



Health and productivity? On the development of an “economic” analytics of the relationship between work and health (Argentina, 1900-1955)

¿Salud y productividad?: sobre la formación de una analítica “económica” de la relación salud-trabajo (Argentina, 1900-1955)

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ABSTRACT This article seeks to demonstrate that the economic rationalization in health that characterizes the present, although possessing unique features, is inscribed within a longer historical process. Between 1900 and 1955, an “economic analytics” of the relationship between health and work was developed in Argentina, structured around the following focal points: reflections on the “price of a man”; thought that framed social medicine within the “human economy” program; the discourse of healthful and efficient living; the calculations of factory doctors and the conformation of an economic and utilitarian discourse within occupational medicine; and, finally, debates on productivity. These five central concepts define the emergence of a particular problematization regarding worker health and, in turn, raise questions about the relationship between capitalism, liberalism and biopower in occidental societies.

KEY WORDS Occupational Health; Economics; History; Argentina.

RESUMEN Este artículo está dedicado a mostrar que la racionalización económica de la salud que caracteriza el presente, aun reconociendo rasgos singulares, se inscribe en un proceso histórico de mayor duración. Así, entre los años 1900 y 1955 se constituyó en la Argentina una “analítica económica” de la relación salud-trabajo, estructurada en torno a los siguientes focos: la reflexión acerca del “precio del hombre”; el pensamiento que inscribía la medicina social en el programa de la “economía humana”; el discurso acerca de la vida sana y eficiente; los cálculos de los médicos de fábrica y la conformación de un discurso económico-utilitario al interior de la medicina del trabajo y, finalmente, los debates acerca de la productividad. Esos cinco ejes definen la emergencia de una problematización particular de la salud de los trabajadores y, a la vez, dejan planteado el interrogante concerniente a la relación que mantienen, en las sociedades occidentales, el capitalismo, el liberalismo y el biopoder.

PALABRAS CLAVES Salud de los Trabajadores; Economía; Historia; Argentina.

INTRODUCTION

There is no doubt that in the capitalist, liberal, and democratic societies of the West, health and disease processes affecting workers are currently regulated from a predominantly economic perspective. Argentina is no exception to this tendency. The omnipresence of this economic rationality becomes evident upon reviewing recent events: the debate leading up to the amendment of the Occupational Hazards Act [*Ley de Riesgos de Trabajo No. 24557*] passed on October 24, 2012; the levels of consciousness concerning workplace health and safety; the importance that the capitalist class assigns to the promotion of strategies to improve quality of life in the workplace or to draw attention to the programs laid out by the International Labor Organization (ILO) aimed at improving productivity and working conditions in small and medium-sized enterprises (SMEs).

It should not come as a surprise that such initiatives are justified both by the right to health of workers as well as values such as equality and solidarity. Throughout history, a diversity of social rationalities, human rights discourses, and moral arguments provided the language, concepts, and technologies to analytically construct the problematic relationship between work and health and to imagine necessary interventions. Although during the 20th century, these “non-economic” perspectives intersected and mixed with cost calculations and arguments regarding profitability, today they are much less prevalent in comparison with the robust presence of economic language. However, this focus on the economic aspects of health is not a novelty, nor can it be exclusively attributed to the influence of neoliberalism on occupational hazard legislation (especially during the 1990s).

This article aims to demonstrate that the economic rationale regarding health, characteristic of contemporary society, forms part of a larger historical process even despite its unique features in the present day. As will be discussed below, between 1900 and 1955 an “economic analytics” (a) of the relationship between health and work (b) took shape in Argentina, structured around a heterogeneous range of contributions

which will be further examined keeping in mind their specificity. In the first section, I will demonstrate how during the early decades of the 20th century a group of reformers characterized by a “practical spirit,” important socialist figures, and representatives of the hygienist movement introduced a concern for the economic relevance of occupational health (c) in Argentina. Three main factors contributed to this: the conflicts around the methods with which to calculate “the price of man;” John Ruskin’s ideas on the “human” origins of wealth (d); and a series of pragmatic arguments. The second section will expand on the effects of the “human economy” perspective since 1930, specifically applied to the disciplines of hygiene and social medicine. The third section will analyze the impact of US-based discourses regarding “efficient living” and the vitality of the population in Argentina during the same decade, discourses which would later be revived during the Peronist administrations (1946-1955). Section four will discuss efforts made from the 1940s onward by factory physicians to calculate the costs of occupational accidents, as well as the origins of an economic and utilitarian discourse within the field of industrial and occupational medicine. As will be argued in section five, by the end of World War II the relationship between occupational health and the economy began to articulate in the interior of a multifaceted problematization of worker productivity. Finally, some conclusions on the subject will be elaborated.

HOW MUCH IS A PERSON WORTH?

Occupational injuries and diseases were one of the areas in which the notion of “the social” first emerged and was problematized in Argentina. For a large number of experts and intellectuals of differing ideological backgrounds, one of the most pressing social issues was the living and working conditions of the population. Acting on behalf of the (collective) interests of “society” and the “Nation,” Juan Biale Massé (e), Augusto Bunge (f), and Alfredo Palacios (g) (among others) advocated for the establishment of social legislation that would increase both the ranks of the working population as well as

its productivity. To justify their proposals, they appealed to the political and strategic relevance of having a "large" and "healthy" populace for the State, in addition to ideals of solidarity and social justice. Early on, they argued that the organization of biopolitical mechanisms (h) acquired an economic and utilitarian significance in three main ways.

First, prior to the enactment of the Workplace Accidents Act [*Ley de Accidentes de Trabajo No. 9688*] in 1915, a debate on the methodology used to calculate "the price of man" was introduced in Argentina (as it had been in Europe and in the US). Resulting from the difficulties involved in estimating compensation for damages, in his *Tratado de la responsabilidad civil en derecho argentino bajo el punto de vista de los accidentes de trabajo* [Treaty on civil liability for workplace injuries under Argentine legislation], Biale Massé (9 p.129) discussed the different methods used to calculate "the average price of man" that had been implemented in other countries. These methods were divided into two groups: in the first, a person's value was calculated in terms of the investment made in an individual prior to becoming an active worker – that is to say, this value was equal to the "cost price;" other approaches, however, considered each individual as "productive capital" and established their value in relation to salary earned, which in turn was considered analogous to interest on monetary capital. The latter method, used by British mutual aid societies, was Biale Massé's choice (9 p.135) due to its simplicity, and because of the fact that when combined with the former method, results were so close to reality that they could be considered to be true, according to the author.

After the enactment of the Workplace Accidents Act (which set fixed rates for compensation), the debates over "the price of man" lost momentum until the 1930s, when the issue was revived within the interior of the discipline of social hygiene. This was a matter of great interest to many, such as Teodoro Tonina (i) and Alberto Levene (j), despite the fact that their ideas had nothing to do with fixing rates of compensation for occupational accidents. On the contrary, they believed that it was more important to show how the prevention of diseases was beneficial to the

Nation. Thus, at a time when concerns about the "quantity" and "quality" of the population converged (10 p.36), experts did not hesitate to resort not only to moral arguments but also to "hard numbers" in order to persuade authorities of the urgent need to take action with respect to health and disease processes.

Although the circumstances for the reception of ideas had changed over time, in order to show the economic relevance of health, Massé, Tonina, and Levene tended to employ a similar discursive matrix (to a degree). This had begun to develop from the mid- to late-19th century in the field of insurance and hygiene around a series of practical problems (setting fixed compensation rates, reducing the prices of insurance policies, justifying investment in urban sanitation, among other things), which involved the use of capitalization strategies with regards to human life that tended to place human and other types of capital on equal footing. Human life (without any further differentiation) was itself considered to have an economic value and was subject to calculations based on a "biological accounting" model. In this manner, the populace was considered part of the State's assets; it was a sort of "biological commerce fund," which was managed through mechanisms similar to those of other forms of capital. As early as the 1930s, calculating the economic value of the population's life and health was articulated in the "human capital" perspective, considered a demographic or holistic point of view (11 p.320). That is, it was considered a biological and economic asset of the Nation-state and an essential input and driving force of the national economy, the State's military potential, and the equilibrium and progress of society and culture.

Along similar lines, Tonina introduced into the national debate the ideas of Jules Rochard, a French hygienist who considered that human life was a form of "capital" whose value could be calculated according to the factors contributing to its development as well as what each individual produced with their labor. Thus, the more productive an individual, the higher the return on the "social capital" which had been invested by the family, the State, and society as a whole in said individual's life, development, and education. Inspired by these and other ideas, Tonina (12 p.455) held

that production was a function of workers' health. Underlying this definition was a fluid relationship between "biological norms" and "productive norms," with significant implications for the governance of individuals and populations (k). The idea that the efficient use of a body was linked to health, and conversely that the inefficient use of a body (due to idleness, laziness, incompetence, and so on) was linked to disease, helped stress the differences between productive activities and classes on one hand, and unproductive activities and classes on the other. This differentiation can be dated back to the mercantilist school.

In addition to reinforcing negative meanings associated with the sick – consistent with the liberal conception of the individual but at the same time bearing a resemblance to the modern myth of the "culture of work" – the juxtaposition of these regulations helped portray the life cycle as an economic cycle consisting of a pre-active, active, and post-active age.

The idea of the "price of man" was not the only means by which the management of biological processes acquired an economic value at the beginning of the 20th century. Another contribution to this perspective could be found in the ideas of John Ruskin, who believed that human life was the true source of wealth. Alfredo Palacios frequently cited the essay *Unto this last* (14) in order to persuade the liberal Argentine elite to invest in the preservation of "human material" and in the training of "high quality" workers. The aim of his proposal was to dismiss fears regarding the degradation of the population. However, in addition to these arguments (both biological and political), there were economic motivations at stake. Workers were to undergo a "qualification" process so that their performance could increase in order to meet the demands of import substitution industrialization, an economic process in Argentina triggered by the outbreak of World War I. According to the author, the "production" of high quality workers depended on the improvement of living conditions and the adjustment of working conditions to the scientific regulations derived from trials that he himself had been performing in the fields of physiology and psychology. By the 1920s, the emphasis placed on worker training was also shared and promoted by the psychotechnical movement, which was mainly focused on staff selection and

counseling. All of these perspectives shared the common concern of improving workers' performance and increasing productivity.

In addition to the hypothesis regarding the "human origins" of wealth, in order to support the idea that social protection would contribute to profits, Palacios (following the hygienists) used the English formula of *life capital* and the metaphor of the "human engine," adopted from the European labor sciences. The physically founded conception of workers was an effective argument for the economization of life, as it was consistent with analogies between human and non-human sources of value. Based on two laws of thermodynamics (related to the conservation and transformation of energy), work ability in an abstract sense allowed for the unification – in a single rational operation – of machines, humans, and non-human animals. During the interwar period, along with the development of the "human factor" theory and the movement for the *humanization* of work (inspired by heterogeneous affirmations, some scientific and others religious in nature), this equivalence would lose almost all meaning and individuals would start to be thought of as unique elements – both mysterious and strategic – in the organization of production.

Thirdly, and beyond purely intellectualist references, the idea that the health of workers had an economic value was also based on a series of pragmatic arguments as early as the turn of the century. In order to promote projects for salary regulation, social hygienists and socialists (as well as other reformers) had to struggle against the objections of liberals and had to persuade employers of the economic benefits of health improvements in the workplace. Thus, regardless of the confidence that both Biale Massé and Bunge vested in science and law, they believed that science was not supported strongly enough by local "entrepreneurs" and that the benefits of social legislation had not been understood yet. As a case in point, although Bunge (15 p.249) was certain that industrial sanitization was a *business* matter, he also considered that its implementation had to be guided by a principle of prudence that called for gradual changes.

Before discussing how the arguments of the "human economy" perspective were introduced in Argentina, it is worth considering three relevant topics.

The first is related to the importance attributed to the “economic” dimensions of life and human labor in the discourses previously discussed. It should be noted that although human life was considered “productive capital,” that capital was not represented by the set of natural skills and acquired abilities that each individual had – as in the case of neoliberal approaches – but by the productive “force” and “energy” present in each human body. Thus, performance would be increased by the conservation of the creative and transformative “force” of each individual.

The second consideration highlights the fact that, although this economic conception of human life subordinated health protection to profitability, the relation between “the economy” and “life” had not been expressly outlined, at least at the beginning of the 20th century. In a curious turn of phrase that exploited the semantic ambiguity of the term “value” – reintroduced by Alfredo Palacios – Ruskin inverted the relationship between these concepts and reworded them as follows: “to have value means to promote life” (16 p.11). Similarly, this kind of reasoning laden with “non-economic” arguments that considered humankind as “an end in itself,” stated that the economic assessment of life was uncertain and established a relation of reciprocal reinforcement between acts of vitalization and of moralization.

Thirdly, these discourses outlined early on two central themes that would promote reflection on the “economy-health” relationship over time: a “negative” version built around an *analytics of loss*, that is, around all manners of expenses and costs incurred as a result of work-related diseases, from the triple perspective of society, employers, and workers and their families; and a “positive” version based on an *analytics of revenue*, which could be earned through investments made to prevent occupational injuries and diseases, and in turn improve the working and living conditions of the salaried workforce. As will be discussed later on, these two analytics would assume different forms over time.

THE HUMAN ECONOMY APPROACH AND ITS INFLUENCE ON SOCIAL MEDICINE

From the 1930s to the 1950s, René Sand was an intellectual role model for experts who problematized the influence that diverse social factors had on population health. These experts also developed institutional solutions to the problems they identified (such as the degradation of health, the decline in birth rates, among others). Sand was a physician, an advocate for medical and social work, founder of the *Association Belge de Médecine Sociale*, and an official of the Red Cross. In 1914, he travelled to Chile where he was appointed by the Chilean Health Minister Alejandro del Río to organize the system of social protection. Although there are no records of Sand visiting Argentina, the most important figures of the Argentine healthcare system were familiar with him, social medicine, and social work. The archives of the library at the Faculty of Medical Sciences of the Universidad de Buenos Aires included two works by Sand, in their original language, which were available to local readers at the time: *Organisation industrielle, médecine sociale et éducation civique en Angleterre et aux États-Unis* (1920) and *L'économie humaine par la médecine sociale* (1934). Many decades later, in 1961, Eudeba (the Universidad de Buenos Aires' publishing house) printed *La economía humana* [The human economy], a book first published in 1941.

These texts are important for two reasons: Sand turned social medicine into an instrument of the “human economy,” the second analytic for understanding the economic problematization of health discussed in this article. Moreover, he devoted himself to studying worker productivity and the organization of work, summarizing his views in a propositional statement that established production as a variable dependent on three factors: the ability, the capacity, and the will to work.

To fairly characterize the effects of René Sand's work on local readers, it is worth mentioning that in most cases he was cited as an authority in the promotion of social work who urged public officials to fight against chronic

and endemic diseases, and supported the idea that there were economic reasons that necessitated interventions in health issues. In this sense, Argentine physicians were able to fit their ideas and proposals into a pre-construed discursive matrix that, at the time, was quite attractive since it drew from both science and humanism. However, despite the legitimating effects associated with Sand's name, the imprint left by his ideas in the national arena was quite limited. His formula for productivity was particularly celebrated, as will be shown in section five. However, that was not the case for his ideas on the "human economy."

The author first used this term in the conclusions of a text from 1920, analyzing the results of survey research in power plants, insurance companies, governmental agencies, and other organizations in the US and England at the end of World War I, part of a larger study on Taylorism. On the final page of his *Organisation industrielle*, he stated that since political economy (the science of "tangible goods") had existed for two centuries, the creation of a "human economy" perspective was long overdue. This was understood as a science that would help all people lead a full life (17 p.856). However, it was not until 1934, when he published *L'économie humaine par la médecine sociale*, that this idea was granted importance.

Argentine authors referenced Sand's ideas practically simultaneously with the publication of his final book. In contrast, earlier references to Sand's "human economy" drew little attention. From the 1930s, a group of distinguished physicians, social reformers, and experts concerned with labor and production adopted Sand's ideas on productivity from the 1920s as their own. Even so, a cone of silence would descend upon Sand's ideas on the human economy.

Tonina would later (in 1932) attribute to Sand the post-World War I reworking of the concept of "human value," which as previously discussed had its origins in the 19th century. In 1933, as head of the General Office of Public Health [*Dirección General de Sanidad*], he used the term "human economy" to imply that beyond its emotional elements, there were also economic motives for intervening in health (18 p.2715). Moreover, in 1934, he authored an

article entitled "La sanidad militar y el problema de la economía humana" [Military health and the problem of human economy] (19 p.460).

However, these references were vague and generic and contrasted with the specific importance that Sand ascribed to the human economy that called for the need to establish a true socialist government, which would include the notion of social medicine. Perhaps this anti-liberal bias, the absence of Spanish translations of Rudolf Goldscheid's work (the "father" of the human economy perspective), and the late publication of *La economía humana* (1961), may help explain the indifference shown in Argentina to that branch of Sand's thought in contrast to the wide acclaim his work on productivity received. But, what is the human economy perspective and what is its relation to the process of "economization of worker health" discussed here?

This formula corresponded to a particular approach to economics developed between the years prior to and immediately following World War I by the Austrian sociologist and social theorist Rudolf Goldscheid. His ideas constituted a turning point for the discussion of the interactions between biological and economic processes, as he introduced the concern for the economic value of the population into economic discourse. From his point of view, human beings were a form of "organic capital" whose optimal life span had to be actively promoted through State investment in the "qualification of the human material." Goldscheid's program included economic planning and established social welfare as a model for universal biopolitical management (20 p.254).

Even while recognizing that the economic conception of human life dated back to the calculations of Anglo-Saxon actuaries and hygienists, Sand was drawn to their proposals to such an extent that he transformed social medicine into an "instrument" of human economy. Through rational organization, education, and technical cooperation, social medicine would ensure a better management of the "living capital of the Nation," the source of all wealth (21 p.285). This proposal was in line with one of the core ideas of this approach, which stated that the physical, moral, and professional assets of the population should be cultivated. This investment in human labor was

taken collectively: society (not individuals) would benefit or suffer the increases or decreases in those assets. To achieve this, the State held the primary responsibility for making improvements.

Although Ruskin criticized political economy, Sand contrasted the “economy of tangible goods” with the “human economy” and established a hierarchy between them, emphasizing the supremacy of human value over material value.

A supporter of health socialization strategies, this Belgian physician found in the human economy the adequate language to outline his proposals and to discuss them with the different actors involved. While the language of solidarity could only be understood by philanthropists, reformers, and some government officials, the language of numbers was listened to and understood by everyone. The translation of health demands into economic discourse did not do away with moral issues. The fundamentals of the human economy perspective, as Sand stated, sustained a humanistic discourse that had the purpose of fully satisfying universal needs through the maximization of available resources, and thus, in a more utopian manner, helping everyone live a fuller life. As stated in Sand’s 1941 text, the main principle of the human economy was that

No one, under any circumstances, should be deprived of basic necessities for living a normal life, since such a deprivation would bring about a decline of physical, moral, and professional assets, implying a loss for society. (22 p.7) [Own translation]

A variety of interests and principles converged in this perspective, both economic and ethical. The moral significance that Sand attributed to healthcare was evidenced in how he addressed the issue of unproductive individuals and groups. Although Rudolf Goldscheid rejected “negative eugenics” and attributed an economic value to altruism (20 p.255), his work did not answer the question of what to do when individuals were unwilling to follow the guidelines of an economic program or were unable to contribute to economic development. René Sand was in favor of “positive eugenics,” and in this respect clearly believed that an absence of action meant to increase the productive capacity of workers as well

as the resistance by certain groups of people to this productive capacity would eventually generate a mass of “devalued” subjects composed of “uneducated” men and women (whose capacities had not been developed yet), the unemployed, and physically or mentally disabled individuals (22 p.22). However, since he believed that social action was primarily a moral obligation, he advocated for the provision of care to both the terminally ill and the elderly, even when such care was unproductive.

This eclectic and pragmatic “humanistic background” could explain why his ideas about the organization of work and productivity had such an uneven reception. These ideas were widely accepted by experts in social and occupational medicine who adhered to a scientific approach, as well as those who followed the social doctrine of the church. In this sense, Sand’s influence on José Pedro Reggi is worth mentioning (1). The approach to occupational medicine promoted by Reggi was interdisciplinary in nature and humanistically-oriented, ever since its appearance in the first issue of the journal *Medicina del Deporte y del Trabajo*, first published in 1935. This issue will be taken up further in section five. However, it is necessary to first consider another focal point of the economic problematization of health that emerged in the 1920s, revolving around the issue of population vitality.

EFFICIENT LIVING AND THE PROBLEM OF POPULATION VITALITY

In 1927, the South American Young Men’s Christian Association [*Federación Sudamericana de Asociaciones Cristianas de Jóvenes*] published a brief hygiene handbook bearing a curious title: *La vida sana y eficiente* [The healthy and efficient life] (23), authored by Irving Fisher, an American economist and professor at Yale University, and Eugene Lyman Fisk, a physician with ties to insurance companies. This handbook was written as part of the actions carried out in the US by the Life Extension Institute. This institution, to which both authors belonged, was founded in 1914 by insurance companies, with the purpose of promoting lifespan extension among their policyholders through preventive strategies (regular

health examinations) and health education. There was nothing philanthropic in this goal. Statistics and actuarial calculations carried out by insurance companies showed that people, though healthy, suffered from conditions that raised their risk of death, and that prevention was linked to increases in life expectancy. It was therefore demonstrated that longevity brought about financial benefits, which would explain why insurance companies had become so involved in the field of preventive medicine.

This handbook, entitled *How to live*, was first published in English in 1915 and was re-published several times. The promotion of this book in Spanish-speaking countries included two "Argentine" forewords, one authored by then Secretary of Education Antonio Sagarna, and the other by the head of the National Department of Hygiene, Gregorio Aráoz Alfaro.

This text can be read from start to finish as a practical manual: it teaches, among other things, how to brush one's teeth, how to remain calm in the workplace, and how to fall asleep. However, the title chosen by the Spanish translator, *La vida sana y eficiente*, suggests that this handbook was to function as a technology of power, both individualizing and socializing. The insights and practices put forth by the text were its distinctive feature, since: a) their goal was to increase the vitality of human beings; b) they were based on a new concept of efficiency; and c) individuals were now accountable for their own health. Thus, the biopolitical framework underlying *La vida sana y eficiente* was an expression of another face of the economic problematization of health, which could be characterized by three aspects.

First, it was inspired by a maximizing *telos* the aim of which was defined by an abstract quality: "vitality." Healthcare education strategies, regular health checkups, and other recommendations were driven by the desire to produce a constant increase in the life expectancy of the population. The discourse around "efficient living" was fostered, during the first years of the 20th century, by the anxiousness around assuring maximum human lifespans and the urgent need to produce accurate estimates. The question of whether there was a natural limit to human life (24 p.6) gave rise to all sorts of assumptions and tests combining the quasi-ethnographic *racconto*

of people over one hundred years old with mathematical modeling and lab experimentation, such as the growth of live cells and tissues in artificial laboratory environments. One of the pioneers in these types of trials was Alexis Carrel, a physician, reformer, and eugenicist, whose US laboratory was in 1920 one of the world's leading institutions in cell culturing (25 p.32). Though inspired by scientism, very common at the time, this discourse had many mythical elements: the certainty that through timely technical procedures, life could be extended indefinitely; the belief that certain cell tissues could be potentially immortal; the possibility of revitalization and rejuvenation; and so on. This *vivifying* approach was full of mystical references and combined economic and political motivations, since preventive medical practices were also in line with State efforts to assess, safeguard, and improve the Nation's biological heritage. As early as 1908, US president Theodore Roosevelt laid out a plan to evaluate the "assets" of the Nation called the Conservation Commission, which submitted to him a report on national vitality. Eugene Lyman Fisk, who formed part of this project, contributed by incorporating human life into the discussion of conservation and the economic value of forests, minerals, lands, and water.

Secondly, another distinctive characteristic of this discourse was that the economic rationalization of life was operationalized, and at the same time justified, based on a conception of maximum efficiency, which in turn was defined as the optimal utilization of the "human element." The idea was to extend productive life, thus expanding the active age of an individual's lifespan as much as possible. This attempt to optimize life was based on the assumption that death was an "accident" and that life could be extended indefinitely. Longevity depended on maintaining full efficiency of each specific part of the human machinery (24 p.13).

As we are used to associating the concept of efficiency with the neoliberal paradigm, we tend to consider efficiency from an economic perspective in relation to rational, individual decision-making. But in 1915, this paradigm had not been developed yet. This suggests that efficiency must be understood in a "technical" rather than an "economic" sense – taking into consideration the conditions in which this discourse on vitality arose – that is, as

the maximum exploitation of an asset (in this case, human life). Similarly, it is worth mentioning that such an idea of efficiency was not explicitly related to people's actions or behaviors, but rather to "life" in an abstract sense.

Thirdly, unlike the previously discussed aspects of the economic problematization of life, the discourse on healthy and efficient living involved individuals caring for their own health, being accountable (though not exclusively) for the biological rationalization of their life. For the authorities at the Life Extension Institute, it was mainly a way to promote "healthy lifestyles." Based on the manner in which the conception of "healthy" related to the idea of "efficiency" and on the emphasis placed on individual accountability, it can be argued that this discourse prefigured some of the ideas that, over the years, would characterize the neoliberal theory on human capital. This should come as no surprise since one of the forerunners of this approach was Irving Fisher (26 p.231), a Harvard economist, member of the Conservation Commission and one of the authorities of the Life Extension Institute. Fisher saw human life as capital, and capital was understood as wealth that yields income (27 p.75); that is, an "influx" of services. Similarly, his ideas also foreshadowed one of the principles of the neoliberal approach: actions taken in healthcare (as in education) must be understood as an investment in human capital. In his 1906 book *Economía política geométrica o naturaleza del capital y la renta* [The Nature of Capital and Income] he stated, "the consumption of food, by preserving health and maintaining life, enables the body to yield better and more long-lasting input to the mind in future years" (27 p.221).

In Argentina, concerns over the "quantity" and "quality" of the population – widespread in the 1930s – provided fertile ground for the promotion of this discourse on vitality originating in the US. Within the pessimistic intellectual scenario of the interwar period (25 p.67), statistics compiled by the General Office of Public Health were taken as warning signs that alerted to the biological degradation of the population. In order to promote an action plan oriented to the improvement of health, local hygienists and physicians combined fears of population degradation and decline with

economically-oriented arguments. In the 1930s, consensus was reached among several health and labor experts about the idea that preventable diseases were a result of "national wealth leaks" (12 p.454), and the need to redirect interventions in health from assistance to prevention. As the head of the *Liga Argentina de Profilaxis Social* [Argentine League for Social Preventive Medicine] stated, it was "easier, more economical, and useful" (28 p.997) to prevent healthy people from getting sick than to satisfy multiple healthcare demands. It is worth mentioning that, when this discourse on a "healthy and efficient living" was implemented at the national level, it underwent several modifications.

First, unlike the case of the US, the debate in Argentina concerning preventive medicine began without prior experience from local insurance companies in initiating preventive actions against diseases. The "insurance experience" observed by Argentine physicians and hygienists was largely a foreign phenomenon. Since the 1920s discussions on preventive medicine and the principles of the "life extension" movement were indeed prevalent, but were restricted to the field of social security. In 1928, Germinal Rodríguez (m) published a dissertation entitled *Servicio médico y servicio social en las cajas de seguro sociales* [Medical services and social services for workers with social security benefits] in which he advocated for the implementation of social security regulations.

Secondly, a conservative telos and a socio-governmental point of view dominated conceptions of vitality. In the 1930s, discussions of this issue clearly revolved around its negative aspects. Emphasis was placed on the negative impact of diseases on worker performance, as this would cause an enormous expenditure of public funds and resources on several fronts: producers were harmed, new expenses were required, and the health of households, communities, and society at large was at stake (12 p.455). In this sense, preventive medicine was useful mainly to avoid a waste of energy. Similarly, analyses of statistics carried out by the General Office of Public Health showed that disease and death affected above all the economically active population. Faced with this problem, the solution began to differentiate itself from the one proposed by the

Life Extension Institute. In the US, emphasis was placed on individual accountability in choosing a healthy lifestyle, whereas in Argentina proposals concerned the population as a whole. The idea was to involve subjects (regarded as individuals) in strategies of social control devised by governmental agencies. Although some preventive practices were then implemented in specific segments of the population (military recruits, school and university students), it was not until the Peronist years that these practices became part of public policy. The discourse on healthy and efficient living received a significant impulse from the Peronist administration that undertook the project of increasing the "biological efficiency of workers" (29 p. 1.199). They organized preventive medicine strategies, and broadly speaking recreated the US obsession with vitality in Argentina: concerns regarding "minor diseases," individual accountability for one's own healthcare (articulated in terms of "social obligations"), and revitalization utopias.

As previously discussed, from the 1930s onward, several concerns were raised regarding the economic efficiency of preventive healthcare, which were directly connected with the issue of vitality. However, Peronism problematized the "biological efficiency" of the population as well as an interest in "optimizing" (and not only in "preserving") life. Following the ideas of US-based experts, Ramón Carrillo (Secretary of Public Health during the Peronist administration) believed that the goal of health policy was to extend the "useful" lifespan of human beings under biologically adequate living conditions as much as possible.

During this period, the prevention discourse would be redefined and focused. Similar to the US experience, prevention focused on chronic and minor diseases that were previously identified as the main motives behind social security "costs," early retirement, and absenteeism. Since the mid-1940s, health statistics were almost nonexistent, which is why – in order to justify economic efficiency of preventive healthcare – national authorities did not hesitate to resort to the economic estimates made by US governmental agencies and insurance companies. For instance, the experience of the Life Extension Institute was frequently cited by Ramón Carrillo and Germinal Rodríguez.

Similarly, between 1946 and 1955, the issue concerning the "price of man" was raised once again. First posed by Biale Massé, and later by the hygienists during the 1930s, this matter was taken up by Carrillo, who conferred a nationalistic tone to the discussion. Within the discourse of hygienists and physicians, the underlying assumption of discussions of the value of the "human element" and its performance capabilities, was that the figure being discussed was the value of the "average" Argentine man. During the Peronist administration, these ideas were not only overtly expressed but also reinforced. The Secretary of Health referred exclusively to the value of man within the context of Argentina. Thus, this conception displayed "nationalism" both in its definition and in the way the idea was explained and used. On one hand, this value was a direct consequence of the State's investment in health, education, and other areas of society. On the other hand, it was incorporated into estimates of political arithmetic; that is, when the value of human beings was compared to that of other Nations.

It becomes clear that, although the concern for the extension of human life was justified economically, at least for Carrillo and his closest collaborators, that ethos was articulated with spiritual and anti-technical definitions that placed emphasis on intrinsic biological values and the problem of devitalization. This could be explained by the importance attributed to the hypothesis of the biological degradation of the population in the second postwar period (30). In this sense, Peronism reintroduced discourses on the squandering and wasting of biological resources, characteristic of the 1930s, presented as a critical diagnosis. Years of inefficiency and negligence had to be redressed, as prior administrations had mismanaged the biological heritage of the Nation, thus neutralizing all forms of biological prodigality, and therefore the financial wealth of the country. However, it was not only the State that had harmed this biological heritage, but also the industrialists, in their careless use of human capital. As will be discussed in the following section, factory physicians would strive to remedy this situation.

FACTORY PHYSICIANS' CALCULATIONS AND THE ECONOMIC RELEVANCE OF INDUSTRIAL MEDICINE

Another way worker health acquired economic relevance was through the action of factory physicians. Though not specifically trained, these physicians provided healthcare services, albeit precariously, as "practitioners of the economy" (31 p.71) in workplaces.

It is clear that their actions cannot be explained simplistically. On the contrary, their involvement in workplaces should be understood in light of a heterogeneous and specific series of circumstances, among which it is worth mentioning the reproduction process of the capitalist system, the balance of power relations, the role undertaken by several Nation-states in class conflict, and so on. Thus, the figure of the factory physician originated in central societies within the framework of "Fordist capitalism" and was related to the protection of employers' interests. Bearers of a specific knowledge, the capitalist delegated the responsibility of workers' diseases to physicians (4), but their work was not devoid of ambiguities. To assess their performance, it is necessary to consider several factors, some of which were described by Lee (32,33) in a study on Robert Baker, one of the pioneers of this field of medicine. Initially, the distinction between the "public" and "private" functions of the physician was not entirely clear (32 p.87). Later, though these physicians performed the role of medical examiners and certifiers (activities which could bring them closer to capitalists' interests), they were also the only ones capable of determining the effects of work on the physical conditions of individuals (32 p.92). In Baker's case, although his view was not "pro-labor" *strictu sensu*, he was in favor of the most disadvantaged classes and promoted both social and labor reforms (32 p.93).

Although healthcare services in Latin America were modeled after those of central countries, the Argentine case is additionally complicated due to the following: Argentina's national industry developed under conditions of dependence, there was a notable inexistence and fragility of healthcare systems (4), and local "entrepreneurs" had historically paid little attention to health and

occupational safety. These circumstances allow us to understand one of the aspects (though certainly not the only aspect) that defined factory physicians' work, closely related to the topic of this article. The documents under analysis (34-37) suggest that physicians strove to justify their presence in factories to their employers. Thus, they focused on demonstrating the economic importance of prevention, of *in situ* health and emergency care, primarily in two ways: providing empirical evidence of the (economic and technical) importance of prevention, and the construction of a persuasive discourse that linked health with decreases in costs and increases in productivity.

By the 1930s, health professionals rendering services in State-run workshops and larger businesses (mainly foreign-owned companies) began to produce "factory" statistics and to carry out financial estimates on costs of occupational accidents and other issues connected to production. Therefore, the first figures on absenteeism and its economic impact, for example, were not produced by the State but by factory physicians (38).

These figures helped rationalize work since it was shown that tracking health prevented decreases in production indexes and losses in working time (34 p.21). Long before the "productivity epidemic" became an issue in Argentina, physicians encouraged thinking about this idea, both in economic (that is, monetary) and technical terms. Therefore, by determining the number of working days or hours that workers missed due to health problems, and by quantifying (in number of sick days) the time saved to employers as a result of their interventions, they were able to calculate productivity simply in technical terms. By the 1940s, some professionals were aware of the impact their activities had on working time and strove to establish an inverse proportionality between the "decrease in sick hours" and the "increase in productive hours" (35 p.71). In the mid-1940s, during the First Congress of Industry Physicians [*Primera Convención de Médicos de la Industria*] held in Buenos Aires, there was a consensus that the prevention of disease was easier, cheaper, and more convenient than treatment (39).

These empirical data nourished a specific discourse that defined the purpose and role of occupational health and justified its existence and its particular field of expertise before other fields

of knowledge. That discourse was developed in the 1940s through practice – first through the solitary practice of factory physicians and then collectively through the practices of institutions that rendered services to other businesses – and also through the theoretical production of experts who advocated for the institutionalization of this field of knowledge. Thus, they started journals and founded associations, planned scientific events, and made contacts with foreign experts. Although this discourse was scientific in nature, its persuasive bias remained intact, and with respect to the problematization under discussion, four relevant aspects should be mentioned.

First, this discourse explicitly addressed the cost of occupational accidents, which included (from the 1930s onwards) the distinction between direct and indirect costs proposed by Heinrich (n). According to factory physicians, one of the strategies to rationalize work was precisely to carry out this type of calculation. In this sense, their discourse served educational ends: its goal was to change the mindset of business leaders so that they, as “heads of industry,” would become more conscious of the economic impact that unforeseen events had on production processes. The cultural assumptions were based on a rationalistic bias: the idea that, just by stating the problems (in this case, costs), the behaviors that caused them would change (the absence of prevention).

Second, emphasis was placed on the existence of a “positive” relationship between health and production. This idea, though already developed by reformers at the turn of the century, would be relentlessly cited by occupational physicians and would become a defining tenet of their professional ethics. Over time, the term “health” began to be associated with others, such as “happiness,” “satisfaction,” “comfort,” and “well-being.” By the 1940s, the concept of *well-being* had already been introduced into the field of occupational health, which included anatomical, environmental, and psychological aspects. This consideration would pave the way for the “psychologization” of workplaces, a process that coincided with the mental hygiene movement, occupational psychology, and the human relations approach. Similarly, the importance attributed to emotional bonds in the workplace largely predicted the discussions on productivity arising in the 1950s, which was to be

considered a dependent variable of “willingness to work.” Broadly speaking, these tendencies foreshadowed present-day discussions on “quality of life” at the workplace.

Thirdly, in that discourse, worker health was analyzed in terms of human capital, which in turn was understood demographically or holistically. In the 1940s, there was virtually no scholarship from the field of industrial medicine that did not emphasize the economic and biopolitical relevance of population health for the Nation as a whole. Similarly, there was no disagreement over the fact that investments in health extended the economic value of human capital.

Finally, another distinctive feature of occupational medicine was the emphasis placed on the connection between the economic relevance of health and humanistic discourses. In addition to the *vile metal*, prevention of work-related diseases was justified by a series of moral arguments, such as humanitarian sensibility, social justice, Christian charity, and the spirit of solidarity. However, over the years, this humanism (even in its scientific versions) would become progressively eroded when faced with the unstoppable growth of economic rationality. The monetary significance of socio-medical action in factories, which professionals spontaneously performed, would over time become a reflexive feature of the discourse of occupational medicine. The “efficiency of the doctor’s office,” as Bazterrica called it (40 p.22), had to be tabulated numerically in two ways: “decreases in working days lost to illness and the increase in productivity by improving health and sanitary conditions” (40 p.22). By the 1950s, however, the humanistic discourse was still employed – as will be discussed in the following section – in order to limit the relentless advance of rationalization strategies in workplaces encouraged by the pro-productivity movement.

HEALTH AS A CONDITION FOR PRODUCTIVITY

After the Second World War, Europe experienced a “psychosis” of productivity, metaphorically speaking. In Argentina, the combination of import substitution industrialization, the increase

in real wages, and the extension of social benefits via employment, all characteristic of Peronism, had given rise to a certain uneasiness among business leaders and experts due to "the decrease in effective output per worker" (41 p.2), "the decline in workers' productive efforts," and "a significant reduction in working pace" (42 p.202) and in "productivity per worker" (43 p.4).

By the end of the war, these concerns began to be associated with the "inflationary threat." Economists warned that in order to avoid price escalation, increases in wages had to correlate with a rise in the marginal productivity of labor. However, it was not until the economic crisis of 1952, caused by a reduction in the supply of foreign currency, that the State took interest in productivity. As subsidies for national economic development could not be maintained, the only solution available to increase capital accumulation was an increase in the productivity of businesses (44 p.29).

During the 1954 National Conference on Productivity [*Congreso Nacional de la Productividad*], a multi-sector forum convened to confront this problem, encouraged by the government. Industrial, trade union, and State representatives attended the forum, all of whom expressed their deep concern on the matter. From that moment onwards, it was clear that "national welfare" could only be achieved through an increase in wealth, which in turn depended on productivity. Although Peronism touted the "campaign for productivity" as a true national cause, workers were the main targets. Indeed, after the end of World War II, this topic had given rise to a whole series of technical innovations, including the design of more accurate methods to calculate productivity. However, the emphasis placed on the rationalization of procedures to calculate production costs (both in businesses and in the national economy as a whole) should not overshadow the fact that one of the major issues in the problematization of productivity had a decidedly moral character. The "language" used to articulate this matter included constant reference to the *ethos* and "spirit" of productivity. This moral definition furthered the discussion of the topic in the field of psychology. A number of interventions were used to create psychological environments favorable to productivity, which in turn was

essentially understood as a mental, attitudinal, and habit-related issue.

In addition to the contributions from the field of psychology, all occupational sciences adapted their programs to a new tendency of the era. It is known that from the turn of the 20th century the relationship between health and production had been problematized in Argentina. The novelty of the 1950s with respect to the discussion of the relation between health and productivity was that the latter was approached from a technical point of view; that is, as a relation between quantities produced and the factors used in production, either by a firm, an industry, or the economy as a whole.

This relationship had several problems that occupational medicine would have to undertake. Various experts from the fields of medicine and industrial hygiene made up the technical commission at the National Conference on Productivity. Many recommendations were derived from their efforts, and they attempted to resolve the question of how to meet workers' needs without neglecting the tenets of "social justice" or forgoing the "humanitarian" goals underlying the missions of these disciplines. The medical recommendations centered on the improvement of workplace environments, the implementation of workplace accident and disease prevention plans, as well outlines of how to address "personal problems" affecting workers (44 p.175).

Among the different issues related to productivity, there were two causes of concern for the ruling classes of the time: absenteeism and *trabajo mañero*, a term used to refer to careless work (that is, an activity carried out without due diligence). Both problems were connected to health and resonated in the medical field. Absenteeism had a direct impact on productivity since the latter was calculated in terms of the number of hours worked. This issue had been problematized by physicians who had been pioneers in the production of statistics on absenteeism (o). However, productivity did not merely depend on production time, but rather on effort and the "quality" of work achieved; that is, how well workers performed their jobs. Although experts believed that the characteristics that allowed for quality work were not limited to physical performance, health was understood as a prerequisite. Furthermore, as previously

discussed, occupational medicine tended to widen its scope of action towards affective and social processes. Therefore, writers at the journal *Medicina del Deporte y del Trabajo*, for example, advocated for an integral definition of health and a comprehensive approach to problems derived from the world of work.

But before productivity became an issue of national concern, it had already been addressed by the fields of social medicine, occupational medicine, and social work. This debate was moderated by the reception of René Sand's work, as mentioned earlier. At the inaugural conference of the School of Social Services of the Universidad del Museo Social Argentino on June 23, 1930, Tomás Amadeo stated that one of the goals of social action was to ensure workers' and employees' efficiency through the implementation of a set of strategies that would go beyond the Taylorist program. With his critique of Taylorism, the president of the Museo Social Argentino intended to stress the centrality of the "human factor" – in its broadest sense – in production. The significance attributed to the human element coincided with Sand's ideas on productivity from 1920. Amadeo's speech explicitly drew from Sand's ideas when stressing the need to ensure workers'

health, which guarantees their *ability* to produce, the *education* that develops the *talent* to produce, and the *satisfaction* that determines the *will* to produce. (45 p.2) [Cursives in original] [Own translation]

In the field of occupational medicine, José P. Reggi was, from the 1950s onwards, charged with disseminating the concepts that had been initially laid out in Sand's *Organisation industrielle*:

Quality, economy, and ongoing production rest upon: health, which guarantees the possibility to produce; general and professional education, which develops the talent to produce; and satisfaction, which determines the will to produce. (17 p.7) [Own translation]

Even though this statement had become widely known since the 1930s within the fields of social assistance, social medicine, and

hygiene, in later decades it would center on the field of occupational medicine, foreshadowing one of the major challenges to productivity: how to generate in the workers the willingness to "co-operate" in increasing production. The centrality of this idea in conceptualizing work-related problems was due in part to its reiterative nature. However, it also became successful since Reggi transformed it into a kind of slogan. The so-called "Sand's tripod" summarized in one formula all of the variables upon which productivity depended: "ability, capacity, and will" to produce. Hence, health granted workers the "ability" to produce, it was what enabled workers to perform their tasks. Once again, it is possible to detect a symbiosis between biological standards and a technical-economic rationality.

The field of medicine continuously issued words of warning regarding the adverse effects that the ceaseless drive for increases in productivity would have on worker health. In this sense, a group of experts voiced their opinions through the platform provided by *Medicina del Deporte y del Trabajo* to decry what they considered to be "anti-physiological" and "anti-humanistic" excesses of the pro-productivity movement. They exposed the risks run by workers as a result of the effort to balance economic income and product prices through increases in productivity when, to give just one example, a healthy number of working hours was not respected (46 p.1). Furthermore, they charged that there was a "disregard for the acknowledgement of the individual as a human being" (47 p.708). Thus, worker health appeared, as late as the 1950s, as a limit to increasing productivity.

CONCLUSIONS

Throughout this article, we have examined five points from which an economic analytics of occupational health in Argentina have been outlined: discussions on the "price of man;" considerations on social medicine as part of the "human economy" perspective; discourses on healthy and efficient living; calculations made by factory physicians and the economically-oriented discourse of occupational health; and finally, the debate on productivity. It has been shown how, throughout

the first half of the 20th century, an economic perspective on health developed, which was characterized by a progressive operationalization of the concepts of vitality and "healthiness" for the purpose of profit making, along with the growing use of an economic rationale (the use of calculations, rules, and economic language) to evaluate occupational health problems and take due action.

Emerging from the analysis of these five central aspects were the "interactions" between health and economic processes, expressed and moderated by experts in numerous ways.

On one hand, a number of economic factors were used to justify action in healthcare. Reformers, hygienists, and physicians were faced with demand for healthcare based on both scientific and moral standards, but they found in economics the reasons that would make both employers and the State take stock of the benefits of disease prevention, the need to provide healthcare services in factories, and so on. Faced with "spirits scarcely sensitive to scientific reasoning" (48 p.666) that neglected humanitarian arguments, economics provided, as Sand stated, a "common language." On the other hand, occupational medicine and social medicine were the starting points from which to develop a new conception of productivity. Therefore, reformers and hygienists introduced a new "persuasive" style of intervention, which would be taken up and reinforced by industrial and occupational medicine in the 1940s. Over time, the persuasive role of factory physicians, supported by economic data, would become a characteristic feature of professional ethics.

A utilitarian ethic emerged within this movement, which saw healthcare as profitable and progressively limited the influence of arguments based on principle. In this article, we have seen how humanistic ideas and emotional reasoning operated as an "alternate" discourse, different from the economically-oriented approach. Both the core maxims of ethics and sense of duty strove to differentiate themselves from this utilitarian ethic, which was based on the assessment of the economic consequences of actions. Still, throughout the first half of the 20th century, economic reasoning was always imbued with some degree of moral consideration. For a long time, it

was considered that interventions in health were advisable when they were associated with economic benefit, but there were also other reasons beyond those related to profitability: charity, solidarity, and social justice. However, it was not until at least the end of World War II that the concept of the "right to health" was developed.

Just as the economic perspective was introduced in the socio-medical field, health also began to be seen as profitable in the worlds of business, production, and economics. As previously discussed from two different perspectives that left their imprints on socialist thinking and social medicine, Ruskin and Goldscheid called attention to the importance of the economic value of human life. In the Anglo-Saxon world, mutual aid societies and insurance companies, whose experiences that were particularly valued among Argentine hygienists and physicians, developed methods to calculate the "price of man" and pioneered the development of health prevention strategies. The discourse on healthy and efficient living, which had a great impact in Argentina, was partly derived from US-based insurance companies and the ideas promulgated by economists such as Irving Fisher. It is worth remembering that Fisher considered human life to be a form of capital, and he established a positive correlation between health and the income generated by that capital. Similarly, when discussing the technical and economic aspects of productivity, health was identified as a condition for constant increases in worker productivity.

While in the first case, appealing to an economic rationale functioned as a complement to ethics or science, and the "hard numbers" of economics were used to justify health protections, in the second, these protections were completely instrumentalized and turned into a means of generating economic value.

Nonetheless, the economic analytics of occupational health that has been detailed throughout this article shows the interaction among: a) processes inherent to capitalism; b) political methods and considerations that based political leadership on the spontaneous development of market exchanges; and c) the biological processes affecting the working population. Physicians were among the first to notice such interactions (49 p.40).

This observation suggests that throughout the 20th century, despite specific points of contention, the desire to govern as little as possible, on the one hand, and to intervene in the vitality of human beings, on the other, have tended to converge. That is, liberalism and biopower, freedom and security, far from confronting one another, have developed strategic alliances whose specific characteristics clearly merit further research.

ENDNOTES

a. The expression “economic analytics” is based on Michel Foucault’s ideas, stating that the economic analysis of disease began in 18th century Europe within the “utilitarian analytics” of poverty (1 p.93). However, it was not until the mid-19th century that we can recognize, in the English

literature on social hygiene (and later in Germany, Belgian, and French works) the attempts to assess the economic benefit of healthcare interventions, the “price of man,” and the losses associated with disease and death.

b. Within the framework of this study, it is understood that the relation between both the processes

of capitalist production and those of health and disease experienced by workers are issues that have been problematized throughout the years in different ways, for instance, in the fields of occupational medicine, occupational health, and worker health (2-4). Although this article does not go into such detail, it is worth mentioning that within each of these perspectives, the issue of the economic meaning applied to the relationship between work and health has been explored in both distinct and contradictory ways.

c. In this article, the term *population* makes reference to modern strategies of power. In Michel Foucault's genealogy of power, the term population originated in the 18th century as a new "collective subject," separate from other concepts of political thought (such as "the people"). It is defined as a set of variables that are immersed within the general regime of living beings, that constitute the basis for a number of calculated and thoughtful transformations (5 p.101). Population is articulated as such from the integration of certain technologies of power and different forms of knowledge. The relation among technologies of power, the emergence of population, and the construction of domains of specific objects of knowledge for this population is circular: "a constant interplay between techniques of power and their object gradually carves out in reality, as a field of reality, population and its specific phenomena. A whole series of objects were made visible for possible forms of knowledge on the basis of the constitution of the population as the correlate of techniques of power. In turn, since these forms of knowledge constantly carve out new objects, the population could be formed, persist, and remain as the privileged correlate of modern mechanisms of power" (5 p.107). Although this is the notion of population we use in this study, we should mention the remarkable contributions made (in its conceptualization and historicization) from the field of social epidemiology; contributions that enrich Foucault's definition when, for instance, social influences are materialized into physiological and anatomical features affecting health and expressed in social health inequities (6). This sheds light on one of the dimensions of population: "inequalities" (and broadly speaking, one of the strategies usually used to regulate it), which have been undervalued by Foucault (7 p.41).

d. John Ruskin was an English social theorist, philanthropist, debater, and writer. His social and economic thought was characterized by a critique of classical political economy.

e. Juan Biale Massé was a Catalonian physician and a lawyer who produced a diagnosis of the state of the working classes in the provinces of Argentina at the beginning of the 20th century.

f. Augusto Bunge was an Argentine hygienist and socialist congressman who was in favor of a social security system.

g. Alfredo Palacios was the first socialist legislator in Latin American. He promoted and drafted several laws on social protection in Argentina.

h. Biopower refers to a set of considerations and strategies through which, since Modernity, life has been introduced as a factor in the calculations of political power. It is the positive exercise of power over life with the intention of managing, extending, and multiplying it. Biopower encourages, reinforces, controls, improves, and organizes the forces subject to it (8 p.165). To achieve these objectives, biopower resorts to mechanisms that regulate uncertain events affecting populations (accidents, diseases, death, among others) in order to maintain balance.

i. Teodoro Tonina was professor of hygiene of the Faculty of Medical Sciences of the Universidad de Buenos Aires. He also authored a course on Social Hygiene. He worked as an Inspector for the National Council of Education.

j. Alberto Levene was head of the General Office of Public Health [*Dirección General de Sanidad*] and founder of the Military Hygiene Institute [*Instituto de Higiene del Ejército*].

k. We understand government to be a particular way of thinking about power, characterized by the ways in which actions are performed in a more or less calculated manner, which are meant to influence the possibilities of action of other individuals or groups (13 p.254).

l. José Pedro Reggi was one of the pioneers in the field of occupational medicine in Argentina. In 1948, he created the *Instituto del Trabajo* [Labor Institute], which was later renamed *Ateneo Ciencia y Trabajo* [Science and Labor Atheneum]. As noted by one of the reviewers of this article, Reggi took part in the 1936 "Nazi Olympics" in Berlin.

m. Germinal Rodríguez was an Argentine social physician and expert care provider. He was first an independent socialist, but later collaborated with Ramón Carillo in his term as Health Secretary during the Peronist administration.

n. Herbert W. Heinrich was an American engineer who was working for the Travelers Insurance Company when he created a grid to classify direct and indirect accident costs.

o. This matter has been further discussed elsewhere (38).

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