The State at the bedside of "medical economics"

The contribution of CREDOC

Daniel Benamouzig (CNRS / CERMES)
Centre de Recherche Médecine Sciences, Santé Société -
Site CNRS, 7, rue Guy Môquet
94 801 Villejuif Cedex
Tel : 01 49 58 36 85
Fax : 01 49 58 34 38
benamouz@vjf.cnrs.fr

In France, health economics was born in the post-war decades at the boundary between the administration, the social sciences world and the medical profession. (Benamouzig, 2005). This original set of knowledge has been produced within the Administration, in order to support the development of National Accounting. An administrative body of poorly defined initial status, the CREDOC, was formed in 1953 from the Commissariat Général du Plan i order to produce the National Consumption Accounts. Some of its work was based on the use of medical services and goods, specifically hospital or ambulatory care and medicines. Until the end of the 1960s, this was the only body in France which produced health economics data. Its work was greatly influenced by planning requirements. It was also deeply influenced by the links the CREDOC established with members of the medical profession. Significantly, health economics then became intentionally called "medical economics". The few doctors who advocated its use continually emphasised that this type of knowledge was theirs by right and that only physicians could legitimately address questions on health, even if economic in nature. Medical economics appeared to its medical advocates as a natural extension of social medicine, far more than the application of economics to health (Serré, 2002).

In order to describe the relationships which developed between the Administration and the producers of health economics knowledge and secondly the relationships between these producers and the medical world, we need to understand the institutional dynamics, individual approaches and intellectual concepts which led to the creation of "medical economics" at the

start of the 1960s. To study the social uses of economic reasoning and its specific cognitive aspects we propose to study empirically different thinking, which are intrinsically more difficult to capture into a social science analysis than more obvious other social elements. We then focus on formalised cognitive structures, then called "cognitive motives". These motives bring together a multitude of components such as reasoning processes, information, and finally arguments arranged into a convincing form. Repitively used, like geometrical or musical motives, their expressions varies depending on the social uses but they tend to be organised around a unifying principle. When used in the long run, they come to be reinforced, leading to genuine systems of "good reasons", which appear more or less convincing[1]. The work of economists can then be seen as a social process for the production and use of cognitive motives, which over time gradually acquire an intrinsic ability to convince, i.e. an *intellectual autonomy*. This approach belongs therefore to the sociology of economic knowledge, extending beyond the traditional boundary between "internalist" perspectives, thinking only about ideas, theories or reasoning, and "externalist" ones which are mainly interested in social practices and scientific institutions. It allows us not only to understand how social science knowledge are socially produced in social contexts, but also to analyse the means by which economic reasoning acquires some cognitive autonomy, in the very bosom of social practices.

1) CREDOC, between planning and National Accounting

Nowadays, Health economics can be thought of as an arm of economic science. This situation does not however imply that health economics has always been a health sub-section of more general economic theories, which also apply to other areas such as education, energy or telecommunications. In France, any similarities are largely retrospective and subsequent to the process through which the economic discipline converged around neo-classical economics in the 1980s. For a long time, health economics developed rather outside of the "discipline" of economics, which was itself poorly unified until the end of the 1970s. This must be put in perspective in order to understand the point at which health economics was able to establish in a different landscape than is currently offered by economic science.

[1] We are using the concept of « good reasons » in the sense in which it was described by Raymond Boudon, with the subtle difference however that the cognitive factors to be considered are described alongside objective and material realities, which are open to empirical examination, rather than alongside subjective reconstructed realities assigned plausibly to the people involved for interpretative purposes (Boudon, 2003).

In the post-war decades neo-classical economics was held in very low regard in France. It had been politically discredited by being associated with the economic crisis of the 1930s (Fourquet, 1980) and was at best an academic debate taught in faculties of law and notoriously distant from reality. It had little to say on the massive involvement of the State in the economy, which was the main topic of the time. Even the "Keynesian synthesis" conducted in the post-war decades remains a mostly academic exercise in France[2]. The most dynamic areas of economics developed within the Administration in the setting of voluntarist economic development for which the Keynes theories offered a general framework. New knowledge was formed around the tools constructed within and for the Administration. The birth of National Accounting and planning models which flowed from it, followed by the development of cost benefit evaluations intended to analyse public investment were fertile beds for the development of new economic knowledge. This pragmatic work, in which French ingeneers involved in public economics developed an international reputation, found applications in the area of health. In this field, macro-economic analyses measured aggregated data from the activity of categories of agents involved in the production, exchange or consumption of medical goods. Later on, cost benefit evaluations were produced to analyse more specific activities such as the use of screening policies or the organisation of care sectors such as perinatal medicine. The very first health economics works, which we will restrict ourselves to in this article, were performed very close to the Administration, at the meeting point of both planning and National Accounting.

The first medical economics team was set up in the CREDOC, which birth must be seen in the postwar context. The role of the Modernisation and Equipment Plan created around Jean Monnet became crucial in 1946, when the Plan was charged with administering the Marshall Plan funds. In order to do this, Monnet wanted an overall picture of the economy, which he called a "*balance sheet"*, used as the basis to construct a National Accounting process (Fourquet, 1980, p.61)[3]. He surrounded himself with two INSEE statistical economists, René Froment and Jacques Dumontier, later joined by Pierre Gavanier[4]. This team worked with a trio of economists from the Institute of Applied Economic Science (ISEA), consisting of

[2] It is common to use the term "Keynsian synthesis" to describe a group of works which sought in the post-war decades to combine Keynes theories with the micro-economic bases of neoclassical economics. Amongst the best known economists in this field were John Hicks, Paul Samuelson, Robert Solow and Franco Modigliani.

[3] Fourquet F. (1980) *op.cit.* p.61.

[4] An economist by training, Robert Marjolin was Associate General Commissioner for the Plan and Alfred Sauvy was Director of the National Institute for Demographic Studies.

François Perroux, Pierre Uri and Jan Marczewski[5]. In March 1947, the Plan published two works, which were the first two milestones of National Accounting in France: an initial *Estimation of national revenue* and a retrospective work on *National Accounting in France in 1938.* These seminal works however suffered from a lack of data. The Plan economists supplemented their statistics from the Treasury directorate, which with the agreement of Monnet was soon to be given the task of establishing National Accounting. It was Claude Gruson, an ingeneer graduate of the Ecole Polytechnique, who transferred the National Accounting from the Plan to the Ministry of Finance.

The year 1954 saw a change in the depth of detail in National Accounting. Elected to the Presidency of the Council, Pierre Mendès-France was one of the rare political figures to fully understand the economic instruments constructed by the Plan and by the Ministry of Finance. Since 1952, he had there an office as President of the National Accounts and Budgets Commission. Besides, he had long been a supporter of planning. When he arrived at the head of the state, he changed the government organisation, forming a large ministry bringing together Finance and the Economy, to which he attached the Plan. The independence of the Plan initially promoted by Monnet gave way to closer administrative relationships between the Plan and Finance. Mendès-France also created a general productivity Commissariat, the leadership of which he gave to a close collaborator, Gabriel Ardant[6]. Major changes were also seen in the content of planning. Public investment in social areas such as education and health now emerged as priorities whereas these had been neglected by the first Plan, dedicated to "basic sectors". To support this change, the Ministry of Finance constructed specific accounts intended to improve planning for new investments. In addition, planners' interests turned from production to consumption. Sector studies were started, although the expert resources within the Plan were limited in this area. In order to make up for this deficiency a body was specifically created in 1953 to study consumption. The Centre de Recherche et de Documentation sur la Consommation (CREDOC) (Research and Documentation Centre into

[5] ISEA is an association founded in 1944 by François Perroux. It brings together economists looking to apply economic tools to concrete questions. Shortly after the war, ISEA formed a meeting place for economists working in the sphere of public economics which at that time was growing strongly.

[6] This organisation facilitates study placement visits for administrators in the United States. It was to be integrated into the General Commissariat for the Plan in 1958 with the arrival of Michel Debré at the post of Prime Minister. His director, Gabriel Ardant was Inspector of Finances and was a member of different pre-war ministerial cabinets. He was a technical adviser to General de Gaulle's cabinet in 1946, and then Secretary General of the Central Investigation Committee into Public Sector Costs and Services until 1954. He was then appointed General Commissioner for Productivity. He was a close colleage of Pierre Mendès-France with whom in 1954 he published a book on the political use of economic science (Mendès-France, Ardant, 1954).

Consumption) was given the task of producing national consumption accounts and conducting sector studies.

Compared to production, consumption studies occupied however an institutionally marginalised position. Whereas production accounts were produced within the Finance administration, the consumption accounts were produced in a peripheral body, the legal status of which remained poorly defined for some time. CREDOC was initially a "research team operating within the French Association for Increasing Productivity". It only acquired the status of an association in 1961. Although it took on public service tasks and its members saw their own work as being in the service of the State, CREDOC remained outside of the Administration. Although delicate, this position was not without its advantages. It offered a degree of flexibility, which helped to strengthen the subject-based teams by recruiting new people.

The CREDOC team formed around previous members of ISEA, such as Edmond Lisle and Georges Rottier, who took on the lead[7]. The composition of the CREDOC managing bodies provides an idea of the administrative, university and economic networks associated with the consumption studies. Three bodies presided over the management of the organisation: the management board, the scientific board and the Director of the board of the journal *"Consommation"*. Their members were part of the same policy networks (Spenlehauer, 1998). The management bodies brought together members of ISEA such as François Perroux, people from the Plan such as Claude Gruson, Gabriel Ardant, Jacques Dumontier and Pierre Massé, the director of the National Institute for Demographic Studies (INED), Alfred Sauvy and members of the National Institute for Statistics and Economic Studies (INSEE) such as Francis-Louis Closon and Edmond Malinvaud. Designed as a research organisation, CREDOC brought in representatives of the academic world such as Jean Stoetzel for the sociologists and Jean-Marcel Jeanneney for the economists. Its interest in consumption justified links with representatives of the public bodies and economic life working in the subject. The Ministry for Industry, the National Council for Commerce and the syndicated organisations such as the French Confederation of Christian Workers (CFTC) and the General Administrators Confederation (CGC) were represented. Representatives of the Paris Chamber of Commerce and the Federation of Commercial Directors and the National Association of Market Studies Practitioners brought in thinking closer to the employers' arena.

[7] A graduate of the Ecole Polytechnique interested in macroeconomics, Georges Rottier took on the directorate of the London Office of ISEA through which came into contact with British researchers and administrators working to construct the National Accounting, in particular Richard Stone (Fourquet, 1980, p.168-178).

The CREDOC members used different types of data to produce consumption accounts. The statisticians firstly examined taxation statistics and management data such as production and distribution statistics for specific sectors, generally produced by their professional contacts in the sector concerned. A more innovative method involved questioning households or a representative sample of households about their consumption. In 1955, a first household budget survey was conducted jointly by CREDOC and INSEE. This was funded by a grant from the National Productivity Funds and led to a pilot study followed by a four successive wave extension from 1956 onwards (Anonymous, 1958). At this time a pioneering study was examining healthcare expenditure in the French and can be thought of as the first French medical economics study.

2) Birth of "medical economics"

The medical economics team formed progressively at CREDOC. The first medical consumption study dates back to 1954, although it was not until the start of the nineteen sixties when a "hard core" of specialists formed at CREDOC. The formation of this team led to closer contact between CREDOC and members of the medical profession, through doctors Henri Péquignot and Georges Rösch.

Formation of a medical economics team

Doctor Henri Péquignot played a key role in the formation of the first French medical economics team. Through his personal experience, this doctor had held an institutional position and had a network of relationships at the crossroads between the medical and administrative worlds. This made him a ideal mediator between the economic interests of CREDOC and the professional interests of the medical world. Born in 1914, Henri Péquignot began his medical studies at the start of the nineteen thirties. In his internship he specialised in "clinical medicine". His personality and training led him to examine medical questions as a whole. As such, he became interested in social questions raised by medicine. His Catholic convictions taught him to consider human beings in their entirety, without reducing them to the physiological features of the disease. Still an intern in 1939, Péquignot was mobilised as a military doctor. After the defeat and German occupation, he returned to Algiers where he joined France Libre. He joined a health team intended to be posted to the middle of France after demobilisation. Liberation occurred faster than predicted and Doctor Péquignot arrived

in France. Looking for instructions, he presented to the Ministry of Health where he was welcomed by the Director of Social Hygiene, Doctor Eugène Aujaleu, who asked him to set up office as a doctor within the Ministry. For several years, he acted as a care worker within the Administration whilst finishing his studies, intending to become a hospital practitioner. This position gave him the benefits of a dual, medical and administrative, culture and led him to become interested in health law and the financial aspects of medicine.

Shortly after the war, the Ministry of Health began to consider financial issues. An economic evaluation was performed on the consequences of occupation on Public Health, to which Péquignot contributed. Doctor Aujaleu also conducted a study on the costs of alcoholism. Fate was such that Péquignot's office was next to that of an INED statistician, Sully Lederman, who worked with Aujaleu on this subject. Lederman was interested in how medical information was coded and frequently consulted Péquignot (Péquignot, 1988). In return, Lederman asked Péquignot to meet Alfred Sauvy, who was interested in an economic approach to disease[8].

As a doctor for the Administration, Henri Péquignot saw all of the members of the Ministry who came to consult him in his office in an environment of trust, which made talking easier[9]. This led doctor Péquignot to become interested in a large number of areas and shortly afterwards to become one of the most prominent figures in the Ministry. His contacts made in Algiers during the war helped him to being recruited to the Minister of Health's office in 1951, where he worked on the increasing cost of hospitalisation. These experiences led him to observe the lack of quantitative information about the organisation and running of the health system. In 1952 when he was made responsible for running a training course on health policy and administration in the Ecole Nationale d'Administration, Henri Péquignot discussed "economic and financial" questions in which he stressed:

> "Financial evaluations and economic assessments are difficult to do for several reasons. The documentation required is difficult to obtain and suffers from many sources of error. The figures we have are in reality unverifiable and above all are often found in work which is designed to support an agenda which is unfortunately not always stated" (Péquignot, 1954, p.17).

[8] Subsequently, Alfred Sauvy examined these questions in more depth in a book dedicated to the price of human life. (Sauvy, 1977).

[9] Henri Péquignot confides: "I remained in the Administration as a doctor for a few years. This put me in contact with the many people who came to see me when they were ill, which promoted a special type of relationship. I understand however that although I did not want to stay there forever I had to continue my studies and pass my examinations … As such I had a hybrid position, I was firstly in the Ministry of Health which helped me to feed my family, but also I was at the hospital. This gave me a degree of familiarity with both worlds". Meeting with Henri Péquignot, June 1998.

Put simply, no objective, economic or financial information about the health system existed. Expenditure increased but there was no device available either to control or measure it. As someone close to the Christian Democracy, Henri Péquignot had an opportunity to discuss this problem in a Catholic thinking group run by Father Jean-Augustin Maydieu, author of the journal *La vie intellectuelle*. This group welcomed people such as Paul Vignaux, the future founder of CFDT and Robert Delavignette, General Governor of overseas France. In this group Henri Péquignot also met Jacques Dumontier and Georges Rottier who were then involved in the formation of CREDOC, some of the work of which was specifically dedicated to medical consumption (Péquignot, 1988, p.57-60). Dumontier and Rottier invited Péquignot to help them although Péquignot did not want to work only on these subjects. Appointed as a Paris Hospitals Consultant in 1950, he intended to pursue a hospital career and become a Professor of Medicine. Rottier asked Péquignot to help him recruit a co-worker and Péquignot chose one of his pupils, Georges Rösch. Born in Algiers, Rösch completed his medical thesis at CREDOC on hospitalisation of North African Immigrants (Rösch, 1957). The quality of his work and the personal support of Péquignot resulted in him running the team responsible for studying medical consumption. An initial study was conducted in 1954 and medical consumption became an integral part of the household survey in 1955. In 1959, a second household survey began, conducted with INSEE, which became the ten yearly health survey that has continued until today.

The development of the CREDOC medical team's activities needed new colleagues to be recruited. These people joined an institution which was in full expansion. Rösch formed a specialised team consisting firstly of doctors and then statisticians. CREDOC took on young doctors who wanted to study for their thesis on a subject in social medicine, or what was already being called "medical economics". These theses led to publications in the medical press and encouraged the spread of CREDOC's work in the profession. Seventeen studies were published between 1954 and 1964 in the collection "theses and dissertation series" from the CREDOC medical team. These studies represented a fifth of all of the team's publications. Georges Rösch surrounded himself with doctors in substantive posts such as Michel Magdelaine and Monique Chasserant, who later took on responsibilities for the leading French physician organisation, Confédération Syndicale des Doctors de France (CSMF) promoting the distribution of the studies in the syndicate. Other doctors later joined the initial team.

Statisticians were recruited secondly, after the doctors. Several of the recruits to the medical team in the 1960s were part of a more general recruitment policy common to all of CREDOC which took in young graduates from the Paris University Statistics Unit (ISUP), where Georges Rottier taught, pulling some graduates towards the organisation. Of note, amongst these recruits were the married couple, Arié and Andrée Mizrahi and Simone Sandier, who for several decades were to form the hard core of the CREDOC medical team. In 1963, one third of the CREDOC members had graduated from ISUP. The CREDOC medical team therefore formed around two types of skills, firstly those of doctors and secondly those of statisticians. Later on, economists became responsible for studying the medical aspects of National Accounting. Alain Foulon was recruited in 1966, and Marc Duriez joined the medical team in 1972. A few comments can be made about the composition of this first medical economics team.

Very medical economics…

Immediately noteworthy is the absence of economists for more than a decade. Although leading economists such as Edmond Malinvaud sat on the Scientific Council of CREDOC, the traditional economic approach did not appear *a priori* to relate to the sphere of medicine. The first medical economics studies appeared to be unique in nature, closer to medicine than economics, and described by a set of indices.

The composition and very organisation of the medical team had all the features of the offspring of a medical model inherited from the traditional hierarchical and personalised model of clinical practice[10]. Within the team, the doctors were even more influential as they occupied the positions of Scientific Adviser (Péquignot) and Director (Rösch) of CREDOC (and not only of the medical team)[11]. The medical team was also organised along a hierarchical line of knowledge transfer from teacher to pupil, characteristic of the medical profession: Georges Rösch was a pupil of Henri Péquignot and attended the outpatients department at Hôtel-Dieu every week. He himself took on young doctors to CREDOC for training. In the first years of CREDOC's activities, three generations of doctors formed the linch-pin of the medical team. Secondly, CREDOC's medical team's publication policy showed a clear concern to be addressed to the medical world. The team's works were

[10] Foucault M. (1963) *Naissance de la clinique*, Paris, Presses Universitaires de France.
[11] The CREDOC management is collegiate. At the beginning of the 1960s, it contained Georges Rottier, Edmond Lisle, Georges Rösch and a Treasury Inspector, Luc Poessel. CREDOC, *Activity Report 1962*, Paris.

published in medical journals and in the professional press. These were often detailed reports of studies also published in the journal *Consommation*. The commonest titles in the professional press in which they appeared included: *La semaine médicale, La Semaine des Hôpitaux de Paris, La presse medicale, Le concours médical, L'information médicale et paramédicale, La Gazette médicale de France, La revue d'hygiène et de médecine sociale,* etc. Between 1954 and 1964, half of the documents published by the team appeared in the medical press (this figure fell during the next decade to 20%). Finally, the very name of the new discipline, christened "medical economics", (rather than "health economics" or "economics of health" for example) highlight the importance given to its link to medicine. This set of indices is confirmed by the descriptions from the people involved.

In 1959, a series of articles allowed the advocates of medical economics to present the new discipline. Rösch displayed a partisan stance for medicine tainted with mistrust of neo-classical economics. The section below merits the long citation and a few comments.

> "Perhaps we use the words medical economics in the broader sense than usually. This encompasses both the usual expression applied to the discipline of political economy and the more functional sense which emerges when we talk about "economy of the human body"[12]. (…) The approach to this might seem a little unusual. We will try, if not to justify this, to explain why we need to use it, by describing how the four stages which medical economics studies must pass through are designed if they are going to answer the questions posed of them. The stages involve observing, explaining, predicting and helping decision making … (...) Faced with these difficulties (...) there are only two possible approaches to take: caution and evaluation. We also cannot wait. Techniques and behaviours are changing too quickly for us to have the time as we had previously to allow natural balances to develop. Plans must be organised and executed. Here are the real problems. These are problems which only doctors can solve and which we have to address. And all doctors will find themselves very closely affected by the processes which these research works examine. Too ambitious perhaps, but at least following correct rules of thought, simply applying our usual approach – diagnosis, aetiology, outcome, prognosis, treatment – to the whole population of a nation". (Rösch, 1959, p.1311-48).

Scorning the use of neo-classical economics and its "natural balances" and promoting the execution of plans, Rösch incorporated medical economics into medicine. The same methods were to apply there, the same people – doctors – presiding over its destiny. Rösch's text, however, cannot be taken by the letter.

[12] In French, the same word "économie" refers to both economics and economy. Implicitly, Georges Rösch here appears to allude to the very medical approach of Docteur François Quesnay (1694-1774), whose ideas were a source of inspiration for Wassily Leontief's work (1906-1999) and then for the work of those who made National Accounting possible, from which Docteur Georges Rösch's work flowed directly.

His complacent assumption of the doctor's position was also part of a strategy of persuasion designed to pre-empt possible rejection. Rösch wanted to place the legitimacy of his own approach ("which might appear a little unusual") in his colleague's laps. The incorporation of medical economics into medicine appears clearer still in a text by Henri Péquignot.

In an article published in *Problèmes*, a general journal, Péquignot presented the economic approach as an extension of social medicine. In excusing a "possibly strictly professional" approach, he stressed the importance of the scientific nature of medical research and attached the development of "socio-economic research" to it, seen as one of the expressions of the increasing use of mathematics in medicine[13]. In the same way as the English developed quantitative medicine to which "they intentionally gave the name epidemiology", according to Péquignot it was important to conduct medical economics studies. This work required the engagement of doctors. Left outside of medical eyes, the economists would lock themselves into "language traps" and produce sterile results. Medical economics therefore fell by right to clinicians:

> "The use we make of the language of the sociologist, or rather of the economist, must not belie our deep conviction that this job can only be completed by clinicians, under permanent clinical supervision. Joint working with economists and statisticians is clearly essential, but the presence of a clinician and the clinician's judgement at all stages in designing the research is essential, as this is clinical research" (Péquignot, 1959, p.16-17).

From the outset medical economics was positioned under the control of certain members of the profession. As in other fields of health administration, the development of public expertise in health economics was delegated to representatives of the profession[14].

Whilst it has its disadvantages, this delegation was neither absurd nor inappropriate. Its major disadvantage was recruitment bias, which medical economics could fall victim to. Even when informed and close to administrative situations, doctors so jealous of their professional rights

[13] As stressed by Henri Péquignot : "Scientific research into social medicine can be considered in three major sections, strictly medical research, sociological research and applied medico-social research. The specific ancillary tool is therefore sociology. By this term we understand the objective description of human communities and in simple terms, with respect, we confuse classical sociology *per se* with economic sciences and demographics. These objective study methods of collective human behaviour can only be described scientifically if we use mathematical tools…. the first, both clinical and social is the study of morbidities. The Americans now intentionally give the name "epidemiology" to this method. (Péquignot, 1959, p.16-17).

[14] The structure of the expert evaluation device illustrates a more general institutional design which applies to all public health expert work. As in the commissions for the Plan or the Commission for the reform of medical studies instructed under the auspices of Professor Robert Debré to examine hospital reform in the nineteen fifities, the public bodies delegated the administration of the sector to certain representatives of the medical profession, who were considered in a better position to take on the technical challenges in the field. Health administration was *delegated* to representatives of the profession (Jamous, 1958).

may find it difficult to be entirely neutral vis-à-vis a system in which their profession was the largest user of resource, both material and symbolic. The CREDOC doctors had fingers in several pies. Henri Péquignot did not give up his hospital career, which he continued to the position of accredited professor from 1960 onwards. After her time at CREDOC, Monique Chasserant joined the syndicate ranks of CSMF where she led the "Social Security and health economics" department. Close links were maintained between the profession and medical economics.

The fact that these experts belonged to the medical profession also had advantages. Firstly, the early medical economists could mobilise technical skills. Because of their training, they were immediately able to understand the concepts of their study research area which were more elusive to the uninformed. Knowledge of diseases, treatments and the state of art of technologies and hospital departments allowed them to use their close knowledge of the technical aspects of the subjects they were studying. Undoubtedly any decision to delegate health economics to non-medics would have required a learning curve. In a delightful comparison, Henri Péquignot drew a relationship between the epidemiological status of the medical economist and that of the ethnologist, with inadequate awareness of the populations which he was studying.

> "It is uncommon for non-medics to be aware of the lack of caution they take when considering medical problems, only seeking to look at them from the outside. This appears to be reproducing the error of the ethnologists of centuries ago who could not study primitive tribes without allocating the values, categories and judgements of their subconscious reference standards, "civilised" white European adults. The social sciences which seek to become involved in medicine would be wise to afford to all of the medical sciences, their elder disciplines and those more firmly grounded in effective techniques and sciences than their own younger and more subjective disciplines, and to those who practice these sciences – doctors – the same recognition as the modern, better informed, ethnographs do to the more primitive Amazonian tribes: taking account of their point of view and internal regulation" (Péquignot, 1973, p.15).

The second advantage is the standing of legitimacy which medically qualified economists have compared to other people in the system. Compared to the uninformed (administrators, patients, insurance fund representatives, etc.) doctors have a moral authority which no-one would dream of challenging). Delegating medical economics to doctors is a mark of confidence to the medical world, allowing links to be developed between the new discipline and some parts of the profession. These links facilitate the adaptation of some economic tools or reasoning to the world of health. The case of the National Accounting as a line of reasoning

is an excellent example of this, particularly as it forms the heart from which the nascent medical economics grows.

3) Medical economics as a cognitive activity

The production of the Health Accounts represented what Henri Péquignot called the "masterpiece" of CREDOC[15]. It was one of the first attempts to provide an economic quantification of medical or health components. Examining the conditions under which these accounts were produced allows us to understand the birth of medical economics, not only from a purely social and institutional perspective, but also from an intellectual or cognitive one. To do this, we can look at the Health Accounts as a "cognitive motive", i.e. a organised set of "good reasons" which may be broken down into different forms, like a geometrical or musical motive. Like these, cognitive motives produce more or less powerful convictions depending on their intrinsic properties and the way they are used. These cognitive motives are also engaged in dynamic transformations: they can be seen as the simultaneous result of both *formal* rationalisation processes, which increase their coherence, and *material* rationalisation, processes, which increase their relevance in the situations where they are used. According to this view, we can consider Medical Consumption Accounts in terms of such a dual, formal and material, rationalisation process, in order to understand both its cognitive organisation and its incorporation into social practices.

Formal rationalisation of the reasoning

Formal rationalisation of the cognitive motive of the Health Accounts increases its coherence. The Medical Consumption Accounts reproduce and adapt a method of reasoning constructed at the end of the 1940s by national accountants. By adopting an intellectual approach inspired from the works of François Quesnay in the XVIII century and more contemporary theorists such as Wassily Leontief and Simon Kuznets, National Accounting applies a global perspective to describe a macro-economic system and offer a complete representation of the national economy. The coherence of the scheme relies on the accuracy and completeness of the information. Rather than working by induction, listing the economic findings and then combining them, the national accountants worked deductively identifying categories of

[15] Refer also to Serré (1999) for the production of the Health Accounts and the political difficulties between the Health Accounts and the Social Security accounts from the end of the 1970s. (1999).

components (households, corporations, general government, non resident units) and operations (production, consumption, saving) which gave a consistent and coherent picture of the national economy[16]. A system of nomenclatures was used to break down the categories of components and operations into sub-categories or even sub-sub-categories depending on the desired level of detail. The economic activities of the different components could then be traced back following the principles of double-entry bookkeeping: for each component and each operation, "input" accounts for available resources and "output" accounts for consumption are created. A debit value then appears a credit in another account so that the system remains coherent and partly redundant (the same values appear in several different accounts as debits and credits). By deduction, this system allows certain information to be broken down or combined and the statistical coherence of the sources used, therefore, to be tested.

Formal rationalisation of reasoning requires strict definition of nomenclatures. As the terms are described, the concepts behind them must be sufficiently thoroughly defined to maintain an ability to aggregate results. For a given level of analysis, the definitions of operations or components which are subordinate to others must describe mutually exclusive categories whereas from one level of aggregation to another the concepts must be inclusive. Formal rationalisation of the cognitive map results in work which attempts to maintain its consistence.

Without going into the detail of account production, some of its properties show external signs of rationalisation. All sorts of *symmetries* develop from the motive, the existence of which, according to the german sociologist Georg Simmel, typically reflects a process of intellectual rationalisation (Simmel, 1896). Symmetries between uses and resources develop in account categories (accounts of "operations" *versus* accounts of "agents"), and within each account. Some concepts involve symmetrical, contradictory, inverse or alternatively complementary principles: The "outside" reflects the "inside", "production" reflects "consumption", "residents" reflect "non-residents", "goods" reflect "services", "purchases" reflect "payments" etc. The National Accounts are a true geometrical construction ordered to the most minor details. Local expression of these formal properties increase the overall impression of balance. This process allows aggregated information to be obtained about the major categories of economic agents and operations without having to collect all of the

[16] For a description of National Accounting, see Piriou (1987).

statistical information from the parties involved in economic life and is tailored to provide a macro-economic representation of the economy.

Material rationalisation of the cognitive map: tailoring to context

The reasoning method is not however only rationalised formally but also materially, as reflected by progressive tailoring of the analytical frameworks to new social areas and by improving the quality of the information used. As the national accountants go into the accounts in detail, they develop interests in sectors which were previously assessed on an aggregated basis. As production accounts were the first significant developments it became helpful, as we have seen, to extend accounting to consumption. Specific efforts were made in this area in different sectors, including health. The material rationalisation process was soon seen through a series of specifications and developments going to the very heart of the medical consumption accounts. From 1958 onwards dental care expenditure was, for example, separated from medical care expenditure, using statistics from the professional organisations. Throughout the 1960s and 1970s this work continued to produce more detailed nomenclatures, covering areas which were until that point poorly understood. Gradually, an increasing number of health parameters had economic values attached.

This extension correlated with a widening of the information sources used and improvement in the statistical and economic data collected. Complementary sources were used and the data became more reliable. Whilst the early sources were administrative, they were soon supplemented by data collected from agents in the sector, particularly from professionals and patients.

Two sources are used mostly from the administrative data. A first set of information is available from some ministerial departments, particularly from the Ministry of Finance. The Bureau for Economic and Financial Studies (SEEF) uses this for example to measure social assistance expenditure by drilling down into the accounts of local communities. The Public Accounts Directorate has information used to measure public or private hospital receipts. For drugs, the General Prices Directorate knows the sales of the pharmaceutical companies. It worthes noting that statistical source for the Ministry of Health are noticeably poor[17]. A second set of data comes from the National Health Insurance Funds set up in 1945 for the

[17] The only usable sources are those from the social assistance. It should also be noted that as the standards used by the Ministry of Health are different to those used by the local communities, it is very difficult to compare them.

main part of the population. This information is communicated by the Social Security Directorate, attached to the Ministry of Employment, or more directly from the administrative services of some national health insurance funds. In this case, the accountants' efforts are hampered by the wide range of fund systems. Whilst some data, such as those from the National Railway Company (SNCF) or mining fund systems, are easily accessible, others are more difficult to obtain. It should also be stressed that the CREDOC work has from the outset been supported by the National Federation for Social Security Works (FNOSS) which dictates the fate of the National Health Insurance Hunds[18]. Statisticians have to use estimates which "require extrapolations made from fragmented information" (Vassereau, 1959, p.98).

In order to overcome these difficulties the experts went to those involved in the health system. The production of the Consumption Accounts was based on information obtained from healthcare professionals, and shortly afterwards from households. The CREDOC experts referred to the French Confederation of Medical Syndicates (CSMF) to obtain the tariffs for consultations (which were free until 1960). CSMF sends a "syndicate tariff" which must then be adjusted to take account of the differences and variations between regions and types of doctors (rural doctors practice at tariffs below the syndicate tariff whereas in towns the tariffs are often higher, particularly for well-known doctors). In 1956, a consumption survey conducted jointly by INSEE and CREDOC which included various questions on medical consumption and gathered medical consumption information from households. These questions were relatively simple and could only just identify the "out of pocket" expenses of households (the amounts which the patients had to pay, even if reimbursed later). This information was used to supplement, refine and clarify the administrative data. The 1956 results led to an upward revision of primary care medical expenditure and dental care expenditure which had until then been underestimated.

The information from various sources which were incorporated into the Health Accounts were gradually supplemented and diversified. Through breaking down and by comparisons this diversification allowed the information to be improved. Thus, formal advances followed on from material improvement and vice versa. Alain Vassereau examined the medical expenditure for the years 1957 and 1958 and noted for example that the statistical sources for these two years were not as accurate as those obtained in 1956 through the household survey, and he tried to increase their overall consistency: "whilst we have not been able to make any

[18] FNOSS has brought together the different Social Security bodies until 1967, the date of the Jeanneney reform which separated the different insurance systems depending on the type of risk (disease, ageing and family). During the 1950s and 1960s the Chairman of FNOSS, Michel Clément commissioned several studies from DEM, which it partly funded (Valat, 2001).

improvements in the sources and accuracy of data, we have on the other hand sought to accelerate the establishment of the medical expenditure table". (Vassereau, 1959, p.98).

More or less reliable results were obtained by linking formal and material elements of the motive. Because of their intrinsic and progressively improving robustness these results allowed potential users to extract justified conclusions to support their beliefs. Lessons were drawn immediately from the first Medical Consumption Accounts. The motive of the consumer accounts showed a large increase in consumption, both in value and in volume. Less intuitively, it highlighted a lack of statistical relationship between the level of cover and level of medical consumption. Medical economists deduced from this that the argument conventionally put forward against the social security system, which was accused of encouraging "abuses" and "waste", was malfounded and that medical consumption was above all a "irreducible need". Thanks to the statistical information organised around the principles of National Accounting, the medical economists established instruments to produce rather robust arguments to potential users. Although the CREDOC members claimed their position as researchers, the motives of the Health Accounts were not however as a pure research tool. They were involved in social practices, which we shall briefly review.

The pragmatic dimension of the cognitive map

The pragmatic dimension of the cognitive motive emerges through the uses which different groups of people make of it. Firstly, the medical economists group used the cognitive motive to develop their own autonomy. These experts were involved in the production of accounts and set about a process of developing institutional autonomy. Even within the small group of CREDOC medical economists, the relatively complex technical work required by the Health Accounts promoted specialisation. After the initial work conducted by Georges Rösch and Alain Vassereau, economists and statisticians such as Alain Foulon and Simone Sandier were encouraged to specialise and become experts. They did not only gain institutional independence from other members of the CREDOC medical team, but also had specific institutional, national and international links. From the 1960s, the CREDOC specialists became part of an international expert community specialised in producing National Health accounts. They worked in France with senior members of the administration such as Doctors Rempp and Aubenque at INSEE and in parallel benefited from pioneering work conducted in Canada, the Netherlands and in Great Britain in which a similar approach was adopted by

Brian Abel-Smith and Richard Titmuss (Abel-Smith, Titmusss, 1956 ; Rösch, 1958). This was a truly "invisible college" of specialists formed around the Health Accounts (Crane, 1977).
Secondly, the Health Accounts are used by administrators. They are used directly by the planning commissions working in the Commissariat Général du Plan. Through the accounts the planners have access to administrative data providing a realistic representation and allowing medium term predictions to be produced. Simone Sandier recalls it as follows:

> "CREDOC was closely associated with the work of Plan. It was Georges Rösch who represented us within its commissions. The Plan used our work to make its projections. We had the major strength of being able to provide quantitative predictions which was very rare, if not unique, in the field of health. We then worked on comparing differences between predictions and actual observations"[19].

As the health planning objectives broadened, moving from only hospital equipment logistics to defining more ambitious public health policies from the sixth plan (1971-1975) onwards , use of the Health Accounts also expanded, as described at the time by Georges Rösch:

> "The preparation of the sixth Plan represented a new stage in the development of these studies and in particular their use for explanation, predicting and decision-making. The results of studies conducted in previous years with the collaboration of INSEE provided a better answer to the Health Commission's needs in the sixth Plan, the scope of which was far wider than that of the Health Equipment and Social Commissions which worked to prepare the previous Plans" (Rösch, 1972, p.13).

Finally, the production of the Health Accounts had implications on health professionals themselves. They were both the subject of the accounts (their activities were described) and the object of decisions taken from the Health Accounts. The establishment of the Health Accounts was broadly compatible with the interests of the profession. By placing more emphasis on general information because of its macro-economic nature, the Health Accounts used aggregate measurements which, with a few exceptions, did not go into detail about behaviour or disease, knowledge of which escaped the notice of the public bodies and the public in general. Whilst it is undoubtedly disingenuous to consider the Health Accounts as an instrument to intentionally preserve the opaqueness of some economic aspects of medicine, this instrument was however compatible with the interests of a profession which was not particularly inclined to justify its practices, discuss its remuneration or to delegate even some of its expert activities. For several decades, whenever the CREDOC researchers tried to

[19] Interview with Simone Sandier, October 1998.

"encroach" into these areas, they faced severe criticism from the medical world. The first studies on doctors' remuneration for example were greeted with shock and even outrage by the professional organisations. On a more technical level doctors working in the National Institute for Health and Medical Research similarly considered that it was inappropriate for non-doctors to ask patients about their medical consumption, as their reports would include medical issues about diseases, investigations or treatment which neither understood. In this context, doctors were considered as the only appropriate people to ask these questions[20].

In many regards the Health Accounts emerged as a compromise between the needs of the Administration and the symbolic and material interests of the medical world. The Administration became aware of changes in aggregate indices and saw a rapid increase in consumption, which it attributed to irreducible needs, at the same time ensuring it had the means to analyse the economic behaviour of those responsible for producing the aggregate indicators, beginning with the doctors. This compromise illustrates the independence of medical profession because of its power and also illustrates the pragmatic application of what we have called a cognitive motive.

Conclusion

At the beginning of the 1960s, the production of a set of economic knowledge in the field of health was mostly an administrative activity, closely linked to planning, for which National Accounting was one of the main economic tools. Within CREDOC, which was specifically formed to conduct economic and social studies on consumption, health related work was a major part from the beginning. Doctors close to the Administration such as Henri Péquignot and Georges Rösch became involved in the production of this new knowledge from their mediating positions between the administrative and medical worlds. The demand for independence which the medical profession made in all of its relationships with the State found itself illustrated remarkably in the tasks set for the young subject of "medical economics". Despite its administrative nature, medical economics developed within a space preserving the independence of doctors, who were in a position to claim a monopoly on economic expertise in health. Professional "dominance" of medicine on health economics existed at this point, shortly before a phase of prolonged questioning which began at the end of the nineteen sixties.

[20] Interviews with Simone Sandier, Thérèse Lecomte, Arié and Andrée Mizrahi. September 1998.

From this period onwards, new economic evaluations on health were centred around administrative or academic institutions leaving less independence to the medical profession (Benamouzig, 2005). Within the Administration, the production of economic knowledge in the Budget Choices Rationalisation Operation started in January 1968 by the Ministry of Finance and continued by the Ministry of Health from 1970 onwards, was clearly separated from the work produced by CREDOC to the point of occasionally contradicting it. The development of contracted research funded by the Plan or public research bodies also facilitated the development of academic research in health economics and even the formation of true university teams after the reforms subsequent to May 1968. Later on, in the 1980s, health economics found a place even within the major research organisations through the recruitment of health economists to CNRS and the formation of specialist units at INSERM. As for the pioneering CREDOC team, in 1985 it was extended into the formation of the Centre for Research and Documentation in Health Economics (CREDES) which took on the CREDOC's severe financial difficulties since the end of the 1970s and CREDOC's decision to disband its medical team which was very protective of its independence. The spread of the places where health economic knowledge was produced then offered a more varied picture, which bore no similarity to the singular way in which it developed initially.

Bibliography

Abel-Smith B., Titmuss R. (1956) « The cost of the national Health Service in England and Wales », National Institute of Economic and Social Research, Cambridge University Press.

Anonymous (1958) « La consommation des ménages français en 1956 », *Consommation, Annales du CREDOC,* 1960, n°2. juin 1958. p.9-34.

Ashmore, M. Mulkay, M., Pinch, T. (1989) *Health and Efficiency : a sociology of Health Economics*, Milton Keynes- Philadelphia, Open University Press.

Benamouzig D. (2000) *Essor et développement de l'économie de la santé en France, une étude empirique de sociologie cognitive*, Paris, Université Paris IV, 2000, 891p.

Benamouzig, D. (2005) *La santé au miroir de l'économie, une histoire de l'économie de la santé,* Paris, PUF (à paraître).

Boudon R. (2003) *Raison, bonnes raisons,* Paris, Presses Universitaires de France.

Callon, M. (1998), *The Laws of the Market*, Oxford, Blackwell Publishers.

Crane D. (1977) *Invisible Colleges*, New-York, Columbia University Press, 1977.

Foucault M. (1963) *Naissance de la clinique*, Paris, Presses Universitaires de France.

Fourquet F. (1980) *Les comptes de la puissance*, *histoire de la National Accounting et du Plan*, Paris, Recherches, p.61.

Jamous H. (1969) *Sociologie de la décision*, Paris, CNRS.

Mendès-France P., Ardant G. (1954) *La science économique et l'action,* Paris, Julliard-Unesco.

Péquignot H. (1954) *Eléments de politique et d'administration sanitaire,* Paris, ESF.

Péquignot H. (1959) « La social medicine », *Problèmes* n°61, p.16-17.

Péquignot H. (1973) « Préface », in Rösch G. (1973) *Economique médicale*, Paris, Flammarion, 1973. p.15.

Péquignot H. (1988) « Naissance de medical economics en France, aux origine du CREDES... », Betweentien avec S. Sandier », *Prospective et santé*, n°47-48, p.58.

Piriou J.P. (1987) *La National Accounting*, Paris, La découverte, 1987.

Rösch G. (1957) *Démographie, sociologie et pathologie des immigrés nord-africains dans la Seine, étudiées d'après les enquêtes hospitalières,* CREDOC, « thèse et mémoires » series, 1957.
Rösch G. (1958) « L'enquête canadienne sur la maladie et les soins médicaux », *Consommation,*, n°1, January, pp.99-103.
Rösch G. (1959) « Le rôle de medical economics » in *La gazette médicale de France,* 2 septembre 1959. pp.1311-1348.
Rösch G. (1972) « Avant propos » in *Economie et santé, Les comptes nationaux de la santé, n°2,* p.13.
Sauvy A. (1977) *Coût et valeur de la vie humaine,* Paris, Hermann.
Serré M. (1999) « La santé en comptes », in *Politix,* n°46, 1999, p.49-70.
Serré M. (2002) « De medical economics à l'économie de la santé », *Actes de la recherche en sciences sociales,* n°143, pp. 68-79.
Simmel G. (1896) « Esthétique et sociologie » in *Sociologie de la culture,* Paris, Rivages, 1988, p.129-138.
Spenlehauer V. (1998) *L'évaluation des politiques publiques, avatar de la planification,* thèse pour l'obtention du doctorat de sciences politique, Grenoble. 585p.
Steiner P. (1998) *Sociologie de la connaissance économique. Essai sur les rationalisations de la connaissance économique (1750-1850),* Paris, Presses Universitaires de France.
Valat B. (2001) *Histoire de la Sécurité Sociale, 1945-1967, L'Etat, l'institution et la santé,* Paris, Economica.
Vassereau A., « Les dépenses médicales en 1957 et 1958 », *Consommation,* 1959, n°4, Oct. Dec., p.98
Weber M. (1922) *Sociologie du droit,* Paris, Presses Universitaires de France, 1986.