistica*, II (1): 124-135.
- Livi-Bacci, Massimo. 1986. Fertility, nutrition and pellagra. Italy during the vital devolution. *Journal of Interdisciplinary History*, 16(3): 431-454.
- Macchioro, Aurelio. 1996. Per una storia dell'economia politica italiana nell'età del positivismo. Abbozzi. *Il pensiero economico italiano*, IV(1): 7-70.
- Marucco, Dora. 1996. *L'amministrazione statistica nell'Italia unita*. Bari: Laterza.
- McKeown, Thomas. 1976. *The Modern Rise of Population*. London: Arnold.
- McKeown, Thomas. 1978. Fertility, Mortality and Causes for Death. *Population studies*, 32(3): 535-542.
- McKeown, Thomas. 1979. *The Role of Medicine*. Oxford: Basil Blackwell.

- McKeown, Thomas. 1988. *The Origins of Human Disease*. Oxford: Basil Blackwell.
- Messedaglia, Angelo. 1908. La statistica della criminalità. Prolusione al corso di statistica presso la regia università di Roma il 15 gennaio 1879. *Biblioteca dell'economista*, vol. 19. Torino: Utet, 95-138.
- Panizza, Mario (ed.). 1890. *Risultati dell'inchiesta istituita da Agostino Bertani sulle condizioni sanitarie dei lavoratori della terra in Italia*. Roma: Stab. Tip. Italiano.
- Park, Youngmee K., Christopher T. Sempos, Curtis N. Barton, John E. Vanderveen, and Elizabeth A. Yetley. 2000. Effectiveness of Food Fortification in the United States: The Case of Pellagra. *American Journal of Public Health*, 90(5): 727-738.
- Patriarca, Silvana. 1996. *Numbers and Nationhood. Writing Statistics in Nineteenth-Century Italy*. Cambridge: Cambridge University Press.
- Pecorari, Paolo. 1986. *Economia e riformismo nell'Italia liberale. Studi su Giuseppe Toniolo e Luigi Luzzatti*. Milano: Jaka Book.
- Poh Seng, You. 1977. Historical Survey of the Development of Sampling Theory and Practice. In Maurice Kendall and Robin L. Plackett (eds), *Studies in the History of Statistics and Probability*, vol. 2. London: Griffin, 440-457.
- Quetelet, Adolphe. 1835. *Sur l'homme et le développement des ses facultés, ou essai de physique sociale*. 2 vols. Paris: Bachelier.
- Raseri, Enrico. 1878. Il personale sanitario in Italia e all'estero. *Annali di Statistica*, II(2): 171-207.
- Raseri, Enrico. 1881. I fanciulli illegittimi e gli esposti in Italia. *Annali di Statistica*, II(19): 1-26.
- Raseri, Enrico. 1882. *Le condotte mediche in Italia*. *Annali di Statistica*, III(1): 115-136.
- Raseri, Enrico. 1883. Relazione sul programma della statistica degli ospedali. *Annali di Statistica*, III(7): 123-130.
- Raseri, Enrico. 1884. Dei provvedimenti a favore dell'infanzia abbandonata in Italia ed in alcuni altri stati d'Europa. *Annali di Statistica*, III(12): 215-311.
- Romani, Roberto. 1985. L'anglofilia degli economisti lombardo-veneti. *Venetica*, 4: 5-27.
- Romani, Roberto. 1992. Romagnosi, Messedaglia e la scuola lombardo veneta: la costruzione di un sapere sociale. In Renato Camurri (ed.), *La scienza moderata: Fedele Lampertico e l'Italia liberale*. Milano: Franco Angeli, 177-210.
- Riley, James C. 2001. *Rising Life Expectancy: A Global History*. Cambridge: Cambridge University Press.
- Rossi, Lauro. 1982. Appunti per una storia della malaria nell'agro romano nella seconda metà dell'Ottocento. In Maria Luisa Betri and Ada Gigli Marchetti (eds), *Salute e classi lavoratrici in Italia dall'Unità al fascismo*. Milano: Franco Angeli, 227-253.
- Seligman, Ben B. 1969. The Impact of Positivism on Economic Thought. *History of political economy*, I(2): 256-278.
- Soresina, Marco. 1996. La corrispondenza dei demografi francesi Louis-Adolphe e Jacques Bertillon con Luigi Bodio. *Storia in Lombardia*, 1: 63-139.
- Soresina, Marco. 1998. *I medici tra Stato e società. Studi su professione medica e sanità pubblica tra Ottocento e Novecento*. Milano: Franco Angeli.

- Soresina, Marco. 2001. *Conoscere per amministrare: Luigi Bodio. Statistica, economia e pubblica amministrazione*. Milano: Franco Angeli.
- Soresina, Marco. 2015. Sanità pubblica (all. C). In ISAP. L'Unificazione amministrativa (Legge 20 marzo 1865, n. 2248) e l'evoluzione post-unitaria. *Storia Amministrazione Costituzione*, 23 (2015): 179-224.
- Sormani, Giuseppe. 1875. Criteri fondamentali per una classificazione delle cause di morte. *Annali di Statistica*, I(6): 74-76.
- Sormani, Giuseppe. 1881. Statistica delle cause di morte nel comune di Roma durante il quinquennio 1874-1878. *Annali di Statistica*, II(22): 21-57.
- Vecchi, Giovanni and Michela Coppola. 2003. Nutrizione e povertà in Italia, 1861-1911. *Rivista di storia economica*, 19(3): 383-401.
- Verga, Andrea. 1882. Censimento dei pazzi che trovansi ricoverati nei manicomi ed ospitali d'Italia l'ultimo giorno dell'anno 1880. *Annali di Statistica*, III(1): 147-183.
- Verga, Andrea. 1883. Delle forme frenopatiche nelle classi agiate. *Annali di Statistica*, III(8): 99-118.
- Westgaard, Harald. 1932. *Contributions to the History of Statistics*. London: P.S. King and Son.

NOTES

1. *Condotta medica* is a district where a medical doctor—paid directly by a municipality to assist poor person—acts.
2. *Risorgimento* (resurgence) is a term that indicates the political and social movement that in the 19th century led to the unification of the different states of the Italian peninsula into a single state: The Kingdom of Italy.
3. Further discussed in section 5.
4. In 1910, a National Maternity Fund was established, a way to further increase public accountability for labor force's reproduction.
5. In this regard, it could be useful to take into account also: draft laws; parliamentary debates; as well as, debates taking place in science associations and intermediate bodies—such as, for example, medical associations, white-collar trade unions, the workers' movement, and part of the industry's ruling class.
6. I owe the term “healthcare conscience” (*coscienza sanitaria*) to Soresina (1998).
7. At the beginning of the century, Johann Peter Frank's 1784 work (*System Einer Vollstandigen Medicinischen Polizey; System of a complete medical police*) was translated into Italian (*Sistema completo di polizia medica*, Milano, 1807-1808, 9 volumes). Frank believed densely populated countries to be prosperous and powerful and that it was in the national interest to foster population growth and to reduce mortality rates. State's intervention was fundamental in order to apply proper policies.
8. All these measures resulted in a sharp decrease in the mortality rate. This happened long before the discovery of the first antibiotic (streptomycin), available in Italy since 1947. At this regard, it is interesting to analyze McKeown's work on the history of health and healthcare in Great Britain where he shows that declines in the number of death preceded important medical breakthroughs (McKeown, 1976; 1978; 1979; 1988).
9. Some significant achievements would already be reached in 1911, when a reduction up to 10 deaths for every 100,000 citizens per year would be recorded.
10. Pellagra is a nutritional deficiency disease linked to a deficit in vitamin B3 (niacin) also known as vitamin PP (for *Pellagra Preventis*), that affected poor populations whose diet consisted

almost exclusively of maize (corn) for prolonged periods. Thanks to Ginnaio we have this interesting description of the origin of the term: “At first called ‘sunburn’, ‘hot liver’ since the first observers thought it was a liver disorder, ‘the boss’s sickness’, i.e. caused by the boss, or ‘the red sickness’, the disease finally acquired the name ‘pellagra’ in the first decades of the nineteenth century”. The name is from Bergamo dialect—*pel* (skin) and *agra* (sour, rough, sour or acidic-smelling)—and was never replaced by a scientific term” (Ginnaio, 2011, 585).

11. Vecchi, Coppola (2003) and Livi-Bacci (1986). The same evidence are shared with respect to American cases, see Park, Sempos, Barton, Vanderveen, Yetley (2000) and Clay, Schmick, Troesken (2017).

12. See *Progetto di regolamento edilizio della città di Milano (Project of the building code of the city of Milan)* (Crivelli, Milano, 1885) a joint project of the Italian College of Engineers and Architects and the Italian Royal Society of Hygiene (Cosmacini, 2002, 12-13).

13. Then, the very delicate issue of the handling of the dead body would be dealt with. In 1876, Gaetano Pini would found in Milan the first Italian “Cremation Society” in order to spread knowledge on this sanitary and viable method for body disposal. Then, in 1886 the Holy See would run a campaign against cremation and would excommunicate Catholics who practice it. (Conti, Isastia, Tarozzi, 1998).

14. Medical doctor who graduated at Pavia, in line with Cattaneo and Mazzini’s arguments. He participated in the Five Days of Milan, the Roman Republic (19th century), and the Expedition of the Thousand.

15. In a speech in his home town of Palermo on the 14th October, 1889 he said: “The Healthcare Code has become a national law. The fundamental concepts it contains will be one of the reasons—but not the only one—for which future generations of Italians will care about and remind of Agostino Bertani’s memory. He was a soldier of the science, the homeland and the freedom” (Cosmacini, 2002, 28).

16. It is worth mentioning that in 1882 the International Congresses of Hygiene were renamed International Congresses of Hygiene and Demography, thus underlining the importance given to statistics in the hygienist culture.

17. In Comte’s view, there exist the belief that every human social discomfort can be treated through the “method” of science. This could be seen as a sort of scientism.

18. To highlight how frequently the fact that economic laws also operates through human beings, creating inter-subjectivity problems, is decoupled from the positivist perspective, Seligman talks about the “use of mental bulldozers, leaving the intellectual landscape quite barren. To remove a few trees that obscured their view, positivist frequently levelled entire forest” (Seligman, 1969, 259). An extreme consequence of positivism is, also, the cult of quantification: numbers offer a superb defense against the complexity of human condition, most of which rests “unluckily” qualitative (Seligman, 1969, 266).

19. Angelo Messedaglia (1820-1901), an Italian economist, politician and President of the *Accademia dei Lincei* (Lincean Academy).

20. Luigi Luzzatti (1841-1927), an Italian jurist, economist and politician; Prime Minister of Italy from 1910 to 1911; founder of the *Banca Popolare di Milano* in Milan.

21. Luzzatti operated a distinction between Protective Acts, Enabling Acts and Acts of General Benefits. Protective Acts seek to protect workers from employers’ abuse of power while the 3-types of Enabling Acts seek to: facilitate the economic activities of the working class, encourage savings, or promote education and intellectual maturation (Pecorari, 1986, 111-113).

22. Luigi Cossa (1831-1896), a professor of Political Economy and Financial Sciences at Pavia.

23. Fedele Lampertico (1833-1906), an Italian economist, statistician and politician.

24. During its first decades, the Council was made up of Luigi Luzzatti, Fedele Lampertico, Gerolamo Boccoardo, Angelo Messedaglia, Cesare Correnti, Luigi Bodio, Carlo Francesco Ferraris, Emilio Morpurgo, and Vittorio Ellena, among the others.

25. Luigi Bodio was born in Milan on the 12th of October, 1840. He graduated in 1861 at the University of Pisa as doctor of law. He was professor of Political Economy and Statistics in Livorno and Milan and since 1869 he taught Political Economy, Commercial Geography and Statistics at the *Regia Scuola Superiore di Commercio* (Royal High School of Commerce) of Venice. He was the Director of the Central Office of the Italian Statistics from 1872 to 1898 (the period of time on which the essay is focused). In 1881 he became corresponding member of the *Accademia dei Lincei*, and then its national member. In 1900 he was elected National Senator. On August, 1901, he was appointed as General Commissioner of Migration. He was among the founders of the International Statistical Institute (ISI) and its first General Secretary from its date of creation (June 24, 1885) to 1905. He was at the head of the ISI from 1909 up until his death in 1920 (Rome, November 2). In 1910, Bodio became President of the new Superior Council of Statistics (Bertani, 1937; Favero, 1999).

26. It is worth mentioning that, at that time, statistics was gradually gaining an important place in the society. Indeed, the Italian Royal Decree n. 2775 dated October 11, 1875, setting out that statistics had to become a university subject, and introducing the compulsory teaching of it in Law Studies had been released (Ferraris, 1877).

27. From the mid-1860s to 1920, Bodio wrote 15,000 letters to 2528 correspondents. His letters are kept in the Braidense National Library in Milan (Soresina, 2001).

28. See Poh Seng (1977) on the delay in the extensive application of sampling models due to a disagreement between Bodio and Kiaër.

29. Bodio resigned from his position as ISI's General Secretary in 1905; for difficulties in the succession process see Soresina (2001, 110-111). Alexander Verriijn Stuart, Dutch, was elected President of the ISI and its Bulletin was moved to The Hague. In 1909, Bodio was elected President in the congress in Paris.

30. He was at the head or a member of Italian delegations to international congresses of statistics, hygiene, demography, criminal legislations, and to railways conferences, from the early congresses of European statisticians in the mid-19th century to the foundation of the League of Nations. He soon became a point of reference for the Directors of the European Offices of Statistics (Soresina, 2001, 105 text and notes).

31. Carlo De Negri would replace Bodio as Director of Statistics, and after him, Enrico Raseri and Alessandro Aschieri would come. In the office were also working: Vittorio Ellena—who would become Ministry of Finance—; Luigi Perozzo, Lamberto de Marchi; Orazio Paretti, Vincenzo Magaldi, Bonaldo Stringher—who would become Governor of the Bank of Italy—; Carlo Schanzer; Augusto Bosco di Ruffino—successor to Messedaglia as professor of Statistics in Rome, who would then be replaced by Rodolfo Benini—; Carlo Ferraris—who would become the first teacher of Administrative Science in Italy (Pavia), and Professor of Statistics and Dean (1891-96) of the University of Padua—; Vito Cusumano—he would become professor of Finance Science in Palermo, and Tullio Bagni—professor of Financial and Actuarial Mathematics in Rome.

32. Enrico Raseri was born in 1854. He graduated in Medicine at the University of Turin in 1877. He started to study Anthropometry under Cesare Lombroso's guidance. In 1878, he started to work at the Ministry of Agriculture, Industry and Commerce as statistics officer, and in 1879 he became General Secretary of the Central Council of Statistics, headed by Cesare Correnti. He worked as freelance professor of Demography in 1890. Since 1880, he was the Italian government's representative in some national and international Congresses of Hygiene. He was also corresponding member of the Italian Medical Academy, the Public Society of Professional and Medical Hygiene of Paris, and the Belgian Society of Hygiene. He was member of the International Statistical Institute since 1887. As public officials, he directed the Directorate General for Statistics from 18 February, 1910 to his death (July 12, 1911). For further in-depth analysis, see Arcucci (1937); Bodio (1911); Archivio Centrale dello Stato (State Archives),

Ministero dell'economia nazionale (Ministry of National Economy), personal files, Enrico Raseri, b. 106

33. About him, Bodio said: “he could have worked as medical doctor and earn a lot of money, or he could have become a highly-respected professor. But, luckily for the Italian statistics, he likes to perform those simple and important jobs official statistics is made of” (D’Autilia, Melis, 2000, 35n).

34. Raseri published in the *Bulletin of the International Statistical Institute* comparative studies of hygiene-health statistics, demographic statistics, and assistance statistics. The Bulletin was printed in Rome—under Bodio’s direction—from 1886 to 1890, then it was moved to The Hague. Among the studies by Raseri: “Delle condizioni igienico sanitarie d’Italia confrontate con quelle di alcuni Stati esteri” (“On the Italian Hygienic and Healthcare Conditions Compared to Those of Other Foreign Countries”) (vol. I, n. 3-4); “Di alcune statistiche sanitarie in Italia e in altri Paesi europei” (“On Some Hygienic Statistics in Italy and Other European Countries”) (vol. IV, n. 1); “Les naissances en rapport avec l’âge des parents” (“Births in Relation to the Age of the Parents”) (vol. X, n. 2); “La mortalità nei vari stadi della vita” (“Mortality in the Various Phases of Life”) (vol. XI, n. 2); “La statistique internationale de l’assistance hospitalière” (“International Statistics on the Hospital Assistance”), congress in Paris in 1909.

35. In addition to the *Annali di Statistica*, two important publications are also worth mentioning: *Archivio di Statistica (Statistics Archive)* (1876) where reflections on the theory and the history of statistics are made; and *L’Italia economica (Economy of Italy)* (1873) where tools to develop a statistical-economic framework for the country are given. Some members of the Regional Council of Statistics also published in periodicals—founded after the Italian Unification—dealing with public health and hygiene issues. Such as *Giornale della Regia società italiana d’igiene (Journal of the Italian Royal Society of Hygiene)* founded in 1878 and *Rivista di igiene e sanità pubblica (Review of Public Hygiene and Healthcare)*, founded in 1889. Issues linking population and health were also internationally dealt with in international periodicals. Such as *Annales de démographie internationale (Annals of International Demography)* (headed by Jacques Bertillon), or the *Bulletin of the International Statistical Institute*, where a strong Italian influence could be perceived as Bodio had been both ISI’s General Secretary and President (Marucco, 1996, 121).

36. Marucco (1996, 124) quotes Westgaard (1932).

37. The President was Cesare Correnti, the members were: Carlo Maggiorani, Eugenio Beltrami, Alfonso Corradi, Francesco Ratti, Augusto Murri, Telesforo Tarchiani—Director of the public health at the Ministry of the Interior—, Luigi Bodio, Pietro Castiglioni, Eugenio Rey and Giuseppe Sormani.

38. In the book, a comparison is made between the price of wheat and mortality in the UK (from 1800 to 1870), France, Belgium, Prussia, Austria, Sweden and Finland in a very long period of time.

39. In the article, Raseri wrote about the decision taken by the International Congress of Public Charity of substituting baby hatches—places where babies were abandoned—with “maternity homes”, which had already been founded in France. To support the effectiveness of this measure to reduce mortality, Raseri compared child mortality in the first years of life in municipalities with or without baby hatches, and between legitimate and illegitimate children.

40. Sormani kept on defining with precision the duties of medical statistics, which was supposed to study: mortality and morbidity in relation to different parameters (gender, age, profession, marital status and so forth); the incidence of diseases and causes of death in regard to the environment; diseases’ duration and outcomes; diseases’ outcomes in relation to proper treatments (Sormani, 1881). In this list of the duties of statistics were also included “some areas of interest—such as, aetiological epidemiology, survival analysis, and clinical trials—that would be properly defined in the 20th century” (Geddes da Filicaia, 2000, 197).

41. For a precise example see the well-known survey of Stefano Jacini *Inchiesta agraria e sulle condizioni della classe agricola* (*Survey on Agriculture and the Conditions of the Agricultural Class*) that was promoted in 1877 by the Italian Parliament and published between 1880 and 1885 (Jacini, 1976; Caracciolo, 1973).

ABSTRACTS

This work outlines the role played in Italy by statisticians, together with medical doctors, to draw politicians' attention to the population healthcare to further encourage national development. This topic becomes particularly relevant thanks to the "statistics factory" at the MAIC's (Ministry for Agriculture, Industry and Commerce) Directorate General for Statistics which existed from the Italian Unification (1861) till the end of the 19th century. Moreover, under the supervision of Luigi Bodio, a scholar and a master with a wide net of relations with other scientists, MAIC becomes an interesting vantage point for observing how healthcare issues became a substantial element of the Italian national building process with reference to foreign counterparts.

Ce travail explicite le rôle joué en Italie par les statisticiens et les médecins afin d'attirer l'attention des politiciens sur la santé de la population et d'encourager davantage le développement national. Ce sujet devient particulièrement pertinent du fait de « l'usine de statistiques » de la Direction générale des statistiques du MAIC (Ministère de l'agriculture, de l'industrie et du commerce), depuis l'Unification Italienne (1861) jusqu'à la fin du XIXe siècle. De plus, sous la supervision de Luigi Bodio, un chercheur et un maître qui possédait de nombreuses relations avec d'autres scientifiques, le MAIC devient un point focal intéressant pour observer comment les questions de santé sont devenues un élément important du processus de construction national italien.

INDEX

Mots-clés: soins de santé, développement économique, statistiques, école Lombardo-Vénitienne, Luigi Bodio, Enrico Raseri

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