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THE INFLUENCE OF THE STUDY OF MEDICINE ON CLÉMENT JUGLAR'S FIRST TAKE ON THE ECONOMIC CYCLE, 1846-1862

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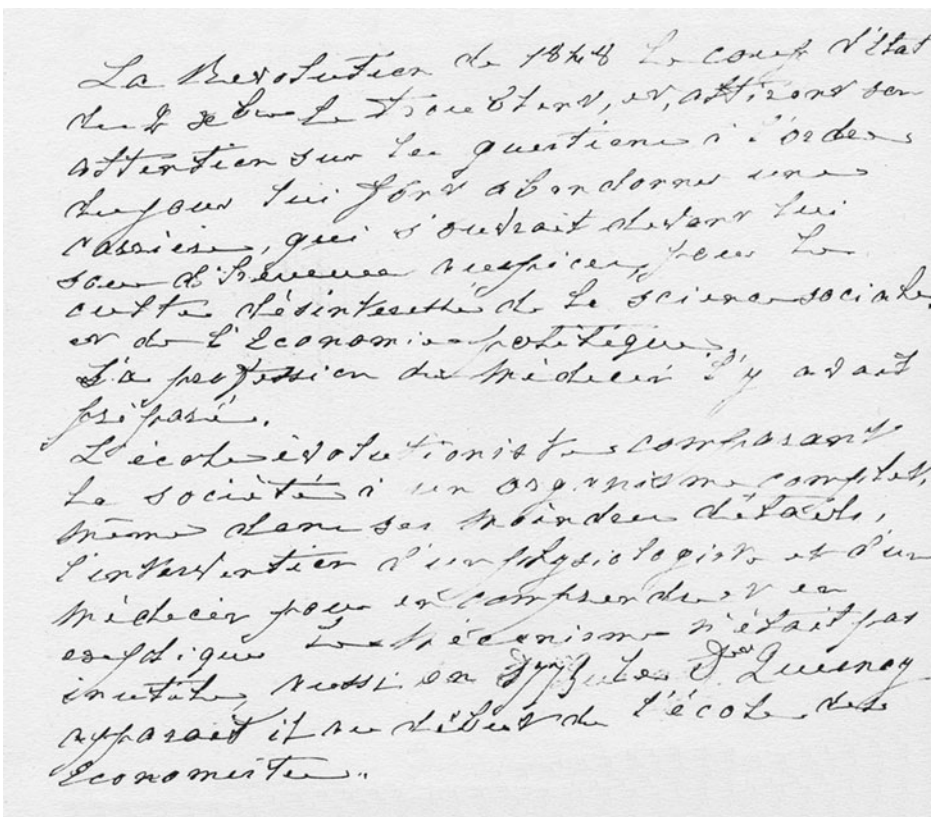

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La Révolution de 1848, le coup d'Etat du 2 décembre le troublant et attirant son attention sur les questions à l'ordre du jour lui font abandonner une carrière qui s'ouvrait devant lui sous d'heureux hospices pour le culte désintéressé de la science sociale et de l'économie politique.

La profession de médecin l'y avait préparé.

L'école évolutionniste comparant la societé à un organisme complet même dans ses moindres détails, l'intervention d'un physiologiste et d'un médecin pour en comprendre et en expliquer le mécanisme n'était pas inutile, ainsi en 1773 le Docteur Quesnay apparaît-il au début de l'école des Economistes.[1]

I. INTRODUCTION

In the historiographic tradition of economics, the name of Clément Juglar (1819-1905) is linked to a decisive break in modern analysis: a shift in the emphasis on ''crisis'' to that of ''cycle.'' It appears, however, that the economics profession was slow to follow all the avenues associated by Juglar himself with this shift of perspective. Not long after the publication of Juglar's book in 1862, a few economists were, nonetheless, following his lead at least in part. To some economists interested in the history of the discipline, the watershed could have been much more dramatic, for behind the conception of ''cycle'' in Juglar was the masterful use of a new empirical methodology. According to Joseph Schumpeter, Juglar had been innovative in three remarkable ways: in a systematic and targeted use of time-series data, in the conceptualization of an economic ''cycle'' and then a complete morphological categorization of its endogenous phenomena in terms of ''phases,'' and in his attempt to connect empirical observation of cyclical phenomena to an original theory of ''cycle.''[2]

Identifying Juglar as ''a type of genius that walks only the way chalked out by himself and never follows any other,'' Schumpeter noted as well that Juglar was ''a physician by training.'' The influence of medical ideas on Juglar's political economy

[1] ''*The Revolution of 1848 and the coup d'état of December 2, so troubling and drawing his attention to the questions of the day, made him abandon the career which opened before him at auspicious hospitals for the disinterested cult of the social sciences and political economy.*
The profession of medicine had prepared him for it.
For the evolutionary school, comparing society to an organism, complete even in its smallest details, the intervention of a physiologist and a doctor to make sense of and explain the mechanism was quite useful; also thus in 1773 had the doctor Quesnay appeared at the head of the school of the Economistes.''
Draft of a presentation by Clément Juglar, probably at the time of one of his first candidacies to the Académie des sciences morales et politiques [Academy of moral and political sciences] in 1886. In the Juglar Archives, Centre Walras-Pareto, Université de Lausanne, C 238. This is the first use made of numerous details deriving from previously unaccessed documents within archival materials held by the descendants of Juglar. Some of these materials are being cataloged and made newly available to researchers at the Université de Lausanne.

[2] Joseph Schumpeter (1931, especially p. 6). See also Schumpeter (1939), and above all, Schumpeter (1954, pp. 1123-24).

was already highlighted by Louis Wolowski in his oral commentary on Juglar's *On commercial crises and their periodic return in France, England, and the United States during the 19th century* (delivered in 1862). In referring to Juglar's analogy between the "social body" and the "human organism,"[3] Wolowski made the comments that the social body "has its illnesses and should have its cleansing. This cleansing has its rules and its laws, and Dr. Juglar knew how to describe them very ably."[4] Numerous times since then, however, the influence of medical ideas on Juglar's thought, particularly on his conception of the "cycle," has been questioned.[5]

With no formal education in economics,[6] in joining the ranks of its practitioners and theoreticians, Juglar undoubtedly borrowed extensively from many aspects of the culture of the time to which he had previously been exposed. The purpose of this article is to examine more closely Juglar's early intellectual biography to learn what were and to what extent there were specific influences on his very first formulations of economic cycle theory which reflect his study and practice of medicine in the first half of the nineteenth century. The objective is to consider, in light of the full intellectual context of the period, the positions of some earlier historians. It will be argued that medical themes did play a very major role in the genesis of the "vision"[7] of the cycle which Juglar was to develop in the middle of the 1850s. In going beyond the generic category of medicine, however, the actual medical paradigm in which Juglar was trained in Paris in the 1840s will be defined with greater precision than has been done in the prior literature, and the importance of its influence on several precise criteria, which were undoubtedly instrumental to his economics, will be evaluated.

Juglar's medical thesis, defended in Paris in 1846, shows him to have been trained within the framework of the great Parisian anatomical-clinical school, which, hand in hand with the birth of the modern hospital, revolutionized medicine in the first half of the nineteenth century. It is considered interesting and possible, therefore, to examine the impact of the ideas of "hospital medicine" on Juglar's conception of the economic cycle. This impact will be discussed in relation to three areas: methodological ideas, the concepts of "normal" and "pathological," and skepticism in relation to therapeutics. With the larger social scientific context of the early period of

[3]Wolowski (1862, p. 431) used the terms "corps social" and "organisme de l'homme."

[4]"a ses maladies, et il doit avoir son hygiène. Cette hygiène a ses règles et ses lois, et M. le docteur Juglar a su très habilement les exposer" (Wolowski 1862, p. 431).

[5]See, for example, at his death, A. De Foville (1905) and P. Beauregard (1908). Recently, Jürg Niehans (1992, p. 547) judged this influence to have been of little consequence and attached Juglar's inspiration more to his wider historical and cultural context. Peter Groenewegen (2001), however, considers the influence of medical thinking on Juglar to be major, citing his identification of "crisis" with "illness," his adoption of a complex concept of causality, his incorporating the influence of recuperative time on self-supporting mechanisms, and finally his persuasion that a methodology in which fact and theory are linked is at the base of a true economic and social diagnosis. Marie Gilman (1991), and then Dominique Pelissier (2000), basing their work on Jean Bourcier de Carbon, seem to have identified the impact of Bernardian experimental medicine on Juglar, but for reason of dates alone, it is clear that at the time when Juglar was initially formulating his theory of the economic cycle, he could not have been influenced by the experimental medicine of Claude Bernard. See also J. Bourcier de Carbon (1971, vol. 2, p. 73).

[6]Schumpeter (1954, p. 1123 n. 3).

[7]The hermeneutic reformulation of the Schumpeterian notion of "vision" recently proposed by R. Heilbroner is adopted here. See Heilbroner (1990a, 1990b) and Heilbroner and Milberg (1995).

Juglar's adulthood under consideration, it will be concluded that Juglar's ''vision'' of the ''cycle,'' a theory competing with the previous economic conception of ''crisis,'' did not fulfill its potential to become a generally accepted political economic theory in France in the second half of the nineteenth century: in short, in this era of great controversies, it had little political appeal, despite its being an ingenious response to the stagnation of the liberal economic paradigm after the Revolution of 1848 and the rise of the Second Empire in 1851.

II. JUGLAR AND THE PARISIAN ANATOMICAL-CLINICAL SCHOOL

Contrary to Jurg Niehans's assertion that medicine had little influence on Juglar's economics, it will be argued that Juglar's methodology in analyzing economic phenomena was so strikingly similar in many respects to contemporary approaches in medicine that it would almost appear to be a direct adaptation of that which he had learned in his medical study. Most of that methodology, as it is now to be shown, he acquired from his student years in the Parisian anatomical-clinical school. In the history of medicine, as in the history of many disciplines, place and time are perceived to have had a profound importance. Michel Foucaut (1963), Erwin Ackerknecht (1986), and other historians and philosophers have noted that the 1840s saw the Parisian clinical school reach its apogee. The first half of the nineteenth century witnessed the ''birth of the clinic,'' the birth of the modern hospital, and the establishment of the principal Parisian teaching institutions, notably the schools of medicine. Together they would lead to a major change in the paradigm operative in medicine.

Paris, Juglar's city, was the principal center in France of the nineteenth-century medical renaissance. ''Hospital medicine,'' which drew the focus of medical practice to the hospital as the site of care, succeeded the earlier ''bedside medicine,'' in which the patient's experience of an illness would be recounted and observed, presumably at the sick one's bedside at home. After 1850, hospital medicine began to be superseded by experimental or ''laboratory medicine.'' Honoré de Balzac caught precisely the verve of this revolution, ''[this] medicine [is] modern, whose most glorious claim to fame is to have passed, from 1799 to 1837, from the state of conjecture to the state of positive science,'' adding that this evolution took place under ''the influence of the great Parisian analytical school.''[8] While the experimental medicine of Claude Bernard and Louis Pasteur would surpass the anatomical-clinical school of medicine later in the century, up until mid-century the doctors of Balzac's ''positivist'' era dominated debates at the theoretical level.

The ''masters'' of the Faculty of Medicine in Paris, to whom Juglar dedicated his 1846 thesis on the influence of heart illnesses on the lungs, are representative of the generation of ''eclectics,'' who after 1830 looked to go beyond the earlier

[8]''la médecine moderne, dont le plus beau titre de gloire est d'avoir de 1799 à 1837, passé de l'état conjectural à l'état de science positive ... l'influence de la grande école analyste de Paris'' (from *La maison Nucingen [The Nucingen House]*, cited in M. Grmek 1999, vol. 2, p. 147).

controversies between a theoretical approach to physiology, following Francois Broussais, and a practice of clinical medicine, after Jean Nicolas Corvisart, Gaspard Laurent Bayle, or René Théophile Laennec. The generation of Juglar's teachers, which coincided with the most brilliant period of Parisian hospital medicine, found a certain representative in Auguste-François Chomel (1788-1856), the most well known of its ''masters'' and one of Juglar's own professors. This specialist of pathological anatomy, probably the most eminent clinician of Paris in the 1840s and one of the great professors of the Faculty of Medicine of Paris, was smitten with *méthode numérique* [the numerical method]. He was the successor of Laennec at the Hôpital de la Charité (1827). All the other individuals whose names are cited by Juglar were surgeons or specialists in pathological anatomy.[9]

While less doctrinal and systematic than some other schools of medicine, there was a universal attribute shared by its ''members,'' in that they were all partisans of the ''medicine of lesions,'' which substituted itself for an earlier ''medicine of symptoms'' and which characterized itself through several dominant traits: empiricism, specialization, and therapeutic skepticism. Chomel defined in fact this prosaic ''doctrine of the School of Paris'':

> This doctrine distinguishes itself from others, not through one of its sometimes brilliant but always mistaken theories, which pretends to explain, with the aid of a hypothesis, all the phenomena of life, but rather through its constant tendency and active impulse to emphasize what is positivist in medicine, that is to say, well-observed facts and the rigorous consequences which flow from them.[10]

What became most important for the mid-nineteenth-century French doctor then was to identify lesions, inferred from the different signs given by the body in a rigorous examination through sight, sound, and touch (these senses themselves interconnected via the new techniques of direct osculation, such as the use of the stethoscope as refined by Laennec at the Hôpital Necker in 1816).[11]

Juglar, a student at the beginning of the 1840s, was formed by this ''observing'' generation. In his medical notebooks one finds the abundant notes he took, in the

[9]The other ''maîtres'' thanked by Juglar in his medical thesis were the following. Auguste Bérard (surgeon), was a member of the *Académie Royale de Médecine* [French Royal Academy of Medicine] and founder of the *Société de chirurgie de Paris* [Paris Society of Surgery]; he held the Chair of Clinical Surgery at the Faculty of Medicine. Léon Auvity was a surgeon at the Hôpital des Enfans-Trouvés and head surgeon of the Municipal Guard of Paris. Jacques Baron also worked at the *Hôpital des Enfans-Trouvés* and was member of the *Académie Royale de Médecine* (pathological anatomy section, like F. Chomel). E.R.A. Serres was an anatomist and member of the *Académie Royale de Médecine* (anatomy and physiology section). More biographical details on these doctors can be found in C. Lachaise (1845).

[10]The ''doctrine de l'Ecole de Paris'': ''Cette doctrine se distingue des autres, non par une de ces théories quelquefois brillantes et toujours erronées, qui prétendent expliquer, à l'aide d'une hypothèse, tous les phénomènes de la vie, mais par une tendance constante et une impulsion active vers ce qu'il y a de positif en médecine, c'est-à-dire les faits bien observés et les conséquences rigoureuses qui en découlent'' (F. Chomel 1817, VII).

[11]In Juglar's student notes of Chomel's lectures on general pathology, unpublished and unedited, in the family's archives, one sees clearly how an empirical methodology was already being inculcated in Juglar from the start: the techniques to diagnose a medical problem were largely observational and this is precisely the methodology that he applied later to his economics. (Access to student notes, courtesy of Juglar's great-grandson, Jean de Mathan, received with sincere thanks.)

years 1841-1844, on the main sources of this tradition: on Armand Trousseau's *Traité de Thérapeutique* [*Treatise on therapeutics*] and on Chomel's course in general pathology, which begins with the following definition of "illness": "a disorder coming through as noticeable either in the material disposition of the constituent parts of the living organism or in the exercise of its functions."[12] These doctors followed the French professor of anatomical pathology Marie François-Xavier Bichat (1771-1802), who had taught that death is the mirror image of life. Yet another generation removed from Bichat's teaching, Juglar, in the marginalia of his doctoral thesis in medicine, significantly also cited directly from Bichat, from his *Recherches sur la vie et la mort* [*Studies on life and death*]. The notion of a reversal, which Bichat had previously formulated in the perceptions of death and life, had seemingly come to be appreciated as the condition of the existence of the human species: while death at the individual level was an end, because humans are mortal, at the societal level, subsequent life or reproduction was a necessity for the species as a whole to continue to exist.[13]

The scope of Juglar's doctoral thesis in medicine is characteristic of this Parisian clinical school in its advanced stages, for he set out to study the combination of effects on "the regular course of life" which one "mechanical" organ, such as the heart, and one predominantly "chemical" organ, such as the lungs, could have.[14] For this methodology, he relied on contemporary works by Gabriel Andral, Jean Cruveilhier, and Pierre Louis.[15] It is here neither the purpose nor the place to comment in detail on Juglar's thesis, but it is important to note that at the outset of his Introduction, Juglar explained that in order to demonstrate "it is necessary to prove [logically] and to see [empirically] whether the pathological anatomy and the symptoms have a relationship"[16] with the theses advanced. Juglar thus showed his early attachment to empiricism in the context of establishing an appropriate methodology for proven findings, which he linked with a specific terminology, similar to the one he used later to communicate his economic ideas. His was a contemporary skepticism, which doubted the therapeutic power of medicine until it was empirically established, an attitude which, due to many observed failures to cure, later would translate for him into the conviction that the extremes of the economic cycle. like those of a disease, were essentially without cure.

[12]"un désordre notable survenu soit dans la disposition matérielle des parties constituantes du corps vivant soit dans l'exercice de ses fonctions,"and citing Bichat "la vie est l'ensemble des fonctions qui résistent à la mort" (Clément Juglar, Medical notebooks in the Juglar family archives).

[13]From the medical point of view, continually people are dying from illnesses, diseases, aging, etc. While there is some hope in trying to cure the ill, most importantly, hope lies in new births. A jump from this macro-perspective in medicine to a similar one in social science was obvious for Juglar when he turned to economics: a capitalist economy is constantly facing the death and new birth of enterprises.

[14]"*l'accomplissement régulier de la vie*" is what one "*organe mécanique* " and one "*organe chimique*" manage (Juglar 1846).

[15]Their titles were characteristic, but notably, they included *Clinique médicale* [*The medical Clinic*] by Gabriel Andral, *Traité d'anatomie pathologique générale* [*Treatise on general pathological anatomy*] by Jean Cruveilhier, and the works published by Pierre Louis in *Mémoires de la société médicale d'observation*. [*Memoires of the Medical Society of Observation*].

[16]"il faut prouver et voir si l'anatomie pathologique, les symptômes, sont en rapport" (Juglar 1846, pp. 7-8).

III. THE GENESIS OF JUGLAR'S METHODOLOGY: EMPIRICISM AND STATISTICS

Juglar's methodology as an economist appears to have been empirical, based on an intensive use of statistics. Starting with his first work on the "cycle" in 1856, Juglar used time-series data for a few indicators, among them notably the variations in bank loans and other monetary variables, demographics, imports and exports, and the prices of grains. His time series are classified, analyzed, and compared in the framework of synoptic tables, tables which allowed Juglar to pick out a representative series, that of the variations in the amount of money created by the bank for loans. By 1857, he explained that this series, the one which "the most accurate table gives,"[17] constituted the "point of comparison"[18] for the whole of the fluctuations generally. Why? For essentially quantitative reasons was Juglar's explanation: it is this series which presents "the greatest regularity and the most noticeable differences."[19] Moving from significant variations in bank loans and changes in bank reserves, one can see correlations to all the other economic and demographic data, which also present distinct "maxima and minima," but ones that are less "noticeable."[20] Analysis of each separate cycle also confirmed, for Juglar, the point that every variable, despite its own historical (in particular, political) singularities, permitted recognition of the same quantitative relationships.

What possible influences from his study of medicine are detectable in Juglar's use of statistics in his economics? It is first of all crucial to recall that traditionally the years 1830-1850 define generally an "era of statistical enthusiasm," according to the phrase of Harald Westergaard (1932). It was without doubt extremely important that it was principally in medicine that the debate over the utility of statistics was raging. There were the French hygienists who as part of their commitment to recognizing scientifically matters of hygiene, advanced the development of statistics and empirical investigation. From 1829 on, the hygienists—among them, Louis-René Villermé, Alexandre Parent-Dûchatelet, and Louis Benoiston de Châteauneuf—created the *Annales d'hygiène publique et de médecine légale* [*Annals of public hygiene and legal medicine*] in which, in particular up until 1853, two decisive theoretical caps would be rounded. On the one hand, the systematic use of the numerical method would be advocated to measure precisely the influence of specific environmental conditions on the health of this or that population. On the other hand, the hygienists were setting the factors of the natural environment into the background to replace them progressively with technical and, especially, social factors.[21]

Pierre Louis inaugurated in 1828[22] a specific statistical approach, the "numerical" method, which had strongly nuanced the theoretical conclusions of Broussais on the therapeutic virtues of bloodletting. Influential discussion over statistics came, however, directly to Juglar through the anatomical-clinical school, which entered

[17]"en donne le tableau le plus fidèle" (Juglar 1857b, p. 255).
[18]"point de comparaison" (Juglar 1857a, p. 37).
[19]"la plus grande régularité et les différences les plus sensibles" (Juglar 1856, p. 559).
[20]"différences maxima et minima," "moins sensibles" (Juglar 1857b, p. 255).
[21]B. P. Lécuyer (1987); J. Léonard (1981, ch. IX); B.-P. Lécuyer and E. Brian (2000); Ann F. La Berge (1992).
[22]P. Armitage (1983). See especially J. Piquemal (1993).

into the debate over the appropriate use of statistics in medical training and practice. Having been attacked particularly on this statistical method, Louis replied, dedicating a chapter of his work in 1835 to underlining the following: that "true experience in medicine cannot result but from an exact analysis of numerous facts, well established, classed according to their similarities, compared with care, and counted."[23] Over the course of very lively exchanges, which developed in the mid-1830s first at the *Académie des sciences* [Academy of sciences] (1835), then at the *Académie royale de la médecine* [Royal Academy of Medicine] (1837),[24] Louis and his disciples—who had created the *Societé médicale d'observation* [Society of Medical Observation] in 1832—would receive the support of the great clinicians, such as Jean-Baptiste Bouillaud and Andral, and especially Chomel, the latter having protected Louis and let him work in his wards at the *Hôpital de la Charité*. Chomel, one of two honorary presidents of the *Societé médicale d'observation*, would in fact praise numerical analysis in his *Eléments de pathologie générale* [*Elements of general pathology*], defining this approach in the following way:

> To count the facts after having collected them and to seek to deduce from their similarity and their number several exact results: of the causes which created the predisposition or determined the illness, or of the phenomena which characterize the illness, its course and its varied endings, or lastly of the effect of the means of treatment which are used to oppose it.[25]

From 1830 on, followers of Louis's numerical approach would bring a statistical methodology to the empirical context of the anatomical-clinical school. The rise of the numerical method highlighted some of the limits in the anatomical-clinical approach as the pioneers from Bayle to Laennec had developed it: illnesses were identified and classified, but causes remained outside their grasp and therapies were most often discovered by chance. For Louis, statistics were not a simple methodological appendix; they became instead one of the modalities obligatory to all medical research and one of the principles decisive in every analysis and proof. Statistics verify one of the major conditions of rigorous research, which clinical analysis and practice demand: to provide identically sound, complete, and precise facts. The numerists committed themselves to a complete analysis of every case, by using tables readable in two directions: along a (horizontal) line, where they provided the chronology of the affliction, and down (or up) a column, where the different semiologic and therapeutic data are disassociated and distributed; the clinician can thus find the "laws" by the constant presence, or absence, of certain signs and lesions, by the frequency of this or that association, etc.

[23] "l'expérience véritable en médecine, ne peut résulter que de l'analyse exacte de faits nombreux, bien constatés, classés d'après leur ressemblance, comparés avec soin, et comptés" (Louis 1835, p. 98).

[24] This debate, which led to much discussion at the *Académie royale de la médecine*, was paralleled by a similar one in the Paris *Académie des sciences* regarding the applicability of "statistics" to medicine for which a report catalysed by the following work of Civiale was commissioned: Jean Civiale, *Traité de l'affection calculeuse ou recherches sur la formation, les caractères physiques et chimiques, les causes, les signes et les effets pathologiques de la pierre et de la gravelle, suivies d'un essai de statistique sur cette maladie* (1838).

[25] "Compter les faits après les avoir recueillis, chercher à déduire de leur rapprochement et de leur nombre quelques résultats exacts, soit sur les causes qui ont préparé ou déterminé la maladie, soit sur les phénomènes qui la caractérisent, sur son cours et sur ses terminaisons variées, soit enfin sur l'influence des moyens de traitement qu'on lui a opposés" (Chomel 1856, p. 589).

During his medical work, Juglar was himself immersed in the numerists' statistical environment. In the introduction to his thesis he explains that he has separated himself from "hypothetical solutions" to the problem posed, that he has needed "a hospital-practice basis much longer that the one which he has been able to acquire," and that he has thus relied on the positivist literature on the subject; he noted here that he has used a typically numerist method: "I extracted from other authors the observations which came as corroboration to the small number of facts which I had observed; I compiled them and grouped them together [with my own], forcing myself to see the links through which the attributes come together, follow one another, and the order in which they succeed one another."[26]

Several characteristics of the numerist approach are specific and signal a decided closeness to the method Juglar was to develop a few years later in political economics. The numerists applied statistical research *directly to the illness*, and in that context quantification permitted progress in the areas of symptomatology, therapeutics, and etiology for each particular affliction. The empiricist methodology, based on the systematic and intensive use of statistics and employed a little bit later by Juglar for his study of economic cycles, was largely borrowed from the ideas of the clinical "masters" Juglar had followed at the Faculty of Medicine in Paris in the first half of the 1840s: from Chomel, for example, who refused systems and considered it lazy and dangerous to inquire about the causes of illness or the affects of remedies and who protected the numerists like Louis who, as Ackerknecht astutely noted, "was the first to want to make of them [statistics] the foundation of medicine."[27] Jules Gavarret also evoked this meeting point between science and medicine, when he noted, in 1840: "At the time when we started our medical studies, we heard talk of nothing but *mathematically* proven propositions, *mathematically* established laws. From the professor and the Academician, down to the most humble student, the whole world spoke the same language."[28]

Not only did Juglar come out of an environment in medicine in which debate over the use of statistics had been very lively, the empiricism and use of statistics which Juglar seems to have inherited from his medical training, resembles much more closely one particular methodological perspective than another, i.e., that of the numerists rather than that of the hygienists. While Juglar had a theoretical purpose in mind, the hygienists' basis was a medical doctrine which considered statistical research for the policy use of administrators and government officials.[29] The *Statistique Génerale de la France* [The Office of General Statistics of France] proved very useful to them in having been created in 1833 to collect and organize into tables the statistics of other

[26]"j'ai extrait des auteurs les observations qui venaient corroborer le petit nombre de faits que j'avais observé, je les ai réunis et groupés, en m'efforçant de faire voir les liens par lesquels les accidents s'unissent, s'enchaînent, l'ordre dans lequel ils se succèdent" (Juglar 1846, p. 10).

[27]"fut le premier à vouloir faire d'elles [les statistiques] le fondement de la médecine" (Ackerknecht 1986, p. 25).

[28]"A l'époque où nous commençâmes nos études médicales, on n'entendait parler partout que de propositions *mathématiquement* prouvées, de lois *mathématiquement* établies. Depuis le professeur et l'Académicien, jusqu'au plus humble élève, tout le monde tenait le même langage" (J. Gavarret, *Principes généraux de statistiques médicales*, 1840, cited in J. Piquemal 1993, pp. 81-82).

[29]Statistical analysis began to gain ground in virtually all social contexts in which the "hidden variable" of measurable economic well-being was represented. Thus, even without causal interrelation, both the fields of medicine and financial investment were caught up in the range of its impact.

administrations. Placed initially under the authority of the *Ministère du Commerce* [Ministry of Commerce],[30] the Office exploited the five-year censuses for analyzing population changes. The Office was, however, to also be of use to Juglar's need for data, and its second director, Alfred Legoyt, who succeeded Alexandre Moreau de Jonnès in 1852, would provide Juglar with part of his documentation.

Juglar would move into a group of contemporary economists who also had their version of differences regarding the pertinence and possible integration of statistics. The rise in the institutional use of statistics was not without influence on the group of French liberal economists whom Juglar joined at the beginning of the 1850s.[31] Taking their distance from some of the criticisms of the use of statistics launched by Jean-Baptiste Say, they underlined, instead, the fertility of their use. Louis Wolowski wrote, for example, in his *Etudes d'économie politique et de statistique* [*Studies of political economy and statistics*] (1848), dedicated to Adolphe Quételet: "Statistics let the progress and the development of social phenomena be known, by means of numeric states, which confirm the successive situations of society in terms of its different aspects of which knowledge is necessary in order to appreciate the elements of the political, civil, intellectual, moral, and industrial existence of nations."[32]

Shortly thereafter, the article "Statistiques" [Statistics] in the *Dictionnaire de l'économie politique* [*Dictionary of political economy*] (by Joseph Garnier) confirmed this new alliance between statistics and liberal political economy.

Thus, there is much relevance for the discussion of influences on Juglar's economic thought in considering the use of statistics by individuals from different milieus contemporary to Juglar, and three in particular: physicians (both hygienists and numerists), administrators of statistics, and liberal economists. Among yet other probable sources of influence on Juglar, one could also mention in particular the financial and stock-market newspapers, very fond of statistics and in full expansion from 1836 on. In the second half of the 1830s, in the middle of a period of press liberalization in France and at the time when an affordable press was developing, *L'Actionnaire* [*The stockbroker*], *L'Europe Industrielle* [*Industrial Europe*], *La Bourse* [*The Stock Exchange*], *L'Egide* [*The Aegis*], and still other newspapers were created. The business community eagerly accepted the presence of statistics in the press, albeit in a rather artisanal fashion. In 1839 a journalist of *The Stockbroker* commented that statistics allowed for the observation of "a sort of periodicity such that men of foresight have been able to announce their return."[33]

It is clear that Juglar was being trained in medicine in an environment in which vigorous debate reigned over the use of observation, data, and statistics and that

[30]A. Desrosières (1993). See also H. Le Bras (1986); T. Porter (1986, pp. 27-30).

[31]Juglar joined the *Societé d'économie politique* [Society of Political Economy] in 1852. His first economics and demographics articles were published between 1851 and 1854 in the *Journal des économistes*, the instrument of the *Ecole libérale de Paris* [Liberal school of Paris].

[32]"La statistique fait connaître la marche et le développement des phénomènes sociaux, au moyen d'états numériques, qui constatent la situation successive de la société sous les divers aspects, dont la connaissance est nécessaire pour apprécier les éléments de l'existence politique, civile, intellectuelle, morale et industrielle des nations" (Wolowski 1848, p. 418).

[33]Cited in Gilles (1964).

early on he took interest in the financial sphere in which data collection was actively pursued. These similar expressions in both fields gave him empirical modes for beginning his analysis of business-cycle phenomena. Acceptance of his first major publication, *Les Crises*, drew him directly into the intellectual context of the debates over statistics, specifically in the *Societé des économistes* and in contemporary statistical societies. It is, however, noteworthy that—by mid-century—only very shortly after his studies in medicine, Juglar had already begun to participate in the purest of statistical circles, with his publications in the *Annuaire de l'économie politique et de la statistique* in 1854 and 1856. He certainly believed that facts, in the form of data, could serve as the foundation to theory as the means of revealing economic regularities, if one should wish to discover them.

IV. THE CYCLE AS NORMAL PHENOMENON

Within Juglar's first writings in economics, there was already an analysis of the cycle, which used facts and theory. His first major title in economics came with the publication in 1862 of the first edition of his work, *Des crises commerciales et de leur retour périodique en France, en Angleterre et aux Etats-Unis pendant le 19^{e} siècle*. This work had, however, been preceded by several articles of which the very first attribution of a piece in economics to "Dr. Juglar" appears to date back to a short response to Adolphe Thiers in the *Journal des économistes* [*Journal of Economists*] in 1851. *Journal des économistes* was the publication of the wing of the liberals Juglar had come to join,[34] and in the following three years, he would publish in it quite long articles on population, on colonization in Algeria, and on the connections between agriculture and industry. His first text specifically on the economic cycle, "*Des crises commerciales*" ["Commercial Crises"], was published in 1856 in *L'Annuaire de l'économie politique et de la statistique* [*The Annals of political economy and statistics*]. This was followed by a longer text, "*Des crises commerciales et monétaires de 1800 à 1857*" ["Commercial and monetary crises from 1800 to 1857"], published in two parts, in April and in May, 1857, in the *Journal des économistes*.[35]

Two original characteristics of Juglar's analysis are mentioned most often by its commentators: first, he proposed an endogenous approach to the cycle, and second, correlatively, for him the only cause of economic depression is the prosperity which precedes it.[36] It is, however, indispensable to realize additionally that, within his analysis having these two characteristics and the statistical series he employed in order to lay out his theory, which made changes in bank-loan amounts the most important variable of the cycle, Juglar based his whole approach on the normalcy of

[34]On these biographical elements, see the death notice of P. Beauregard (1908).
[35]Juglar (1856, 1857a, 1857b, 1862).
[36]This assertion is too often parroted by historians of economic thought (following Schumpeter, who adopted it probably from Tugan-Baranovsky), as if Juglar were caught in a circular logic without explanation, when in fact, his meaning—if there were no extremes of speculation, there would be no severe depths of depression—and his explanation for the impact of credit go without being understood.

the business cycle, through the following distinctions: (i) the cycle is organically *inherent* in industrializing economies, (ii) social and political phenomena are *determined by* economics, and (iii) the cycle is a *necessary* condition for growth in the industrial economies.

First, Juglar's conception of a cycle was of a phenomenon *organically linked to the new economic activity* of the industrial revolution; it is proper to the establishment of new economies in which the old economic base of agriculture is (very) progressively being wiped out by new industrial activity. Juglar posited at the outset the development of two distinct characteristics of the new economy: big industry and big firms and their intricate domestic and international interrelationships, on the one hand, and financial institutions, due to the increasing need for obtaining funds and credit, and the ensuing intricacies of speculation on economic activity, on the other. Juglar believed that uncertainty comes with the increased complexity of interrelated financial needs, production capacity, and market responses. He saw gains and losses in production as the source of a collective phenomenon of excitement and/or disappointment. In the boom phase of the cycle, speculators of all sorts place, in Juglar's words, ''unlimited confidence in the future which is presented to them in flying colours'' and let ''the passion for the game take over all imagination.''[37] For Juglar, although such a reaction cannot be eliminated, because, as he wrote, ''these excess of speculation are too deep within human nature to prevent their action by any counter measure,''[38] the upswing also cannot last forever. Speculation is fundamental to the financial needs of industrializing economies, and it is intimately linked with the monetary instruments of money and loans. The providers of these instruments, particularly the banks, are themselves drawn into the cyclical ups and downs of speculation; according to Juglar, they merely follow the movement, but only for so long as they can afford to—''banks suffer crises; they do not produce them.''[39]

Second, Juglar's allusion to ''industrial nations'' also underlined his conception of the *determinacy* of social and political phenomena *by economics*. He asserted vigorously that ''instead of attributing business malaise to [political] upheavals and revolutions, we ought to look for their cause and origin in the spread between speculation and production gluts,''[40] hence in economic phenomena. Cyclical fluctuations affect the totality of economic phenomena (commercial and banking), and by the same token, they also impact principal population changes (births, deaths, and marriages). To some extent, Juglar subscribed to a liberal perspective on industrialization which foresaw the substitution of old military conflicts between societies reduced to warlike and violent behaviour and subject to revolt, by new trade and industrial rivalries, which societies would resolve peacefully and progressively, despite ruthless competition. As a result, all

[37] ''une confiance sans borne dans l'avenir, qu'on se représente sous les couleurs les plus brillantes'' and ''la passion du jeu s'empare de toutes les imaginations'' (Juglar 1857a, pp. 57, 59).
[38] ''ces excès de la spéculation sont trop dans la nature humaine pour qu'on puisse les prévenir par aucune mesure'' (Juglar 1857a, p. 37).
[39] ''les banques subissent les crises et ne les produisent pas'' (Juglar 1862, IV).
[40] ''au lieu d'attribuer le malaise commercial aux troubles et aux révolutions, il faudrait chercher la cause et l'origine de ces dernières dans les écarts de la spéculation et l'encombrement des fabriques'' in ''nations industrielles'' (Juglar 1857a, p. 38).

demographic phenomena,[41] in fact all events related to work, and all the activities and conditions of life, were for him determined by economics.

Third, for Juglar the cycle is progressive and its cyclicity is *the necessary pattern of growth* of the new system: ''Several times, since the beginning of this century, we have passed through similar disturbances, to come out of them more vigorous than ever and to attain unhoped-for commercial development.''[42] This pattern is the counterpart to the *innovative* character of modern industry. Its shrinking phase sanctions the weak and the imprudent, but in return, ''the others, robust enough to resist, take up the course of their operations again with new vigour, relieved of the obstacles of imprudent speculation.''[43] Significantly, Juglar contrasts the situations of art and of business. In the arts, the astute observer can always see ''epoques of renaissance and of decadence,'' which ''if one desires to represent them by waves of a line, as in the diagrams used in statistics, one observes that the summits of art will always drop.'' A great difference is observed in the situation of business: ''those [peaks] of commerce and industry rise without cease.''[44]

Whence was Juglar able to extract a conception of the normality of the economic cycle? Juglar's thinking is all the more interesting, given that in the context of his earliest publications, in the circles of contemporary liberal thought in France, the ''economic cycle'' did not really figure as a notion in debates over the causes of economic crises. Among the liberals close to Juglar, it appears that there was a complete absence of the idea of ''cycle'' conceived as a normal phenomenon and the reiteration of the old idea of the impossibility of general overproduction—it was always possible for punctuated upsets to occur, but for essentially exogenous reasons, whether political or natural. Absence of reference to an economic cycle is noticeable in the series of articles published in the *Journal des économistes* at the moment of the economic crisis of 1847,[45] as well as in the entry ''*Crise*'' [Crisis] in the French *Dictionary of political economy* (1852). In this latter work, Charles Coquelin defined ''crisis'' as a ''disturbance which business undergoes, which troubles its course and in some measure suspends its progress.''[46] Earlier, ''crisis'' had had an exclusively exogenous origin. With the development of credit, it had become only recently

[41]It is interesting to note that in his early papers on demographics, Juglar compared economic crises to military encounters, and economic casualties to loss of life on the battlefield: ''Voila le bulletin de la défaîte de l'industrie en trois ans [1846-1848]. Il reste sur le champs de bataille 141.000 hommes: 95.000 qui auraient du naître, pour leur bonheur ne voient pas le jour!'' (Juglar 1852, p. 80). The reasoning is that economic crises affect the layoff of workers in industry which in turn leads to poverty, problems of disease and hygiene, and a decrease in the survival rate.

[42]''Plusieurs fois, depuis le commencement de ce siècle, nous avons passé par de semblables gênes, pour en sortir plus vigoureux que jamais et atteindre un développement commercial inespéré'' (Juglar 1857a, p. 36).

[43]''les autres, assez robustes pour résister, reprennent le cours de leurs opérations avec une vigueur nouvelle, débarrassés des obstacles d'une imprudente spéculation'' (Juglar 1857a, pp. 38-39). This is a clear expression of a Darwinian ''survival of the fittest'' approach in economics.

[44]There are ''époques de renaissance et de décadence'' in art, however, ''si, par un procédé graphique usité en statistique, on veut les représenter par les ondulations d'une ligne, on observe que les sommets de l'art vont s'abaissant toujours, tandis que ceux du commerce et de l'industrie s'élèvent sans cesse'' (Juglar 1862, IX).

[45]G. de Molinari (1847); H. Say (1847, 1848); L. Faucher (1847).

[46]''dérangement subit des affaires, qui en trouble la marche et dans une certaine mesure en suspend le cours'' (C. Coquelin 1852, p. 526).

described as ''almost periodic.'' Its new character was increasingly explained by the institutional factors connected to credit, as, for example, in Coquelin, as due to the ''bad constitution of credit,'' and more precisely ''the monopoly exercised by certain privileged [bank] branches.''[47] Crises ''will cease to produce themselves''[48] under the full liberty of banks was the accompanying assertion.

On the other hand, the idea of cycle was present in other sectors of opinion at the time when Juglar was about to publish his first texts. The periodicity of a phenomenon had been rapidly spotted by the financial press, whether in *L'Actionnaire*, *L'Europe Industrielle*, *La Bourse*, *L'Egide* or any other of the newspapers which were newly created.[49] Representatives of the business community (often both protectionists and interventionists) identified rapidly with the presence of the cycle. In December 1839 already, a journalist of *The Stockbroker* explained: ''we have been able to observe that crises renew themselves with a sort of periodicity such that men of foresight are able to announce their return a few years in advance and at more or less determined epoques.''[50] It is particularly undeniable that, as a great reader of the financial press, Juglar couldn't help but be attentive to the numerous articles mentioning ''commercial crises'' and their periodicity measured at six/seven years, according to different ''thermometers'' [''barometers''] (measuring the changes in savings deposits, in particular by the utilization of time-series).

The idea of cycle was of course present in, and central to, socialist thinking. For the Saint-Simonians as well as the Fouriéristes, the succession of critical, organic periods punctuates development.[51] In his *De la misère des classes ouvrières en Angleterre* [*On the misery of the working classes in England*] (1840), Eugène Buret extended the efforts of Sismondi to identify the pathologies of capitalism and to consider the recurrence of crises as the principal sign of a dysfunctional economic system. At the beginning of the 1840s the theme of cycle is found in Pierre-Joseph Proudhon,[52] as well as in Friedrich Engels and Karl Marx. The latter explained around 1848 that one cannot limit observation to a single year, in the matter of the economic laws proper to capitalism. In fact ''it is always necessary to take as an average term, six or seven years—the lapse of time during which modern industry passes through its different phases, of prosperity, overproduction, stagnation, and crisis, and completes its inevitable cycle.''[53] In the socialist thinking of 1848, the cycle constituted the sign of the ''critique'' [''critical''] character of the capitalist period and announced and precipitated its next replacement by a more ''organique'' [''organic''] system.

[47]''presque périodique'' due to ''mauvaise constitution du crédit'' and ''le monopole exercé par certaines branches privilégiées'' (Coquelin 1852, p. 530).
[48]''cesseront de se produire'' (Coquelin 1852, p. 534).
[49]See B. Gilles (1964).
[50]''on a pu remarquer que les crises se renouvellent avec une sorte de périodicité en sorte que les hommes de prévision on pu en annoncer le retour plusieurs années d'avance et à des époques à peu près déterminées'' (cited in B. Gilles 1964).
[51]Thus the St. Simonians, just like Juglar, conceived of the economic crisis as a normal part of the cycle of economic development (Le Bras-Chopard 1995; Régnier 1995).
[52]See G. Marcy (1946).
[53]''il faut toujours prendre le terme moyen de six ou sept ans—laps de temps pendant lequel l'industrie moderne passe par les différentes phases de prospérité, de surproduction, de stagnation, de crise et achève son cycle fatal'' (Marx 1848).

The theme of the normality of the cycle in Juglar could have been borrowed from many different sectors of opinion of his time—interventionist, protectionist, and socialist—but it was an idea likewise common to the medicine studied by Juglar, notably that of the Parisian clinical school. A look at the terminology used by Juglar from the start, in his very first economic writings, affords some hint of the importance of borrowings made by him from contemporary medical vocabulary. The words of the title of his work of 1862 are particularly important here: "crisis" and "periodicity" convey precise meanings and with them the suspicion that Juglar consulted contemporary dictionaries and encyclopedias, as, for example, in the case of the entries for "crisis" and "periodicity" in the *Dictionnaire français illustré et encyclopédie universelle pouvant tenir lieu de tous les vocabulaires et de toutes les encyclopédies* (see Appendix).[54]

The general dictionary definitions of the terms "crisis" and "periodicity" (reflecting, albeit like any other form of rhetoric, rather generalized social attitudes), refer back directly to the medical paradigm in which Juglar was immersed in Paris in the 1840s, first as a student of medicine, then as a young doctor. Over the first half of the nineteenth century, the Hippocratic notion of crisis was devalued; to use the words of 1849, it had "fallen in our days into an immense discredit."[55] An ontological definition of illness was thenceforth definitively dispensed with, and a profoundly renovated definition of illness succeeded it. Illness was no longer perceived as an independent entity, caused by a foreign matter or agent coming in to trouble the body and its functions, but either as the disturbance of a function or as the sign of an organic lesion.[56]

Developing the innovative intuition of Bichat who had explained that "life is the totality of functions which resist death,"[57] the Parisian clincians—but also the first adherents of experimental medicine, notably François Magendie under whom Juglar had followed courses at the College de France—were affirming the fundamental identity between physiological and pathological processes. Only quantitative difference permitted their separation, the pathological states were only simple deviations which permitted better study of normal states.[58] Chomel expressed this idea most simply, musing, "properly speaking, isn't pathology medicine itself?"[59] Solidarity between the pathological and the normal is equally at the heart of the vision of the cycle of Juglar. It is in fact on this precise point that his borrowing from the medicine of the time was, on the cognitive level, the most fertile.

An exogenous, punctual conception of "crisis" was thus set aside by Juglar, and henceforth the focus was the cycle: the quantitative variations within the framework of economic evolution. He conceived the cycle both in the alteration of structures

[54]The importance of the two entries "crise" and "périodicité" in the *Dictionnaire* of Dupiney de Vorepierre was noted by P. Salmon (1966, pp. 133ff). See also the close definitions of the two terms given in L. N. Bescherelle (1856, vol. 1, p. 835; vol. 2, p. 845) and M. La Châtre (1870, vol 1, p. 1167; vol. 2, p. 1014).

[55]"tombée de nos jours dans un immense discrédit" (J. P. Beaude 1849, vol. I, p. 465).

[56]Some recent studies have examined syphilis as a disease-specific instance of this transition period from unicist to physiological theory: Marie E. McAllister (2000), and Alex Dracobly (2004).

[57]See above, note 12.

[58]See G. Canguilhem (1966, ch. II).

[59]"la pathologie n'est-elle pas, à proprement parler, la médecine elle-même?" (F. Chomel 1817, p. 2).

(rapid industrial development and the disequilibria under way *vis-à-vis* agriculture) and in the disruption in the workings of functions (credit and payments). His cycle was, however, also, in some way, the reflection of the risk of economic development. It is in this sense, on the social level, that Juglar thought out the articulation between the normal and the pathological in an innovative way. Juglar situated the vision of the economic cycle in the framework of a conception where, to repeat the words which Georges Canguilhem recently used to qualify the living person, illnesses "are the crises of growth toward the adult form and structure of the organs, of the maturation of the functions of internal auto-conservation and adaptation to external solicitations."[60]

This idea of the normality of the economic cycle in Juglar was in fact in solidarity with the reformist ethos of his time.[61] In France he was far from alone in articulating the theme of slow and measured progress and that of the cycle. P.-J. Proudhon, for example, of the same date, made a balancing of contraries the very condition of change and of peace. In cyclical movement can be seen moral and political considerations:[62] despite the ups and downs of the cycle, ultimately there will be sharing in the fruits of progress by everyone, and through the weeding out of the less competitive and the reinforcing and rewarding of efficiency in an "industrial" society, there is the guarantee of opportunity and hence social fluidity. Classes and social antagonisms are no longer (or very little) a reality.[63]

This same theme can also be found in Juglar's texts, published as early as the 1850s. To his mind, demographic phenomena reveal the presence of a regulatory cycle—"a safety value used by Providence to moderate the increasing advance of people"—in a society which is progressing, notably at the technological level.[64] Another example can be found in his allusion to the dynamic equilibrium which naturally establishes itself between agriculture and industry. Industry progresses relative to agriculture, but at a sensible, slow pace, which the State could only disturb, should it intervene in a contrary way with customs tariffs.[65] It is thus argued that in Juglar the notion of "normal," applied to the progressive economic cyclical process stems, with—among other contributing sources—from his study of medicine and his concern with social problems, even as it went hand in hand from an economics

[60]"sont des crises de la croissance vers la forme et la structure adultes des organes, de la maturation des fonctions d'autoconservation interne et d'adaptation aux sollicitations externes" (G. Canguilhem 2001, p. 46).
[61]On this issue, see A. Daumard (1987); H. G. Haupt (1993, chapter 2).
[62]In fact, the moral and political considerations which were in step with the bourgeois society of the 1850s, a society based on property, family, and ability.
[63]The gist of this vision is expressed in a text from the *Journal des debats* [*Journal of debates*] in 1847: "There are no classes in France in the rigourous meaning of the word. The bourgeoisie is not a class; it is a position: one attains, or loses this position. Work, the economy, and ability give it to one; vice, dissipation, and laziness cause one to lose it. The bourgeoisie is so little like a class that its doors are open to anyone to leave as well as to enter." "Il n'y a pas de classes en France dans le sens rigoureux du mot. La bourgeoisie n'est pas une classe, c'est une position ; on acquiert cette position, on la perd. Le travail, l'économie, la capacité la donnent; le vice, la dissipation, l'oisiveté la font perdre. La bourgeoisie est si peu une classe que les portes en sont ouvertes à tous le monde pour en sortir comme pour y entrer" (cited in A. Daumard 1987, p. 129).
[64]"une soupape de sécurité employée par la Providence pour modérer la marche croissante des peuple" (Juglar 1851, pp. 378-79). In similar terms, Juglar expressed, for example, metaphorically the failure of colonization in Algeria: "guerrières" ["warrior"] practices retreat inexorably before "*industrielle*" ["industrial"] reason (Juglar 1853a, p. 232).
[65]Juglar (1853b).

perspective with his awareness of the political debates of his time surrounding the issues of interventionism, protectionism, the bourgeoisie, and socialism.

V. THE ECONOMIC CYCLE AND THERAPEUTIC SKEPTICISM

At the policy level, the program of Juglar, as he expressed it around 1860, was extremely timid. It is obvious, he explains, that the cycle affects harshly the living conditions of the working class.[66] Likewise, Juglar observs, the entrepreneur, at whose mercy employment rises and falls, faces both the harshness of losses when obliged to reduce his production during the depression phase of the cycle, and the precariousness of return when deciding to innovate and take risks in the ascendant phase: ''Production, launched on a large scale, is obliged to slow down, to moderate itself, to reduce salaries, or even to lay off a part of the workers it occupies, awakening in them the sentiments of hatred which manifest themselves with such violence in revolts, that this discontent, this malaise becomes general.''[67]

Juglar believed, however, in some way, that this was the social impact of economic growth and innovation, and that if the objective knowledge of the modern phenomenon of periodic crises could be distilled and communicated to the workers, it would create an element of social peace. Scientific study about this quasi ''economic law''—in and of itself persuasive, since it is based on what the empirical facts themselves reveal[68]—ought in fact, to be pursued, ''not so much in order to indicate the remedy which is found in the nature of things, as to measure coldly the consequences, affording [us] a strong enough confidence in the future to pass through the present without letting ourselves fall into vexatious uncertainty.''[69]

As Juglar explained it even more clearly in a slightly later text: ''Out of the mixture of all the interests which conflict with and support one another in society comes a common effort which directs and guides you toward a an inevitable end which you cannot avoid. The regular, continuous development of commerce, or the wealth of nations, does not occur without pain, without obstacles.''[70]

Juglar adopted his skeptical yet positive take on therapeutics, as applied to the economic realm, from many distinct sources. First and foremost, without doubt his skeptical attitude as applied to economics derived from the doctrine of the French liberal school with which he was associated, albeit without blind allegiance. Innovative and dynamic at the beginning of the 1840s, this school took a decidedly

[66]''conditions d'existence de la classe ouvrière'' (Juglar 1857a, pp. 38-39).

[67]''La production, lancée sur une grande échelle, est obligée de se ralentir, de se modérer, de réduire les salaires, ou même de renvoyer une partie des ouvriers qu'elle occupe, éveillant chez eux ces sentiments de haine qui se manifestent avec tant de violence dans les révolutions, que ce mécontentement, ce malaise général amènent'' (Juglar 1857a, p. 39).

[68]''loi économique,'' ''ce que les chiffres offrent d'eux-mêmes'' (Juglar 1857a, p. 35).

[69]''pas tant pour indiquer un remède qui se trouve dans la nature des choses, que pour mesurer froidement les conséquences, conservant une assez ferme confiance dans l'avenir pour traverser le présent sans se laisser aller à une incertitude fâcheuse'' (Juglar 1857a, p. 36).

[70]''Du mélange de tous les intérêts qui se heurtent et se soutiennent dans la société, résulte un effort commun qui vous dirige et vous pousse vers un but fatal que l'on ne peut éviter. Le développement régulier, continu du commerce et de la richesse des nations n'a pas lieu sans douleurs, sans résistances'' (Juglar 1861, p. 252).

conservative turn after 1848.[71] It did not spare its criticism of any group: whether the socialists or republicans, the proponents of planned economies or the interventionists who held the government under both the Second Republic and the beginning of the Second Empire. Before Michel Chevalier would rally the liberals to the pragmatism of the Empire (around 1860), the main liberal author at the beginning of the 1850s was Frédéric Bastiat, avid defender of the most radical form of economic liberalism.

Here again, however, medicine and particularly the conceptions of the Parisian anatomo-clinical school played a significant role in the orientation of his thinking about therapeutics and prescription. "[T]he dominant and the most permanent trait of the Parisian School in terms of *therapeutics*," noted Ackerknecht judiciously, "its common denominator of sorts, is its skepticism . . . Resting on a belief in the curative power of nature, it tended toward empiricism."[72] From 1850 on, hospital medicine was in retreat, surpassed by the new experimental medicine developed by a new generation and resting henceforth on the approaches of the laboratory (experimental physiology, chemistry, and the microscope). The Parisian clinicians, empiricists, and practicians, stopped at the explanation of the causes of illnesses, of which no physical examination, statistics, nor microscopic pathological anatomy permit discovery. Their attitude did have the positive effect of eliminating all the conjecture about the medications used before 1800; its negative result was great skepticism at the therapeutic level.

Confronted with disease, the clinicians relied on prospective medicine and on the curative power of nature. Concluding his article "*maladie*" ["disease"] for the *Dictionnaire de médecine usuelle* [*Dictionary of everyday medicine*] of J.P. Beaude, A. Hardy, a doctor in the hospitals of Paris, placed his confidence significantly in "a health-giving reaction of the harmonious system which is opposed to the illness and battles against its negative effects. This strength which is designated by the term 'the medicating force of nature' is like the antidote, to a poison; it tends without cease to reestablish calm and equilibrium in the environment."[73]

Further, A. Trousseau, whose great course in therapeutics Juglar had followed at the Faculty of Medicine, mentioned in his *Clinique médicale* [*The medical Clinic*] the "powerful acts" of "*medicating nature*," summarizing thereby the position of the Parisian school; he noted that, "For a long time I have been inclined to believe in the impotence of medicine in the treatment of acute pneumonia. For a long time I have been tempted to leave to nature the care of dealing with this illness against which we are all disposed to act with so much strength, but until now I have not dared to do it."[74]

[71]F. Démier (2000); L. Levan-Lemesle (2004).

[72]"le trait dominant et le plus permanent de l'attitude de l'Ecole de Paris en matière de *thérapeutique*, son dénominateur commun en quelque sorte, c'est son scepticisme . . . Reposant sur la croyance au pouvoir curatif de la Nature, il tend vers l'empirisme" (Ackerknecht 1986, p. 176).

[73]"une réaction salutaire de l'économie opposée à la maladie et en lutte contre ses mauvais résultats. Cette puissance qu'on désigne sous le nom de force médicatrice de la nature, est, comme l'antidote, à côté du poison ; elle tend sans cesse à rétablir le calme et l'équilibre dans l'organisation" (Beaude 1849, vol. 2, p. 389).

[74]A propos the "actes puissants" of "*nature médicatrice* ": "Il y a bien longtemps que je suis incliné à croire à l'impuissance de la médecine dans le traitement de la pneumonie aiguë. Il y a bien longtemps que je suis tenté de laisser à la nature le soin de mener à bien cette maladie contre laquelle nous sommes tous disposés à agir avec tant de vigueur ; mais jusqu'ici je n'ai pas osé le faire" (cited in F. Chast 1999, vol. 2).

An unpublished reflection about Juglar, probably by his wife, tells us that Juglar did "dare to do it," but only through the abandonment of medicine entirely. Beginning around 1848, his disillusionment with healing the sick grew ever greater: "It was then that he sensed the impotence of medicine and that following diagnosis he found no efficacious remedy; continuously to see suffering and rarely to ease it, to count the days of a person without being able to prolong them, and seeing God as the only one who could heal, he abandoned medicine to give his spirit greater liberty and wider range."[75]

However much Dr. Juglar was a skeptic, he held to a pure religious faith, with its roots in a Catholicism which still around 1850 acknowledged with great difficulty the social questions in France and tackled them therefore through only the fewest attempts at "social therapeutics." Led by the empirical observations that most medical therapeutics were impotent, Juglar turned with both resignation and confidence toward economics.[76] The commentary noted above also relates that "his medical studies had taught him that illnesses cure themselves with difficulty, but are prevented easily."[77] Thus by the early 1860s Juglar began to turn the powerful combination, from his medical training, of a skeptic's caution about therapeutics and an increasing confidence in "prevention as the best medicine" into his new perspective on the economic cycle. Transferring both to the domain of industry, in connection with the conception of the normality of the cycle of which the crisis is but a moment, skepticism about the effectiveness of economic policy (therapeutics), at least "up until now," and his hopes for prevention[78] were expressed in a very clear way by Juglar:

> Crises, like illnesses, appear to be one of the conditions of the existence of societies in which commerce and industry dominate. One can foresee them, mitigate them, preserve oneself against them up to a certain point, and ease the taking-off again of business; but to eliminate them, that has, up until now, despite the most diverse combinations [of strategies] not been given to anyone. For us to propose a remedy . . . has also not been possible, in so far as the natural evolution reestablishes an equilibrium and prepares a solid ground on which one can depend without fear to run the course of the next period.[79]

[75]"C'est alors qu'il sentit l'impuissance de la médecine, et qu'à côté du diagnostic il ne trouvait pas de remède efficace et voir toujours souffrir, soulager rarement, compter les jours de chacun sans pouvoir les prolonger, et regardant Dieu comme le seul qui peut guérir il abandonna la médecine pour laisser à son esprit une liberté plus grande et un champs plus vaste" (Notes conserved in the Juglar Family archives).
[76]A. Pons (1997).
[77]"ses études de médecine lui avaient appris que les maladies se guérissent difficilement mais se préviennent facilement" (Notes conserved in the Juglar Family archives).
[78]Juglar's proposed strategies for "prevention" owe little to medicine and must be left to the upcoming study of his economic ideas.
[79]"Les crises, comme les maladies, paraissent une des conditions de l'existence des sociétés où le commerce et l'industrie dominent. On peut les prévoir, les adoucir, s'en préserver jusqu'à un certain point, faciliter la reprise des affaires ; mais les supprimer, c'est ce que jusqu'ici, malgré les combinaisons les plus diverses, il n'a été donné à personne. Proposer un remède à notre tour (. . .) n'était pas possible, d'autant que leur évolution naturelle rétablit l'équilibre et prépare un sol ferme sur lequel on peut s'appuyer sans crainte pour parcourir une nouvelle période" (Juglar 1862, VII).

Thus, the third of the ways in which Clément Juglar's study of medicine in mid-nineteenth century seems to have influenced his economic writings turned on his belief that, like the failure of contemporary medical therapeutics to alter significantly the course of a disease, economic policies also were impotent in mitigating the cyclical course of business.

VI. CONCLUSION

The first edition of *Des crises commerciales et de leur retour périodique en France, en Angleterre et aux Etats-Unis* (1862) closes with two paragraphs already present in his other texts of 1856 and 1857. They synthesize Juglar's point of view:

> Having arrived at the end of this study, one cannot help but note the regular succession of happy and unhappy periods, experienced by the French population since the beginning of this century; sometimes lifting it to an unheard of level of prosperity to precipitate it into the abysses of its revolutions, sometimes allowing it to come out of these abysses to reach a level of industrial development and an unexpected growth in wealth.
>
> The most simple means employed by Providence to produce such great results confounds the imagination, when one compares the grandeur of the effects to the smallness of the causes. A dearth in a harvest, increasing the troubles of commerce and industry, at the end of the exaggerated impulse which was given to them, determines a crisis often followed by a revolution, and concluded by a general war or a great epidemic. Everything stops for a time; the social body appears paralysed; but it is only a passing torpor, a prelude to the most beautiful destinies. In one word, this is the general liquidation. One should thus never succumb to despair nor to too great hopes for one's country, constantly reminding oneself that the greatest prosperity and the greatest misery are sisters, and always follow one another.[80]

[80] "Arrivé au terme de cette étude on ne peut s'empêcher de remarquer la succession régulière des périodes heureuses et malheureuses, traversées par la population française depuis le commencement de ce siècle ; tantôt s'élevant à un degré de prospérité inouï pour être précipitée dans les abîmes des révolutions, tantôt sortant de ces abîmes pour atteindre un développement industrielle et un accroissement de richesse inespéré.

Les moyens si simples employés par la Providence pour produire de si grands résultats confondent l'imagination, quand on compare la grandeur des effets à la petitesse des causes.

Une insuffisance de la récolte, augmentant les embarras du commerce et de l'industrie, à la suite de l'exagération et de l'impulsion qui leur avaient été données, détermine une crise souvent suivie d'une révolution, et terminée par une guerre générale ou une grande épidémie. Tout s'arrête pour un temps, le corps social paraît paralysé ; mais ce n'est qu'une torpeur passagère, prélude de plus belles destinées. En un mot, c'est une liquidation générale. Il ne faut donc jamais désespérer ni trop espérer de son pays, se rappelant sans cesse que la plus grande prospérité et la plus grande misère sont sœurs, et se succèdent toujours" (Juglar 1862, pp. 252-53).

This article would wish to make an undeniable case for a causal influence of—besides all the other influences on Juglar, the Liberal school, the hygienists, the socialist Catholics—his training in medicine at the beginning of the 1840s at the apogee of the ''eclectic'' period of the Parisian school. It would wish to assert that Juglar's training as a physician was responsible for the much of the perspective expressed in his economics writings. Admittedly, however, there are no proofs positive, no passages, no works which can show that Juglar's medical training was necessary and sufficient to his ideas; there are only many smoking guns. Amidst the researched reflections of Juglar's positions, in the sections above, on empiricism, on the definition of ''normal'' and ''patholological'' as applied to the socio-economic world, and on skepticism at the therapeutic level, there are at least many interesting parallels between the training he received as a physician and the economics articles he subsequently wrote, specifically those on the business cycle and its crises. There is, however, much intellectual solace in the recognition that however much correlation may not be the yield of causation, a certain heuristic fertility most probably was. It can be noted, for example, that in Juglar's early ideas about the business cycle his definition of ''normal'' permitted him to cross his liberal thesis of progress, a linear one—since it is without fluctuation and only countered by a few exogenous shocks—with the socialist thesis of the decline of capitalism due to its organic contradictions, a cyclic one—since one economic, political, and social system is replaced by another. Juglar, due to his conception of the ''normal,'' implying that death is integrated into life, was able to combine the liberal theme of linear progress and the socialist (and interventionist) theme of cyclical change: the cycle becomes the pace proper to the development of capitalism.

Clément Juglar's wide set of intellectual connections might have given new life to the liberal paradigm, which, progressivist and innovative at the start of the 1840s (notably with such economists as Adolphe Blanqui), had atrophied and was being put to rest economically and politically between 1848 and 1851. Nonetheless, Juglar's proposal—his concepts would in most respects evolve very little over time—could hardly favor the success of a new ''classic situation'' in economics. His vision of the cycle as the natural rhythm of development was too daring for the liberal, who preferred to continue to mull over the ideas of J.-B. Say on the matter of the impossibility of general overproduction. It was also too much an evident mismatch with contemporary socialist ideas, which would rapidly crystalize into the 1st International, and too timid for the interventionists and the officials, who from 1856 on, seeing a new depression announcing itself, pragmatically put in place the first anti-cyclic policy.[81] Although both Luigi Cossa in his *Outline of the Science of Political Economy* (1880/1883) and Knut Wicksell in his *Lectures on Political Economy* would acknowledge Juglar's contribution, it would take waiting for Joseph Schumpeter and modern theoreticians of the cycle before there would be some recognition of the work of Juglar.

[81]As early as March 1856, an official Note which appeared in *Le Moniteur* [*The Moniter*] foresaw a real anti-cyclic policy based on putting a brake on investment. See L. Girard (1952).

APPENDIX

Jean François Marie Bertet Dupiney de Vorepierre, *Dictionnaire français illustré et encyclopédie universelle pouvant tenir lieu de tous les vocabulaires et de toutes les encyclopédies*, Paris, M. Lévy frères, 1876 [1ère édition 1858-1864],

« Dans l'ancienne médecine où l'on supposait dans les maladies l'existence de deux forces opposées, une *cause morbifique* et la *force médicatrice* de la nature, on nommait *Crise* la perturbation causée par la lutte de deux principes contraires, lutte qui avait nécessairement pour objet d'expulser ou de neutraliser la cause morbifique. L'école humoriste alla plus loin. Partant de cette hypothèse qu'il y a, dans toute maladie, une matière morbifique qui se développe spontanément dans l'organisme ou qui est introduite du dehors dans les fluides de l'économie, elle donnait le nom de crise aux phénomènes morbides qui lui paraissaient se lier à l'expulsion de cette *matière peccante*.
Ces théories surannées sont aujourd'hui abandonnées par tous les hommes de l'art, et nous n'en parlerions pas, si elles ne dominaient encore dans les idées et le langage vulgaires. Il suffit pour faire justice de ces suppositions gratuites, d'observer que c'est précisément chez les personnes saines et fortes que les prétendus efforts d'élimination sont violents et incoercibles, ou, en d'autres termes, que les maladies revêtent la forme la plus aiguë, tandis qu'ils sont nuls ou presque nuls chez les individus scrofuleux, scorbutiques, etc, c'est-à-dire chez ceux où il existe une altération réelle des fluides organiques. – Aujourd'hui cependant le terme de crise s'emploie encore dans le langage médical ; mais il désigne simplement la ligne de démarcation que l'on peut quelquefois entrevoir et signaler, tantôt entre l'accroissement et le décroissement d'une maladie, et tantôt entre la marche ascendante de celle-ci et la chute des forces vitales, de sorte que la crise ainsi conçue peut être interprétée comme l'expression du retour à la santé ou l'indice d'une mort prochaine. Dans les maladies, il y a en général *tendance* vers le retour à l'état normal, tendance qui est due à l'action des forces inhérentes à l'organisme vivant. Lorsque cette tendance est efficace, on voit les organes dont les opérations régulières avaient été suspendues reprendre leurs fonctions caractéristiques ».
« Crise », vol.1, pp. 828-829

Translated from Jean François Marie Bertet Dupiney de Vorepierre, *The French illustrated dictionary and universal encyclopedia comprising all vocabularies and all encyclopedias* Paris, M. Lévy frères, 1876 [1ère édition 1858-1864],].

"In the medicine of old it was supposed that in illnesses there were two opposing forces, the *morbific cause* and the natural *medicative force*, one called *Crisis* the perturbation caused by the battle between the two contrary principles, a battle which necessarily had as its object to expulse or to neutralize the morbific cause. The humoral school went even farther. Starting from the hypothesis that in every illness there is a morbific matter which develops spontaneously in the organism or is introduced from outside into the fluids of the harmonious system, it gave the name of crisis to the morbific phenomena which appear to link it to the expulsion of this *morbid matter*. These superannuated theories are abandoned today by all men of the [medical] art and we would not speak of them if they did not still dominate in common thought and parlance. It suffices to do justice to these gratuitous suppositions to observe that it is precisely in the case of healthy and strong persons that the supposed efforts of elimination are violent and incoercible, or, in other words, that illnesses take on the most acute form, while they are nothing or almost nothing in the case of scrofulous, scorbutic, individuals, that is to say, for those in which there exists a real alteration of organic fluids. – Today, however, the term 'crisis' is still used in medical language, but it designates simply the demarcation line which one can occasionally glimpse and detect, sometimes between the strengthening and weakening of an illness, and sometimes between the upward course of it and the drop in vital forces, such that the crisis thus conceived can be interpreted as the expression of the return to health or the indication of imminent death. In illnesses, there is a general *tendency* toward a return to the normal state, a tendency which is due to the action of forces inherent in the living organism. When this tendency is effective, one sees the organs whose regular operations have been suspended, take up their characteristic functions again."

« La *Périodicité* est un des caractères généraux de la vie organique ; mais tantôt cette périodicité résulte de causes extérieures à l'être vivant, tantôt elle résulte de causes internes. . . nous sommes beaucoup moins avancés à ce qui concerne les phénomènes périodiques qui ne sont point déterminés par des causes extérieures et périodiques. . . En bref, ce que nous savons de la périodicité des phénomènes physiologiques dont nous parlons se résout en cette notion, que la reproduction de la force organique nécessaire à l'accomplissement des fonctions est moins rapide que la consommation opérée durant l'exercice de la fonction, d'où nécessité de repos, intermittence, puis retour de l'activité fonctionnelle »
« *Périodicité* ," vol. 2, p. 678.

"*Periodicity* is one of the general characteristics of organic life; sometimes, however, this periodicity results from causes exterior to the living being, sometimes it results from internal causes . . . we are much less advanced [in knowledge] as concerns periodic phenomena which are not at all determined by exterior, periodic causes . . . In short, what we know about the periodicity of physiological phenomena about which we are speaking reduces itself to this notion, that the reproduction of the organic force necessary for the fulfillment of [bodily] functions is less rapid than the consumption [of energy] used during the exercise of the function, whence the necessity for rest, or intermittence, before the return to functional activity"

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