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THE ORIGINS AND THE EVOLUTION OF HEALTH ECONOMICS: A DISCIPLINE BY ITSELF? LED BY ECONOMISTS, PRACTITIONERS OR POLITICS?

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The Origins and the Evolution of Health Economics: a discipline by itself?

*Led by economists, practitioners or politics? **

1st Version

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Abstract

Health has become a dominant economic and political issue over the past 40 years, with nations experiencing rapid rises in health care spending, and the health sector presenting high levels of expansion, rationalization and organization. I describe how by the end of World War II, both the intellectual and financial resources were being made available to answer the emerging empirically-driven questions for a new applied branch of economic analysis: Health Economics. I also discuss the driving forces for the evolution of this new field, while identifying two distinct paths in health economic thought: the first rising from a territory previously ploughed, namely by Mushkin (1962), and later developed by Grossman (1972; the second of which stemming from Arrow's 1963 paper 'Uncertainty and the Welfare Economics of Medical Care', a singularity amongst his mathematical economics pearls. Blaug remarked, in 1998: "health economics would seem to be a perfect topic for heterodox dissent and yet, surprisingly enough, radical economists and Marxists have not on the whole been attracted to health economics". My view is this could have been because "mathematical economists" stepped forward and challenged themselves to solve problems such an unorthodox market posed.

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1. Recent history of Health Care and the "birth" of Health Economics in the U.S.[1]

After the end of the Second World War in 1945, the health sector experienced high levels of expansion, rationalization and organization. Health was redefined as "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity" (World Health Organization, 1947). With this definition health began to be seen in its social context, as a human capacity to cope with the environment and everyday life.

In fact, since then, health care suffered a genuine "revolution", particularly staged in the U.S., with dramatic increase in the knowledge of means for diagnosing and treating illness. Fifty years ago, physicians were little more than diagnosticians, their activities being essentially "limited to identification of . . . illness, the prediction of the likely outcome, and then the guidance of the patient and his family while the illness ran its full, natural course" *(Report of the President's Biomedical Research Panel* 1976, appendix A, p. 3). Now, we have sophisticated solutions to what used to be complex, or even 'impossible' problems: kidney dialysis, organ transplants, polio vaccines, arthroscopic surgical techniques, CT scanners, nuclear magnetic resonators, in vitro fertilization. As recently as a decade ago, heart and liver transplants were virtually unknown, while today being widely used.

Today, the United States is alone among developed nations with the absence of a universal healthcare system, presenting, however, significant publicly funded components: Medicare for the elderly and disabled, with a historical work record and Medicaid, for indigents, provide taxation-financed coverage. Employer benefit based health insurance remains quite common with larger employers. The Centers for Medicare and Medicaid Services (CMS), a component of the Department of Health and Human Services (HHS), administers Medicare and Medicaid.

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[1] It is universally recognized that Health Economics had its origins in the USA, so most of this essay's references, as to both the context, and the literature, are American.

The AMA and U.S. politicians: a late 40s-60s "tug-of-war"?

The creation of a new powerful authority: Medicare.

The *American Medical Association (AMA)* was created in 1848, having as main goals scientific advancement, creation of standards for medical education, launching a program of medical ethics, and obtaining improved public health. Yet, it was only in 1931 that economic concerns came to the agenda, with the creation of the *AMA Bureau of Medical Economics*, established to study all economic matters affecting the medical profession.

On another field, in 1935 the *Social Security Act* was approved by President Roosevelt, then *Social Security* in the U.S. covering *unemployment* insurance, besides the Federal Old-Age, Survivors, and Disability Insurance (*OASDI*) program. Social insurance was being created and the reform extended to the health sector by former World War II Vice- President, then President Truman, a defendant of a universal health insurance program, who in 1946 signed the *National Mental Health Act,* while developing and presenting a plan for *National Health Insurance* for his 1948 reelection, immediately followed by a consistent AMA campaign against it. In 1947, Truman stated "[o]f all our national resources, none is of more basic value than the health of our people." In his 1948 address, he said "[t]he greatest gap in our social security structure is the lack of adequate provision for the Nation's health." His support for this reform "evolved from his dismay that one-third of the men reporting for the draft during World War II were physically unfit to serve. What's more, Truman's populist foundation was shaken by the economic inequalities of medical care" (Greenberg, 1993).

The American Medical Association was a very powerful force and dominated "interest-group activity in the health policy arena" (Mayes 2004). With endless funds, the AMA attacked Truman's proposals as Communistic, during a Cold War era, and ultimately destroyed any chance of success for Truman's proposal, even though supported by public opinion, usually fearing major governmental intervention. It would only be in 1960 that the AMA would develop national policy on health care for *older* patients. It allowed for the building of foundations for the creation of Medicare. Though AMA managed to delay it, through its vehement 1950s and 1960s campaign against Medicare, it was finally signed into law on July 30, 1965 by President Johnson, as part of his *Great Society* programs[2]. The AMA lobby still campaigns to raise Medicare payments to physicians, arguing that increases will protect seniors' access to health are.

[2] At the bill-signing ceremony President Johnson enrolled former President Truman as the first Medicare beneficiary and presented him with the first Medicare card, as a recognition for all of his effort.

Health Economics is born?

Though Milton Friedman had, from 1929-1936, studied some issues concerning differences in inequality of income among professions such as those of a dentist or physician, namely due to the highly individualized nature of the service and the qualitative range in the performance of these functions, he had focused, up until then, mostly on statistical issues in his research[3]. It is precisely in the late 1950s and beginning of the 60s that Economics begins it's incursion on Health issues. One of the first authors to define Health Economics as a specific discipline is Selma Mushkin[4] in her 1958 "Toward a Definition of Health Economics". Muskin traced the recently acquired interest in this sector precisely to the advance of medical techniques, and to the consequent problems of the financing of costs for medical care. Her contribution is undeniable for the definition of a newly "born" subject, enhancing the error incurred by the "health administrator" as equating "health economics" with "money questions in the field of health", and defining it as a broader science "concerned with the optimum use of scarce economic resources for the care of the sick and the promotion of health, taking into account competing uses of these resources". Later, in 1962, with *Health as an Investment*, she argues people develop themselves by investing in health services and education, with a future return associated with it. Interestingly, a similar argument would be followed later on by Grossman, in 1972, obtaining a much wider academic recognition. I discuss this later on.

We can say Health Economics, as a discipline, had been launched, approximately around the same time as Economics of Education and other applied fields, both making use of Human Capital Theory, yet, until today, this discipline's "official birth" is still attributed, by many, to Rational (or Social) Choice Theorist Kenneth Arrow, and his 1963 article, in what I shall call the official recognition, or "baptism", of Health Economics.

2. Rational Choice Theorists and the "baptism" of Health Economics during the Cold War

Behind the curtain: The RAND Corporation and the Ford Foundation

[3] As exemplified by his dissertation on *Incomes from Independent Professional Practice* published with co-author and thesis advisor Simon Kuznets, in the National Bureau of Economic Research Bulletins,1939.

[4] Mushkin accumulated the job as an economist for the Division of Public Health Methods, Public Health Service, and as a research associate at the John Hopkins University School of Hygiene and Public Health.

The RAND Corporation

The RAND Corporation[5] was set up in 1946 by the United States Army Air Forces as **Project RAND**, under contract to the Douglas Aircraft Company, and in May 1946 they released the *Preliminary Design of an Experimental World-Circling Spaceship*. In May 1948, Project RAND was separated from Douglas, the split being sponsored by the Ford Foundation, and became an independent non-profit organization, to "further promote scientific, educational, and charitable purposes, all for the public welfare and security of the United States of America." Its self-declared mission is "to help improve policy and decision making through research and analysis".

Initially, RAND focused on issues of national security, during the *Cold War*, the period of protracted conflict and competition between the United States and the Soviet Union and their allies from the late 1940s until the late 1980s. It is considered to have been the very first *think tank,* and represented, to the Soviets "[a]n American Academy of Death and Destruction"[6]. Eventually, RAND expanded its intellectual reserves to offer insight into other areas, such as business, education health, law, and science. RAND's innovative approach to problem solving has become the benchmark for all other *think tanks* that followed. The achievements of RAND stem from its development of systems analysis. Important contributions are claimed in space systems and the United States' space program, in computing and in artificial intelligence. RAND researchers developed many of the principles that were used to build the Internet. Numerous analytical techniques were invented at RAND, including dynamic programming, game theory, the Delphi method, linear programming, systems analysis, and exploratory modeling. RAND also pioneered the development and use of war-gaming.

The Ford Foundation

The Ford Foundation was chartered on January 15, 1936 by Edsel Ford and two Ford Motor Company executives "to receive and administer funds for scientific, educational and charitable purposes, all for the public welfare". After the deaths of Edsel Ford in 1943 and Henry Ford in 1947, the presidency of the Ford Foundation fell to Edsel's oldest son, Henry Ford II. Under Henry II's leadership, the Ford Foundation board of trustees commissioned a report to determine how the foundation should continue. The committee, headed by California attorney H. Rowan **Gaither**, former assistant director of MIT's Rad Lab, recommended that the foundation should commit to "promoting peace, freedom, and education throughout the world". The board of directors then decided to diversify

[5] RAND is an acronymic name, resulting from the contraction of "*R*esearch *AN*d *D*evelopment"
[6] Kraft, "RAND: Arsenal for Ideas," at 69, in Amadae, 2003

the foundation's portfolio and gradually divested itself of its substantial Ford Motor Company stock between 1956 and 1974. By this time, Ford was clearly the richest American philanthropy.

In my view, this was clearly a time where the Foundation redefined itself, both in terms of goals, which now transcended the mere charitable purpose, clearly acquiring a more political dimension, and of leadership, gradually cutting its ties to the Company[7], and having Gaither as chairman of the board.

What I believe is worthy of emphasis is the fact that Gaither, while chairman of the board for the Ford Foundation, was also the chairman for RAND, undisputedly proving the strong links between the sponsor giant, and the recently "independent", sponsored non-profitable RAND, the 50s *think tank* icon of Cold War America. Furthermore, during this time, Gaither was invited by President Eisenhower to head a committee to study the American civil defense program, having he produced the top secret "Gaither Report", which in the end gave origin to the (fallacious) assertion of a 'missile gap' between the U.S. and the Soviet Union, leading the charge for civilian control of the Pentagon, starting with a complete reform of the defense department based on the tools of *rational* management.

This was, therefore, clearly a time when both the institutions clearly articulated with the State, and its military concerns on a Cold War era, Ford contributing with the money, RAND with the brains for the operations.

Roelofs (2003) reports that John J. McCloy, while chairman of the Foundation's board of trustees[8], "...thought of the Foundation as a quasi-extension of the U.S. government. It was his habit, for instance, to drop by the National Security Council (NSC) in Washington every couple of months and casually ask whether there were any overseas projects the NSC would like to see funded."

RAND has, since then had numerous notable participants, ranging from Nobel prize winning economists, namely Arrow, Simon, Nash, Schelling, and Phelps to politicians, namely modern-day ones, such as Donald Rumsfeld (former Chairman), Secretary of Defense for the U.S., and Condoleezza Rice, Secretary of State for the U.S, both former members of RAND's *board of trustees.*

Today the Ford foundation remains a national and international foundation with headquarters in New York City and offices in Asia, Africa, the Middle East, Latin America and Russia. To this day, the program areas of the foundation advance the goals outlined in the Gaither Committee report. The Ford

[7] Note that in the beginning of the 60s the Foundation was still strongly connected to Ford Motor Company, then presided by Secretary of Defense Robert S. McNamara. (see also note 10).

[8] Former Assistant Secretary of War, during World War II, advisor to John F. Kennedy, Lyndon Johnson, Richard Nixon, Jimmy Carter, and Ronald Reagan, McCloy was chairman of the Ford Foundation from 1958 to 1965; he was also a trustee of the Rockefeller Foundation from 1946 to 1949, and then again from 1953 to 1958, before he took up the position at Ford.

Foundation has been accused of supporting many *progressive* causes. It is a major donor to the Fairness and Accuracy in Reporting (FAIR), a self-described progressive media watchdog group. Certain critics have criticized the Foundation for alleged links with the CIA.

RAND, Ford and Rational Choice Theory: context for the "baptism" of Heath Economics

The new science of decision-making provided by game theory proved to be suited to the cold war tactical and strategical "game" played between the United States and the Soviet Union, finding itself a home in Santa Monica: the RAND Corporation. Here, Game Theory was enthusiastically developed between the late 1940s, and the 50s. This was a new approach to finding optimal solutions for human action in strategic and uncertain scenarios, without resorting to traditional constrained optimization problems of scarce resource allocation. Soon Game Theory, then as a "new science of choice" and study of human interaction, spread to all kinds of different areas, from political science, sociology and psychology to biology, becoming this "rationality project" instituted as a study of collective or individual decision-making, where the actors' individual interaction could be equated through mathematical formalism, producing collectively rational outcomes (Amadae, 2003; Mirowski, 2002). This "escape from psychology" meant cleansing neoclassical theory from any psychic concepts of economic behavior such as pleasure, motivation and utility, among others (Giocoli, 2003). Soon this science spread its wings through most of RAND's departments and agenda, from political and military decisions regarding the 'missile gap' and the Sputnik shock, in 1957, to domestic policymaking, namely in the Health department. President Johnson's *Great Society* programs, Medicare having been a product of them, as previously mentioned, took use of these new decision technologies, as "policy analysis" became an accepted manner of making foreign and domestic policy judgments.

Rational choice theory was claimed to be devoid of ideology and based entirely on scientific principles, and in this context they were formulated, directly addressing policy questions of equity and distributive fairness. Arrow[9]'s impossibility theorem, for example is rooted on a conception of social justice based on carefully argued principles and articulated in mathematical terminology. He argued that social preferences (social welfare) should come as a result of aggregated individual interpersonal comparisons of preferences, and that the "political procedure of majority ballot will generally produce social rankings of alternatives that violate that 'social welfare function'" (Mirowski, 2002). In the

[9] Arrow was, undoubtedly, directly linked to the RAND Corporation, during the Cold War era: "I spent the summer of 1949 as a consultant of the Rand Corporation…There was a philosopher on the staff, named Olaf Helmer…He was troubled by the application of game theory when the players were interpreted as nations…I assured him that economists had thought about the problem…He asked me to write an exposition…" (Arrow, 'The Origins of the Impossibility Theorem' In Lenstra et al., 1991, pp. 1-4 (1991))

Health Economics context this tendency manifested itself in what was to be considered the launch of such a discipline: Arrow's 1963 paper "Uncertainty and the Welfare Economics of Medical Care". Financed by the Ford Foundation, interested in collecting papers in the developing, both technologically and politically, Health sector, it was to be integrated in a series of papers on the economics of health, education and welfare, and was supposed to address the medical market.

Arrow starts off by evaluating the distance of this industry to the "norm", that is, "perfect competitiveness", insisting on the predictive value of a model, rather than explanatory, following a Friedman philosophy. This is a good example of the attempt to apply such rational choice theories to the health industry by the 1972 Nobel Prize winning inventor of them, himself. After exploring some of the particularities of the health market, he redefined optimal Pareto equilibrium as one which maximizes welfare (even if at the expense of sacrificing some self-interest, provided much greater benefits come to others, which compensate for these losses). Then government intervention would be warranted for two reasons: either there is an absence of Pareto Optimality; or it exists with a socially inequitable health outcome. Therefore, provided the allocation mechanism in the market works, social policy needs only to confine itself to redistribution, that is, public policies. This was consistent with Arrow's later redefinition of rationality: "the major meaning of *rationality* is a condition of *consistency* among choices made from a different set of alternatives" (Arrow, 1996, cited in Giocoli). [10]

However, what is interesting to note, and in fact has been the focus of all later references in Health Economics literature, is that when further characterizing this potentially allocating efficient market, Arrow addresses issues such as the non-marketability of goods, which results from *spillovers* or externalities inherent to them, due to market imperfections, as well as issues such as the omnipresent *uncertainty*. This uncertainty would be present in the numerous agency relationships (the physician-patient, with physicians detaining privileged information, insurance schemes-physician and patient-insurance schemes) which are dominated by asymmetric information, therefore sustaining moral-hazard situations, in the evaluation of the quality of the simultaneously produced and provided medical service, in pricing policies, and in the unpredictable nature of demand itself. Arrow concludes as to the impossibility of a competitive equilibrium, even controlling for uncertainty, in such a singular market, and I firmly believe, implicitly (and at times explicitly) recognizes the influence of 'irrationalities', ranging from politics to emotions and the role of an individual's private network in assuring credibility

[10] This would mean that the conditions to *rationality* would have evolved from the traditional *maximization* approach (i.e., the reasoned pursuit of self-interest) to the *consistency* view, translating this *consistency* into extra, non-economic restrictions placed upon the agent's behaviour, redefining this agent, through a purely formal representation, as any kind of decision-maker: human, individual, collective, institutional or even as a computer. In the words of Nicola Giacoli, the rise of this *consistency* approach had 'forced neoclassical economics to abandon no less than its major theoretical goal, namely, the explanation of the individual's behaviour' (also consistent with Mirowski, 2002).

and reputation (later, in 1988, Pauly addresses this). Accordingly, an interesting aspect he considers in this article is the exceptional characteristics and ethical duties of the medical profession, which should have a collectivist orientation given the necessary existence of a trust relationship with both patient and insurance schemes.

In sum, Health Economics had been born and officially 'baptized' under the protective shadow of rational choice theorists, in a post-military context, having the RAND Corporation and the Ford Foundation as godparents. It had, however, been definitely considered a singular offspring, having Arrow enunciated most of its particular, 'irrational' forces.

3. The development of Health Economics literature.

RCT and public choice theorists' politics

During the Cold War the profound overlap between the two worlds of academic choice theory and public and social policy (namely in the Health department) remained yet too evident. The network of RAND scientists and researchers involving rational choice theorists (RCT) such as Schelling, Ellsberg and Raiffa, was strongly imbedded both in the military departments, as was the case of the two first, who incorporated McNamara's[11] Department of Defense team, and in the intellectual, academic world, both Schelling and Raiffa occupying prominent academic posts in the Harvard University's John F. Kennedy School of Government, 'molding' the intellects of future public policy makers. In the late 40s, and the 50s, there was sharing of resources by RAND and the Chicago-based Cowles Commission[12], and by the 60s this network was actively participating in Public Choice Society

[11] McNamara was chosen by President Kennedy to serve as his Secretary of Defense, after he had assumed the presidency of Ford Motor Company one day following the election. Therefore, though McNamara's takeover of the Pentagon was actually made possible by the set of decision-theoretic and management tools supplied to him by RAND staff, besides the 'Gaither Report', he was already familiarized with rational management techniques he used at Ford (he had joined the Company in 1946 as manager of planning and financial analysis).

[12] Arrow is precisely, and most probably, one of the most relevant examples, in the health economics context, of this sharing of intellectual resources (and influences), which allowed for mathematics, game theory and other rational 'tools' to find their way into economics, social and public choice policy making. In his 1972 autobiography he wrote:
" The brilliant intellectual atmosphere of the Cowles Commission, with eager young econometricians and mathematically-inclined economists under the guidance of Tjalling Koopmans and Jacob Marschak, was a basic formative influence for me, as was also the summers of 1948 and subsequent years at the RAND Corporation in the heady days of emerging game theory and mathematical programming. My work on social choice and on Pareto efficiency dated from this period."
(from *Nobel Lectures, Economics 1969-1980*, Editor Assar Lindbeck, World Scientific Publishing Co., Singapore, 1992)

meetings, and giving shelter to political science students from the University of Rochester, who participated in Summer workshops held at RAND (Amadae, 2003).

Naturally, this had its effects on the increasingly interventionist policies on the Health sector, as was observed in cases such as President Johnson's Great Society Programs, which namely had as consequence the creation of Medicare (and Medicaid) in 1965. Rational policy analysis, including Planning-Programming-Budgeting and cost-effectiveness analysis, became confirmed as decision-making methods as they became institutionalized as "social practices carrying the weight of social decision", rather than actually having been demonstrated their credibility and worthiness (Amadae, 2003).

This was the scenery in the 60s, when policymakers were engaged in a vigorous debate (namely involving the AMA) about how health care should be financed. I would now like to address two important occurrences, in the light of this context. Firstly, this was the time when RAND Health was created, as a department thought to continue the tradition of improving policy and decision-making through research and analysis. To provide a factual basis for the debate, in 1971 the Department of Health, Education, and Welfare (now the *Department of Health and Human Services*, of the *United States Public Health Service*) funded the RAND Health Insurance Experiment, a 15-year, multimillion-dollar effort that to this day remains the largest health policy study in U.S. history. The study's conclusions encouraged the restructuring of private insurance and helped increase the stature of managed care. It was to have a major influence in the development of Health Economics post-cold war literature of the 80s, which I will address, further ahead.

The effects over health economics literature of this strong influence of rational choice over public choice theory are yet too evident in the second occurrence I'd like to discuss. The U.S. government, also through the *United States Public Health Service,* sponsored one of the most important articles in the field of Health Economics. Pauly's[13] *The Economics of Moral Hazard: Comment,* published in 1968, and written under the supervision of James Buchanan[14] was precisely a comment on Arrow's 1963 paper. Arrow had identified uncertainty as a source of market failure, to be countered by insurance against medical care expenses, in order to assure social welfare, either to be provided through government intervention, or by the market. Yet, competitiveness and optimality would still encounter a barrier in uncertainty, which would allow for *moral hazard*, since the lowering of marginal cost of care to the patient, due to insurance, could increase unnecessary usage. I believe Pauly comes with an

[13] Interestingly, since 2003, Pauly integrates the National Advisory Council of the Agency for Healthcare Research and Quality from the *U.S. Department of Health and Human Services,* and is part of the *Medicare* Technical Advisory Panel.
[14] James Buchanan won the 1986 Nobel Prize in Economics, mostly for his work on public choice theory.

attempt to "salvage" Arrow's (conscious, or not) "escape from RCT" when describing the non optimal health care market. Under the supervision of a public choice theorist, Buchanan, he seems to attempt to restore the optimality framework, while stating that in certain cases, insurance may be non-optimal, even when individuals have risk-aversion, proving that in certain cases the market has actually been efficient when not intervening, thus preventing *moral hazard*. According to him, these 'non-insurable' medical care services would be those with price-elastic demand, and non-random nature (such as is the case of preventive medicine), therefore subject to *moral hazard,* due to demand being inflated by the existence of insurance coverage (which reduces point-of-service price for the patient). Thus, Pauly would then recommend that compulsory social insurance, as had been conceived by Arrow[15], would only be possible, and therefore should be restricted, to certain medical care services, with perfectly (price) inelastic demand[16].

What I regard as being of incredible interest to notice, is the relationship between the publishing dates and authors of these articles with the creation of Medicare (and Medicaid), in 1965 (Pauly being, today, an advisor of its board), as a governmental institution providing insurance coverage only for the elderly and disabled (and indigents), with a historical work record, the U.S. remaining till today one of the few developed nations with absence of universal health care, even after all effort towards it, endured recently by President Clinton (I shall address this further ahead).

Furthermore, in my opinion this was clearly another victory of the rational (public) choice theory framework on health economic literature development, at the time. Pauly actually repudiated the "rather strongly emotive approach" of some previous authors[17], when regarding these overuses as a moral or ethical problem of "malingering" individuals suffering from "hypochondria", rather than as

[15] While certain authors(*) have counter-argued against Arrow's case for government intervention, presenting selling and transaction costs as the reason for the absence (at the time) of commercial (private sector) insurance, Arrow defended his argument on the basis that these where dead-weight losses anyway, to be eliminated by compulsory social insurance.
(*) see R.D. Lees and R.G. Rice "Uncertainty and the Welfare Economics of Medical Care: Comment", *American Economic Review*, March 1965, 55, 140-54

[16] Citing Buchanan (*The Inconsistencies of the National Health Service*, 1964), he argues as a rational choice theorist (following Arrow) would, for the existence of an *inconsistency* if these non-insurable services were to be covered by market or government provided insurance. The nature of this *inconsistency* would reside on the fact that before 'purchasing' insurance, the individual (or government) would have to account for the "indirect" cost of it (which should reflect expected excess use, due to *moral hazard*). This, resulting from a "prisoners' dilemma" equilibrium, in which the strategy of "retaining use to prevent a rise in the insurance premium" would be strictly dominated by that of "excess use of care", even though a better outcome would prevail from all beneficiaries cooperating and "retaining use". Therefore, given inelastic demand, this *inconsistency* would imply inefficiency if individuals (or governments for them) were forced to purchase insurance. Notice the strong influences of RCT and other analytical tools developed at RAND, only a few years before (he actually cites Raiffa's 1957 *Games and Decisions*).

[17] He is referring to "O.D.Dickerson, *Health Insurance,* rev. ed. Homewood, Ill, 1963" and "E.J. Faulkner, *Health Insurance*, New York 1960".

pure rational economic behavior[18]. In fact, today, these authors' writings on this subject can be considered rather marginally, when compared to Pauly, a consecrated Health Economist.

The NBER and the Neoclassical School

More or less parallel to what was happening under RAND, governmental, and AMA influence, other things where happening in the academic world.

As previously mentioned, by 1972, Grossman[19] was obtaining much wider recognition than Mushkin had had for a similar argument, for his article based on his earlier Columbia University PhD dissertation, to be published by the *National Bureau for Economic Research* (NBER), sponsored by the Commonwealth Fund and the National Center for Health Services Research and Development. By that time, the idea that individuals invest in themselves was beginning to be accepted, and Grossman's formal model regards health as a stock of a commodity so that in order to maintain it above a minimum (death) level, generating a certain utility, you have to invest in it (as in Mushkin) by buying market goods (like medical care, nutrition, pharmaceuticals, etc), besides your own time. The model relates health stock depreciation with age, and the demand for it with the wage rate and education. He based his paper on a consumption and demand theoretical framework, thanking and referring the works on consumption theory of Gary Becker (his PhD program teacher), Lancaster, Muth, Michael, and Ghez, all published between 1965 and 1970[20]. By that time, he clearly wasn't a health economist, having this article consecrated him as one, after Victor Fuchs employed him at the NBER, in 1966, conditional on him writing on health economics (Grossman, 2004).

This suggests to me a couple of questions I would like to see answered. Why was Grossman so successful using an argument that had been referenced nearly a decade before by Mushkin, clearly a precursor for the discipline, even though not much recognised as such? One could argue that this was a time women weren't taken as seriously as men, but without loss of this argument's worthiness, couldn't it have been because Mushkin had brought up the subject right in the middle of the tug-of-war between National Health interests and private interests from the AMA lobby? Notice that health issues were necessarily being brought up by technological advance, but the U.S. government had not yet the validated interest on them, given by Medicare being finally signed into law in 1965 (see also note 12), nor the legitimate funding resources which enabled the strong investment in health economic studies

[18] He actually criticizes Arrow for considering *moral hazard* as a market imperfection, "a defect in physician control, rather than as a simple response to price reduction", which should be equated in the welfare proposition.
[19] Nowadays, Grossman directs the NBER'S Health Economics Program.
[20] Notice all of these publications were precisely after Medicare was signed into law, in 1965.

which came thereafter[21], incremented by non-governmental initiatives, such as RAND's or Ford's, in a rational choice theory euphoria, or a "rationalizing capitalist democracy" (Amadae, 2003), as discussed previously. The context was, therefore, much more favourable to Arrow and Grossman's work.

On the other hand, in order to answer these questions, it should be interesting to note the evolution of Economic Thought at the time. The "new generation" of the NBER network, which had been created in 1920, was placing aside the empirically driven, econometric and statistically based theory of the *old institutionalists*, and adopting a *neoclassical* perspective, where theory came from pure abstraction of thought, only then followed by empirical verification, this put in very broad terms. The network of researchers was driving its way from the Chicago school, to Columbia University[22]. It is precisely in this context that Gary Becker[23], a neo-classicist, *new institutionalist* leaves Chicago, in the late 50s, early 60s, and starts teaching PhD students at Columbia University, namely Grossman. The fact is that Grossman, in his 1972 article recognizes that most of this paper had been written at the *Chicago's Center for Health Administration Studies*, having presented a preliminary version of it at the *Second World Congress of the Econometric Society*. Yet, Grossman moves, as Becker had done before, to Columbia, where he concludes his PhD dissertation, including this article, to be published by the NBER, now with a clear neoclassical dominance, as clearly is noted by its consumption and demand theoretical framework, certainly very different from his presented econometric first version, or Mushkin's strongly empirically based, narrower in scope, articles[24].

4. Since the 1980s: Unraveling into two paths

RAND again, the AMA, the Insurance Industry and the U.S. Government

[21] I will discuss these developments after the 80s, with the strong investment in the RAND Health Insurance Experiment.

[22] Note that Arrow, himself, had just been an integrating part of this network, sharing intellectual resources: "The years 1946-1949 were spent partly as a graduate student at Columbia University, partly as a research associate of the Cowles Commission for Research in Economics at the University of Chicago, where I also had the rank of Assistant Professor of Economics in 1948-1949", (from *Nobel Lectures, Economics 1969-1980*, Editor Assar Lindbeck, World Scientific Publishing Co., Singapore, 1992).

[23] It is relevant to note, that Becker had been precisely one of the most notable students of Milton Friedman, at Chicago, the 'positive economist' who placed the emphasis, in terms of methodology, in the empirical, statistical and econometrical. In fact, as referred earlier, Friedman's first studies, had involved the medical profession, through an econometric study.

[24] Mushkin was both an economist for the Division of Public Health Methods, Public Health Service, and a research associate at the John Hopkins University School of Hygiene and Public Health. She based her initial studies in the U.S. National Health Survey.

Though the neoclassical trend was trying to establish itself also on the Health sector of Economics, it seems to me this trend was let down in the 80s, only to recently resurge, possibly due to the interactions between the major institutions demanding for responses and empirical studies to shorter-term problems. I briefly describe the main forces behind this demand for studies.

Besides the important role it played in the delay of Medicare creation, in the 50s and 60s, the American Medical Association (AMA) did continue to play an important role in influencing Health policy issues. Yet, what interests us most is its part in the stimulus of further literature and health economic thought, constituting a further example of why I believe Health Economics did develop, since the late 70s, into a practitioner driven subject. In 1979, Milton Friedman saw his and his wife's *Free to Choose* published, later developing into a TV series aired by the Public Broadcasting Service (funded and founded with the help of Ford Foundation, in 1970). In it, he heavily criticized the AMA, asserting that it acted as a government-sanctioned "guild"[25] which had attempted to increase physicians' wages and fees limit by influencing limitations on the supply of physicians and non-physician competition, therefore making illegitimate use of its privileged information and access to the health market, and exclusive know-how which allowed them to work as a lobby, exerting political pressure. Thus, Friedman was now empirically characterizing the asymmetry of information described by Arrow, as allowing for practitioners prosecution of self-interest which makes this sector deviate from the norm of perfect competition, and Pareto Optimality. Friedman also asserted that these actions had not only inflated the cost of healthcare in the United States, but had also caused a decline in the quality of healthcare.

After the Cold-War ended, a number of intellectual and financial resources were now without a purpose, and as usually happens, institutions such as RAND had to find a justification for its existence. RAND started to diversify its research portfolio, beyond national security issues, namely investing and creating the Health "department"[26]. As referred to earlier on, the RAND *Health Insurance Experiment (HIE)* was a major investment which motivated several studies, drifting theory to practitioner driven literature, namely on insurance effects and policy.

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[25]Traditionally, this word was used to describe an association of craftspeople, possessing a certain exclusive know-how and expertise. Consider Friedman's description of the guild's operations:
"One effect of restricting entry into occupations through licensure is to create new disciplines: in medicine, osteopathy and chiropractic are examples. Each of these, in turn, has resorted to licensure to try to restrict its numbers. The AMA has engaged in extensive litigation charging chiropractors and osteopaths with the unlicensed practice of medicine, in an attempt to restrict them to as narrow an area as possible. Chiropractors and osteopaths in turn charge other practitioners with the unlicensed practice of chiropractic and osteopathy."

[26] See Apendix 1

Weisbrod (1991) [27] described the exponential post-World War II growth of health care expenditure, attributing it more to the development of new technologies than inefficiently great utilization due to insurance, which would drive up both costs of care and of insurance. At the same time, expanding insurance coverage, which included more people as well as a wider definition of coverage, had provided an increased incentive to the R & D sector to further develop new technologies, resulting in an interactive, virtuous circle. Finance of this sector had shifted from retrospective, cost-based insurance coverage to prospective, exogenously determined pricing. This was similar to what had happened much earlier in the Education sector, and for Weisbrod, was the reason behind its slow development, contrary to Health. In sum, development issues were driving the focus of attention to insurance policies.

Manning, Newhouse[28] et al. (1987), then affiliated at RAND[29], presented the final results of the HIE, examining the effects of varying levels of cost sharing (coinsurance plans) on the demand for medical care and other health services, clearly proving their existence and strength of a nonzero elasticity of demand. Yet, this was now done with a strong statistical and econometrical approach, based on a large scale HIE database, to what had been theoretically brought up by economists such as Arrow and Pauly during the Cold War. This important database was to constitute the foundations to most of the further literature on this subject, which from here onward assumed itself as much more empirically based and driven.

Meanwhile, the debate for and against a universal health system was still on in the 1990s. The AMA was proposing a reform of the U.S health care system (*Health Access America*) to include expansion of (private) health insurance coverage, lobbying for the change of federal tax codes to allow the current health insurance system (based on employment) to be purchased by individuals[30]. It was part of the coalition between Conservatives, libertarians, and the **insurance industry** that defeated, in 1994, the health care reform, proposed by Hillary Clinton (and President Bill Clinton) towards a *universal* health care system[31], through a well-organized campaign that accused it of being over-bureaucratic, and arguing on the base that Medicare funds were already predicted to run out by 2017. Clearly, empiririically driven questions were being brought up by the market, by consumers,

[27] In his article he starts off by thanking several participants of his seminar at the RAND Corporation.
[28] J. P. Newhouse and W.G. Manning are currently editor and associate editor, respectively, for the leading journal in this subject: the *Journal of Health Economics.*
[29]This research was conducted under the governmental grant 016B80, again from the *Department of Health and Human Services.*
[30] Their plan was to enable individuals to afford insurance through a series of refundable tax credits based on income (i.e, the lower your income, the greater your credit).
[31] It involved enforced mandate for employers to provide health insurance coverage to all of their employees through competitive but closely-regulated health maintenance organizations (HMOs).

practitioners and policy makers, who wanted to understand and control for insurance policy making. Newhouse et al (1989) van Vliet (1992), Welch (1985), McCall and Wai (1983), for instance, dedicated themselves to evaluating the *predictability* of total expenditures in health services. Ellis and McGuire (2006) based their study on insurance plans adverse selection, in the 1996 and 1997 *Medicare Standard Analytical Files*, a random 5% sample of all Medicare beneficiaries and on the 1996 and 1997 *Denominator files,* for the elderly and disabled. It concluded as to the existence of rationalization in the choice of services covered by capitation based insurance health plans, which bias them towards offering less coverage of more predictable services, therefore also influencing demand (price-sensitive). For years Medicare had paid on the basis of age, gender, county and Medicaid status, which together explained only one percent of variance of total spending. Why it wasn't based on the real causal factors of spending was a question needing to be answered. Glazer and McGuire (2000) find a *service selection distortion* because of risk selection strategy from health plans, which choose their coverage so as to "selectively ration quantities of each type of service", which then influence the choice of plans by consumers, based on expectations of its coverage. Public health plans remained in ignorance of the real explicative forces of health spending, since insurance companies distorted influence on demand, wanting to over-provide services which were disproportionally anticipated by wealthier (healthier) people and undersupply services disproportionally anticipated by unprofitable (chronically ill, and older) people (supplied by public Medicare and Medicaid plans). Frank et al (2000) came to verify this theory, empirically, also confirmed by Mello et al (2002). They find incentives of Health Management Organizations in influencing demand, through their choice of coverage, covering more physician visits (which, in my point of view, could explain the coalition between the AMA and the private insurance industry), but rationalizing on hospital care for unpredictable, random occurrences. Interestingly, these authors had verified, through articulated econometrically based empirical studies, what had been abstractly proposed by Pauly (amongst others), in the 1960s.

Recently, other authors have dueled with the issue of finding optimal coinsurance, developing strongly empirically based studies, making wide use of econometric techniques, or non-parametric tools, as did Manning and Marquis (1996), to estimate and articulate both demand for health insurance and for health care. Authors such as Sapelli and Vial (2003), have now started to diversify, using databases from their own nations and contextualizing as to their own national health system, in their case, to Chile but also narrowing down the scope of optimal policy analysis to the *individual*. On the other hand, others, such as Vera-Hernandez (2003)[32] have tried to innovate in the field through the

[32] Published in the *RAND Journal of Economics.*

application of less orthodox methods, in this a case structural estimation (of a principal-agent model), to such issues which have survived time, due to their omnipotent and omnipresent importance, since they were first referenced by economists such as Arrow, Pauly or Grossman.

5. Conclusion

What I believe is unquestionable, is that Health Economics, as a consecrated discipline, arose as an applied field in the U.S., given post-World War II preeminent health issues and technological development, but also as a consequence of 'intellectual diversification', stemming from Cold-War developed rational (and public) choice theory and analysis. Yet, history of health economic thought seems to have had a rather drastic redirection by the end of the Cold-War, which made both the intellectual and financial resources available to answering empirically-driven questions, with empirically-based studies, in a socio-political context in which Health had become a priority, and the 'optimal' allocation of resources for the care of the sick and the promotion of health was found to be a complex matter, imbricated in a network of conflicting interests and a singular market .

I also find evidence pointing to a development of the discipline into two distinct paths, or fields of research, each with their own researchers and approaches. The first, a more theoretical field of *Health Economics*, officially launched by Grossman (but previously ploughed by Mushkin), took a more theoretical path, rooted in Human Capital Theory, later giving way to recent literature regarding *health* as an investment, ranging from neoclassical models to structural, mathematical models using dynamic approaches to the broader sector of Health[33]. The second field, recognized by Health Economists as the *Health Care Economics* approach, which I defend was brought up by Arrow's characterization of the health *care* market and its specificities, ended up by taking a more empirical turn, strongly based on econometric techniques[34], mainly as a direct response to the demand for empirical studies, rising very much from practitioners, institutional and political forces, focusing on health market failures and the role of public intervention to assure health care to citizens.

In 1998, Blaug had remarked that "health economics would seem to be a perfect topic for heterodox dissent and yet, surprisingly enough, radical economists and Marxists have not on the whole been attracted to health economics". I believe this was because "mathematical economists", such as

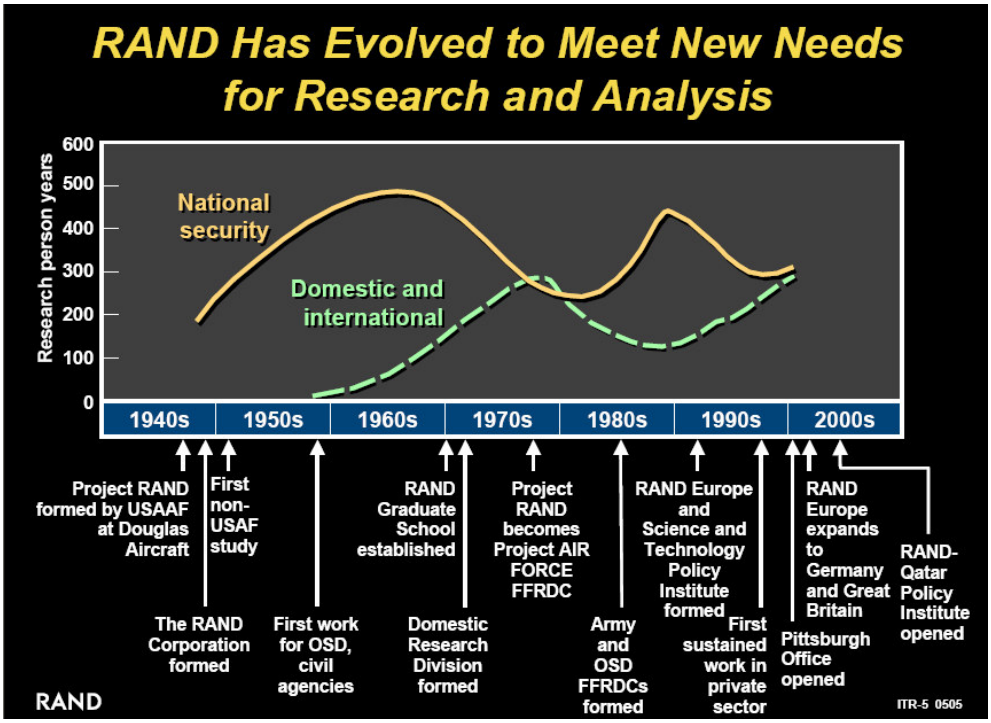
[33] This is easily confirmed by observing a variety of health economic papers published in a wide range of generalist economic top journals.

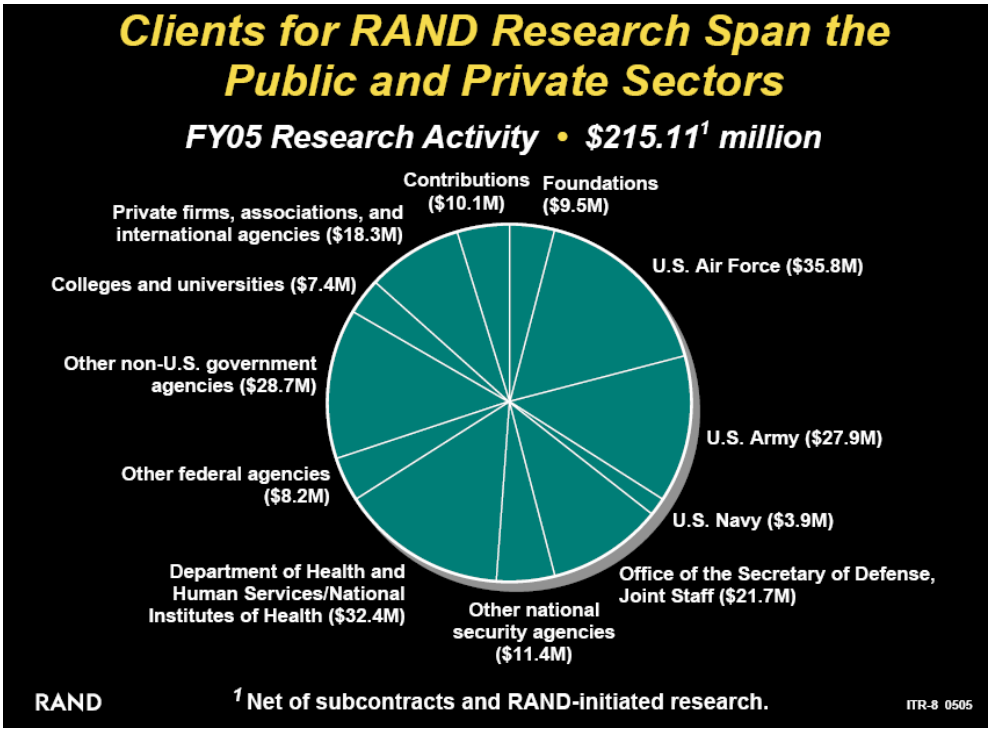
[34] We are referring to most of the papers addressing health care economics published in specialized journals such as the *Journal of Health Economics, Health Economics*, amongst others.

Grossman, Arrow, and their followers stepped forward and challenged themselves to solve problems such an unorthodox market posed, each giving origin to two distinct paths.

Appendix 1

(Source: RAND overview briefing slides at http://www.rand.org/publications)





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