

# SCIENTIFIC COOPERATION AMONG UNEQUAL PARTNERS: THE STRAIT-JACKET OF THE HUMAN RESOURCE BASE

**The Rockefeller Foundation in Venezuela in the 1940s**

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## **Introduction**

International scientific cooperation has been an integral component of diplomatic relationships between nations, and may imply collaboration as much as open or disguised competition. In the North, science has long been recognized as an instrument of economic development well beyond the bounds of the knowledge domain. It has been part and parcel of international diplomacy, accompanying the ventures of trade, alliance and/or military/political domination by the most advanced Western countries (1). In the South, science is also praised as a valuable tool for modernization, although there is usually a lack of favourable conditions for its sustained growth. These countries, too, use science as a political tool in the international diplomatic arena to obtain something other than knowledge (2). Scientific cooperation between North and South has taken place in the very unequal setting of the economic and political World Order. Given their different stakes, it is only to be expected that North-South scientific cooperation has a different meaning for the two groups of countries; their ultimate aims may even be opposite, although rhetoric often disguises the true dimension of the problem.

In the aftermath of World War II, "Development" became one of the leading forces in the international scene in connection with the large and heterogeneous "Southern" portion of the world that was submerged in chronic poverty and misery. Even a new discipline like Development Economics emerged to provide a theoretical base and analytical framework to practical approaches by governments and other interested parties keen to incorporate the exploited, ignored and despised "Third World" into the international arena (3). Optimism about the efficacy of new cooperation forms to solve the problems of backward countries led to the creation of a large number of international inter-, para- and non-governmental organizations aiming to deal with the many problems

of development. Fifty years later, however, the gap between North and South is greater than ever, which makes it inevitable to revise the nature of the social organization of international cooperation in itself, in its own rationality. Although disillusionment at the current confrontation with a much broader gap between rich and poor nations, between North and South, has induced many people away from the notion of development as if it were a useless concept, the gap is as real as ever, and the ambition to reduce it remains as valid today as in yesteryear (4).

The possibility of analysing what happened with the failed approach to development in the last fifty years gains relevance as the passage of time allows a more global view of processes that have already run their course and may be made less opaque. Better knowledge of the components (political, economic, cultural, etc.) components of North-South cooperation and the political practice associated to what was considered the "sacred mission of civilization" appears as a necessary step in this direction. The cooperation approaches for helping others develop have a long history of elaboration, in which multiple cultures at many levels have combined in complex fashion, reinforcing the multidimensional complexity that characterizes this subject. Despite the efforts to build scientific capability in less developed countries (LDCs), the majority do not do research in a significant way, so as to be able to put science to work for their own national development. The failure of many efforts and the success of a fewer number invites analysis of both kinds of phenomena as much in terms of research agendas transferred by the Northern donors as of cultural backgrounds of scientists and institutions in the South (5). What are the topics in which scientific cooperation takes place between North and South? For what purposes? What roles are played by the different partners?

Any development experience turns out to be the illustration of a development strategy, conceived and applied by a political power. The division of tasks is very indicative of the relative maturity and capacity for autonomous decision-making that the partners in the cooperation have. It cannot be explained without making reference to the political conditions of its conception and realization, i.e. the sources of support and the interests in the cooperation project that determine the expectations of both parties, either donor and recipient in assistance-type projects or "equal" partners in truly collaborative endeavours.

Consideration of collaboration activities by the Rockefeller Foundation in Venezuela in different fields during the 1940s, and the hindsight knowledge we have today, fifty years later, of their impact on the local society, suggests some questions about the conditions for successful scientific cooperation between North and South. The countries of the South have served as guinea pigs for the experimentation with the most diverse social projects and economic recipes. The case of the RF is interesting in its emphasis on the support and growth of scientific research capabilities, particularly those associated with the basic sciences. The influence of its philosophy and outlook on the small scientific communities of the region seems to me to have been significant. At a time when the "scientistic" ideology of the scientific communities of Latin America is being subject to so many criticisms from the side of those who demand quick economic returns of a technological nature on investments in "knowledge", it may be useful to look at the kind of scientific capacity the RF was interested in developing. Was it good or bad?

Should it have acted otherwise? Policy errors are costly to all concerned, but the onus weighs more heavily on the weaker partners in cooperation projects, not the least those of an "assistance" nature. How to judge fifty years later those cooperation programs?

### **The RF Latin American scientific cooperation in the 1940s**

It is well known that in the 20th century the overseas programs of the philanthropic Foundations complemented to a significant degree the foreign-policy initiatives of the American state. Many of the same individuals were directly involved in the political fortunes of the state, the nation's major corporate and financial institutions, and the foundations, resulting in a shared belief about the general direction of the U.S. foreign policy. The Rockefeller Foundation was the oldest and, for much of the twentieth century, the most important American philanthropy working in Latin America (6). It played a crucial role in several sectors of the region's science and society, particularly in the development of the basic sciences in the schools of medicine, agricultural science, the use of DDT against malaria, the beginnings of professional nursing, and the first schools of social sciences in Latin America. Since the mid 1910s, RF activities in the region were carried out mainly through the International Health Commission (later Board and later still Division), first in connection with hookworm, then with yellow fever and later with malaria. After a major reorganization in 1928, the RF continued its emphasis on public health and medicine but began to pay more attention to scientific education under the assumption that the health of populations depended on the quality of the training of local physicians. This was when the RF awarded its first grants to Latin American life scientists, especially those working on physiology and neurophysiology in medical schools. As a necessary complement of modern medicine, it also supported nursing education programs.

In 1940, largely as a consequence of the interruption of RF activities in Europe due to the war in that continent, Warren Weaver, RF director of the natural science division, broached a plan to explore natural science opportunities in Latin America (7). The foundation began to alter its public health emphasis to promote agriculture, on the belief that a "traditional" agricultural sector and poor nutrition were the main factors retarding Latin American development. The basic aims of RF actions in connection with agriculture were to stimulate agricultural research, discovering and supporting worthwhile people and places, and the practical application of the natural sciences to agriculture, with particular reference to the improvement of the basic food crops of Latin America. The support of agriculture meant an expansion beyond the foundation's early attention to medical work, which continued until 1951 when RF's public health activities declined worldwide.

The RF made an effort to differentiate the medical (MS) and natural science (NS) programs. NS representatives were to leave to MS the development of projects in medical schools and medical research institutes, despite the difficulties of drawing hard and fast lines between biological and medical sciences (8). Until 1949 the NS Program kept a modest scale. The evolution of RF support to the different disciplines within the natural sciences scope is reflected in Table 1.

**Table 1. Annual distribution of funds within the RF NS program 1941-1950 (US\$)**

Year	Agricultural Sciences	Biological Sciences	Physical Sciences	General Purposes	Total
1941	2,291	7,100	8,275		17,666
1942	18,973	11,500	22,803		53,276
1943	38,226	31,950	8,120	5,000	83,296
1944	30,431	18,615	7,328		56,374
1945	42,891	5,330	96,379		144,600
1946	15,603	9,456	19,862		44,921
1947	28,095	40,543	19,592		188,230
1948	56,678	41,935	21,455		120,068
1949	18,987	71,375	27,075	14,000	431,437
1950	56,506	78,775	18,432		453,713

Source: RFA, R.G. 1.2. Series 300 Latin America. Box 123.RAC.

The progress noticeable in Venezuela in the early 1940s (population of 3.5 million) in education and research had "only started after the fall of president Gomez regime at the end of 1935, which ended a protracted period of dictatorship during which nothing was done for either education or science" (9). Despite a previous cooperation experience of the IHD between 1927 and 1933 that did not work out very satisfactorily because of the uncertain political conditions in the country and the lack of trained people there, in 1936 the RF decided to put Venezuela back into the list of prospective cooperation partners in view of the great demand for help from the new democratic government. Although in connection with fellowships Venezuela was acting on a self-reliant basis (10) sending up for training in the U.S. as many men as the RF was training on their own fellowships (11), its cooperation projects with Venezuelan institutions and researchers in the 1940s offer a good illustration of the activity in which the foundation was involved in the region during the period.

In some respects, conditions in Venezuela in the 1940s were similar to those in many other developing countries, but they were special in other ways. For one thing, the country had loads of money in a highly unstable political situation. The comment of H.M. Miller Jr., from the RF staff, with regard to Venezuelan agricultural public officers can be easily extended to the whole setting of public activity in the country: the Venezuelan government was under tremendous pressure to increase production, but its technical staff were "not well trained, did not trust their own judgment, committed vast sums, then changed their minds. They [had] a truly frightening confidence in the RF, and deeply want[ed] the RF to stay by them for counsel, moral support, and stability" (12). Thus, although actual scholarships, fellowships and other subsidies from the RF to Venezuela were comparatively few, their institutional influence was considerably larger, for most of the young graduates who went to the States during the decade to learn a particular technique or on graduate work, were somehow connected with the RF (13). Its officers contributed no little time to helping the scores of visiting Latin

American practitioners get the most of their stay in the U.S. (14) In the Venezuelan case, the foundation was even asked to take charge of administering the Venezuelan Ministry of Health's scholarships in the U.S.

### **Cooperation in agricultural research**

Throughout the 1940s the Rockefeller Foundation Natural Science Program supported an American scientist living in Venezuela and his Plant Genetics research (15). Although this case meant abreach of the rule of RF not to support American scientists working abroad but natives of the host countries, the fact that he was a young expatriate hired by the Venezuelan government, that the RF had not identified any other single research group active in the standard sense of the term and that he was working in a "hot" field in agricultural science – genetics of corn and sesame –, led them to take up the challenge to support Derald G. Langham in Venezuela for ten years, during which time he became one of the best known international specialists in sesame.

Himself the initiator of local research on plant genetics, Langham was also decisive in sending to the U.S. on RF post-doctoral fellowships two brilliant European researchers resided in Venezuela: Werner Jaffé, who had recently received a doctorate from Zurich in Biochemistry and who would later be considered one of the founders of biochemistry in Venezuela, and Issar Budowsky, a chemical engineer from the University of Toulouse who a few years later would emigrate to Israel joining the Weizman Institute. Jaffé went with Elvehjem to Wisconsin to do research on nutrition and ferments and Budowski to the Southern Regional Research Laboratory of the U.S.D.A. in New Orleans, under Markley to work on fat and oil biochemistry. Langham was also responsible for the two graduate fellowships the RF granted to his graduate students and collaborators at the Agricultural School – Carlos Rojas Gomez, who went to Ames to study experimental statistics and genetics at Iowa State College under Snedecor and Lindstrom and Ruben Ortega, who went to Cornell to study genetics and plant breeding. The symbolic support Langham received from the foundation was given to cover 50 per cent of the expenses of a small program of undergraduate student internships in Langham's lab aimed to discover potential research talents.

Langham's case, though, shows the difficulties of choosing the kind of research to be done in initial stage in a backward context in a field with obvious implications of applicability. He became convinced that it was necessary to start by providing a relatively low level of training. Thus although he started his professional career as a geneticist in Cornell, in the Venezuelan situation he became a plant breeder and chose to contribute to train local people and to improve the technical level of the country where he worked. Accordingly he accepted in his lab young people willing to learn and work with him who had low educational and social backgrounds. In doing this he violated the unspoken rules of local "status game" and got into conflict with those who were supposed to be his lawful partners, the agricultural engineers. Langham's growing conflicts with this emergent new segment of middle class professionals eager to carve for themselves a new social space different from and opposed to that of the lower class practical agricultural technicians, who were considered by Langham and others as the required elements for the development of field agriculture in the country, weakened his position

in the host country. By supporting him, the RF could not avoid getting involved in the dilemma. Probably his involvement with local entrepreneurial interests, the international lobbying of vegetable oil and the competition between seed-producing and oil processing firms, the economic activities of Nelson Rockefeller in the country, and the rejection of Maracay as the site for the Inter-American Agricultural Institute by Popenoe and the members of the Agricultural Committee because they felt that rain forest conditions were what needed study, were other ingredients that combined, leading ultimately to an unbearable situation. In December 1949 Langham was dismissed by the Venezuelan government and the RF dissociated itself from further cooperation with the Venezuelan Government.

### **Gabaldon, the Malaria Control Program and the Development of Research Capabilities**

By the mid 1940s Venezuela could rank as a first class achievement its national malaria control organization, largely due to the knowledge and organizing abilities of Arnaldo Gabaldon, regarded by the RF as the outstanding malariologist in Latin America (16), and to the state of advancement of governmental activities in the health domain. As a result of a malaria survey made by Rolla B. Hill during the 1927-1930 period and his subsequent recommendation, a Division of Malariology was created in the National Health Department. Gabaldon was selected to head this Division. He was awarded a fellowship by the IHD and got a doctorate in public health from Johns Hopkins University. On his return in 1936 he became director of the Division of Malariology which under his leadership won favourable local and international recognition (17). Headquarters were in Maracay, where Government built the premises of the Institute, housing offices and staff, a library, a museum, laboratories, and a School of Malariology. A ten-bed ward for clinical studies on malaria in the Municipal Hospital in Maracay was controlled by the Division of Malariology. Organized courses in malariology were given annually at the Malaria Institute for medical men, engineers and inspectors. The School of Malariology accepted students from other countries. The Division was well supported by Government for its malaria control and teaching activities; with approximately 2 US\$ million annually, it had one of the highest per capita allocations for malaria control in the world.

However, Government found it difficult to provide funds for research. Gabaldon was anxious to combine a research program with his control and teaching programs, for he thought that with the available facilities, Venezuela was a ripe field to carry out an integral malaria research program. M. Bates had the impression, both from observation of this specific division and from the scientific activities of the Venezuelan government in general, that the chief lack was personnel, since both interest and funds seemed to be available. He was clear that Gabaldon hoped that this development would be speeded if the RF started malaria research in Maracay, since the key personnel and the initial impetus would thus be supplied (18). Eventually the Venezuelan Government persuaded the IHD to undertake malaria studies in cooperation with its Division of Malariology. A contract was signed in 1946 by which the RF would assign an experienced malariologist, Paul F. Russell, to direct the studies there, assisted in the beginning by John Maier, who also had valuable experience with IHD and in the Army. The research activities

would be financed entirely by the IHD while the Venezuelan Government would provide office and laboratory space and other facilities both at the headquarters of the Division of Malariology in Maracay and in the field.

So far the strongest aspects of the program had been malaria control engineering and accurate cost accounting of control and other operations. The former was due to the policy of attempting to eradicate malaria from urban populations by drainage of breeding places. This program was quite successful. The rural control program depended largely upon the use of drugs, with over 1 200 treatment centers in the country. Epidemiological studies were perhaps the next most important phase of the program. There was a tendency to apply too refined a statistical treatment to data that were of doubtful accuracy. But with the pressure of other responsibilities, the research program had suffered. The weakest phase of the program, according to R.B. Watson's report (20), was in the general field of entomology. While emphasis had been placed on entomology, the staff for entomological studies impressed as being inadequate. There appeared to be no systematic collections for taxonomic studies. More important, studies of anophelic ecology seemed to be largely lacking.

Initially Russell did not find notable opportunities for malaria research in or near Maracay because of the impact of DDT on the natural ecology of mosquitoes, but once he accepted the fact of DDT in Venezuela and built a program around this fact, he realized that he could contribute a great deal. He found an unusual opportunity to be associated with a tropical DDT house spraying program more extensive than any in the world at the time (21). Thus a fruitful program of research principally in residual insecticides in relation to mosquitoes, and later to triatomids, was undertaken. Nevertheless, by 1949, when he was about to leave Venezuela John Maier wondered if malaria was a moribund field. Apparently many workers felt this way in Venezuela, where DDT appeared as the universal solution (22). Foundation aid to the Investigations Laboratory at the Malaria Institute in Maracay ceased on December 31, 1950, for lack of a powerful research program for malaria (23).

Although at some point the RF suggested that the malaria project might be used as a nucleus from which other projects in tropical biology and medicine could grow, Gabaldon was firmly opposed to any such idea. He pointed out that any suspicion that malaria was not the only objective would arouse jealousy and opposition on the part of other research organizations, particularly the University in Caracas which planned to develop a general institute of tropical medicine (24). He thought that mosquito studies should be strictly limited to *Anopheles*, since other groups of mosquitoes were the province of other divisions of the Ministry and so forth (25). This fitted with his general idea that everyone working on malaria should form an integral part of the malaria organization, including even the meteorologists. Such compartmentalization was rather disturbing to RF officials. Why this lack of cooperation within the Ministry and the University? Was it misunderstanding? Was it thinking little? Was it feudalism in the academic domain?

### **Pi Suner and Experimental Medicine**

In the medical education field, in the 1940s the RF supported, among others, Dr. Augusto Pi Suner, who had made an excellent start at Caracas in building up a

department of physiology, by attracting several promising young men to academic work (26). A former professor of physiology in the University of Barcelona and leading spirit in the Medical Faculty there, Pi Suner was "probably the most distinguished Spanish émigré in the field of medicine" (27). While in exile in France, he was invited to Caracas in 1939 to be professor of physiology and director of the new Institute of Experimental Medicine in the Central University of Venezuela. The University had obtained a special grant from the government for equipment of the Institute, and by South American standards the department of physiology was liberally supported. Pi Suner was the only professor in the Medical Faculty and one of the few in Latin American medical schools on a real full-time basis. He was handicapped, however, particularly in research, by inadequate library facilities.

The RF supported Pi Suner's Venezuelan endeavour by supplying the Institute with back volumes of a limited number of American journals running back to 1930. Also in agreement with their general view that the most important need in Latin America was for better trained teachers and investigators, a small fellowship program was established for Pi Suner's Caracas "very promising assistants" to study in the United States (28). Humberto Garcia Arocha had already spent a year with Fulton at Yale on a Government fellowship, Cabrera-Malo had studied with Hymans in Ghent and spent a short time studying nutrition in Boston. Marcel Granier got the first RF fellowship to study pharmacology under W. Salter at the Yale Medical School (29). Then Francisco de Venanzi went to the Department of Physiological Chemistry at the Yale Medical School under the direction of C.N.H. Long. Jose Avelino Cartaya was the third member of this group to be recommended by Pi Suner for a RF fellowship, in his case to study Biochemistry under the direction of B. Hastings at Harvard Medical School. Armando Soto Rivero went to Harvard Medical School in 1946 to work with E.M. Landis in Physiology.

The fellowship holders faced no problems of adjustment and looked promising. All of them got an extension of their fellowships by the Venezuelan Government, to complete their training or to look at organizational matters in different laboratories and health centers in the U.S. Granier was said to have a "mind and character that make for leadership". Louis S. Goodman, Asst. Prof. of Pharmacology at Yale, predicted "that in ten years or so Granier will be Rector of the University or Minister of Education in Venezuela" (30). On his return to Venezuela, he was appointed by the University to take care of the Department of Pharmacology and Applied Therapeutics at the School of Medicine. After a very satisfactory performance with Long in Yale, De Venanzi went to study other techniques useful to Nutrition and Pathological Physiology first with Cowgill and then with Bessey in New York City. By the end of his stay Long reported that De Venanzi had "proved to be a first-rate worker. He [had] recently submitted to Long a paper on a piece of research done here. It will make a very creditable article" (31). He went back to Caracas as Professor of Pathological Physiology at the Medical School. Cartaya stayed in the U.S. for a while on a Venezuelan government fellowship after his RF one expired, dividing his time between Biochemistry and Physical Chemistry. On his return he became Professor of Biochemistry at the Medical and Dental Schools in the Central University, "succeeding an elderly professor who was a practicing physician – not a chemist". Soto Rivero, who after completing his studies in the U.S. was asked



by Garcia Arocha to look into the organization of diabetic clinics in that country for such a clinic was contemplated in the new Medical Center in Caracas, took a position as professor of physiology in the Medical School.

Despite high initial expectations due to the intrinsic quality of the young staff involved, however, military interference with the university after president Romulo Gallegos was overthrown by a coup in 1948 became increasingly strong. Apprehensive, Pi Suner retired in 1951 at the age of 72. Soon after all but five of the teaching staff of his institute were expelled by the government (32). Results in the medium and long term have been very modest and the institutionalization of full-time experimental research in the Faculty of Medicine proved to be a frustrating endeavour. University salaries in the 1940s and 1950s were so low in relation to the cost of living that those on the regular schedule had to obtain most of their income from private practice or from non-teaching jobs. The RF attempted to have them concentrate on a research field during their fellowships and avoid dividing their interests between clinics and research. By 1948 the RF had concluded that "Caracas should remain tentatively on the cooperative list because of possibilities rather than performance, but...with restriction of aid to one or two progressive groups in the medical faculty" (Pi Suner's in *Experimental Medicine and Jaffé's in Anatomic-Pathology*) (33). Unfavourable political conditions during the 1950s and then the economic boom of the 1960s and 1970s contributed to research not taking root so easily. Thus private practice or public administration continued to prevail over research as an occupation, even in the case of the high caliber staff trained by the RF.

### **The RF and Public Health Nursing Education**

The RF was also involved with Venezuelan health authorities to establish a National School of Nursing between the late 1930s and 1951 (34). RF philosophy about nursing school building and its blueprint for the institutional organisation were associated with the idea of a University school for professional, knowledgeable nurses who could be efficient assistants in a modern public health and medical setting which, by the way, as shown in the two cases just mentioned, they were helping to develop through their health and medical education programs. Thus the accent was placed on the type of girl expected to attend the school, which was in sharp contrast with the one attracted to the school in a traditional society like the Venezuelan one, where most girls did not receive a formal education outside the parental home and the rate of illiteracy was extremely high. The problem of the teaching staff for the school was solved by the importation of pioneering European and Latin American nurses, themselves educated previously within the IHD program and tradition. In a few years the NSN was sending its best students to the U.S. to train themselves as instructors. In the 1940s 26 nurses got grants to go to the U.S. Twenty three of them belonged to the NSN and seventeen were RF grantees.

The story of the school has to be placed within the context of the beginnings of a national health system and the kind of service the new professional nurses were expected to provide. One of the greatest handicaps in the field of public health in the late 1930s was felt to be the lack of trained public health nurses. A Normal School for Nurses dependent on the Ministry of Education was founded in a hurry in 1938, while

negotiations were going on with the RF for their full involvement in the program of nursing education. In 1940, after a very critical but also flexible diagnostic analysis by Miss Mary Elizabeth Tennant, Nurse officer of the IHD, the RF decided to support the project of a school destined to train professional nurses from a nationally selected sample of candidates. It would aim at serving as a model in the country for the organization of nursing instruction, raising the standards of the profession in the country, and coordinating the efforts of all agencies interested in providing better nursing services. The RF provided all the imported equipment for the school, to the most minimal detail. It also provided most of the (foreign) nursing teaching staff. Miss Tennant went through periodical revisions of the teaching curriculum, discussed management and other organizational problems with the teaching staff and the Board of Directors, devoted attention to reaching a balance between theoretical and practical teaching, and expressed particular concern for the fact that because of relative power relationships, most of the medical teachers were clinicians while the desirable situation would have been to have the young public health doctors recently returned from their graduate studies in the U.S. on RF fellowships, take charge of teaching at the school.

Although nursing was presented as one of the dynamic growth fields that opened to women in the new modernizing wave after Gomez' death, it did not turn out to be a sustained success story in terms of women's advancement in the labour market. The employment market for women was very little developed and wages in those industrial and service sectors which included relatively large female contingents were systematically low, much lower than the equivalent male wages. The NSN failed as a project to create a socially legitimate space for professional nurses. The failure was reflected in their persistent low status and remuneration. The limitations were linked to the class background of many of the women who entered nursing at that time. At the same time nursing could not gain professional control of its educational foundations while the hospitals' needs continued to govern entry into the employment market. The NSN was forced to supply freshman nurse students to the Vargas and other Caracas Hospitals to serve as cheap dependable labour, while the nursing leadership repeatedly argued that nursing students should not be forced to provide hospital nursing services, unless it was part of their supervised clinical training and that graduate, "professional", nurses should not have to perform the hospital's dirtiest tasks. The necessity to professionalize nursing education was not really understood by the public beyond mere rhetoric, as long as the difference between the trained and the untrained nurse remained blurred. Thus class appears as both the critical underlying theme and the explanatory tool in assessing the impact of the RF nursing training project on women drawn to this type of employment. Educated middle and upper class women in the 1940s who wanted to have a professional career would rather go into the medical faculty or any other university career and not into nursing. In the 1950s, with the RF already out of the program, the NSN was fused with another school, the Municipal School of Nursing, and adopted the rhythm and more common to other local schools, losing its elitist character.

## Discussion

All the cases we have briefly considered took place during the 1940s, at the time when Venezuela inaugurated a remarkable process of modernization. Given the nature of the oil industry and the backward condition of the country, it was impossible for Venezuela to benefit directly either as a producer or as a consumer of the oil derivatives and it could only profit from its oil wealth as a source of rent, investing heavily in the development of the national productive forces. Between the time of dictator Gomez' death at the end of 1935, and the 1948 coup d'Etat which deposed the first elected democratic government of Romulo Gallegos, the fundamental units of modern government were defined as part of a modern State which claimed for itself all the oil rent with the aim of channelling and distributing it in terms of national development. The ministries of health, education and agriculture, which were the local institutional counterparts of the RF, were among the instruments of the new modernizing State. Although the oil rent was not the product of either labour or capital, the lack of trained human resources was perceived to be the main drawback to effective development. Thus intensive massive educational and training programs were set in motion as the promise of future achievements.

During that period, the role of international cooperation became paramount, not so much in terms of provision of funds, which Venezuela did not need, but in terms of helping to create, organize and legitimate a social space for scientific research in the local context and of channelling the growing demand for higher training abroad by the new graduates who often did not know what they wanted or needed. The Rockefeller Foundation was one of the most serious philanthropic agencies in existence at the time. The activities it supported in Venezuela were minor actions in its own institutional terms, especially when compared with the Mexican Agricultural Program, to mention only one of their other Latin American endeavours. But they were significant in the context of scientific institutionalization in this Latin American society. No matter whether the RF was dealing with elite research capability formation in experimental medicine, research in public health, basic and applied agricultural science, or paramedical staff training in the nursing field, the main drawbacks were the insufficiencies in qualified human resources, often responsible for wrong attitudes and behaviours, mutual misunderstandings and short-sighted political decisions.

In order to be effective, scientific cooperation between unequal partners needs a basic common understanding and a minimal degree of equivalence in the exchanges. Wealth is not the only parameter to be taken into account. When local conditions are poor, particularly in terms of basic education of the recipient country, when political instability or military dictatorship inhibit the development of coherent action sequences to reach specific aims of economic policy and, most of all, when income distribution is sharply skewed and the public wealth is profited very inequitably, conventional scientific cooperation tends to become estranged and to be limited in its effects. In the Venezuelan case the blueprints of the RF cooperation programs, which involved the idea of opening social spaces for new occupations with their corresponding income scales and associated status, went against the natural flow of the dominant currents in the recipient society. For several decades Venezuela was submerged in a turmoil of

growth and in a "gold rush" that resulted in a profile of development which, by contrast with developed economies, was unable to use effectively as engines of development its growing numbers of highly qualified manpower resources. This, I posit, was one of the main causes of the limited success of the RF programs in Venezuela. Development has proven to be a long and slow process of change and maturation of public awareness. It is very difficult to leap-frog phases without suffering the consequences of an irreflexive confidence either in the logic of formalised models of theoretical knowledge responsible for the predominance in certain quarters of a rarefied ideology of "academic science" as an autonomous isolated activity, or an equally sterile, ignorant dull utilitarianism. Not necessarily was there a common understanding in what Venezuela sought from RF and what the RF tried to do in the country.



## NOTES

- 1) For different aspects and dimensions of the problem see among others, R. McLeod, 1987; L. Pyenson, 1985; D. Dickson, 1984; Y. Ezrahi, 1990.
- 2) Witness the debates in and around the United Nations mega-conferences of Science and Technology for Development during the 1960s and 1970s and the large number of the more recent international fora which, sometimes under the guise of science and technology, involve political and economic negotiations between Northern and Southern countries.
- 3) For a recent review see N. Pakdaman, 1994, pp. 67-68.
- 4) H.R. Sonntag, 1994, pp. 227-245.
- 5) For a recent review of the institutionalization process of science in the developing countries see Vessuri, H. 1994.
- 6) Cueto, M. 1994, p. X.
- 7) With this purpose in mind, during 1941 H.M. Miller, Weaver's assistant director, visited nine Latin American countries. Vessuri, H, 1994b.
- 8) RFA, R.G. I.2, Series 300, Box 4, Folder 29. RAC
- 9) This swift comment by H.M. Miller, Jr. was made on the occasion of his first visit to Venezuela. South America. First Survey Trip in Connection with Program in the Natural Sciences. March 30, 1942. RFA, R.G. 1.2, Series 300 Latin America, Box 12, Folder 95. RAC.
- 10) W.A.Sawyer to P.J. Crawford, December 22, 1941. RFA, R.G.2, Series 420 Administration, Box 221, Folder 1541. RAC.
- 11) R.S.Fosdick to N.Rockefeller, March 11, 1939. RFA, R.G.2 CG, Series 339 Venezuela, Box 149, Folder 1105. RAC.
- 12) Weaver. Report on Travel to Venezuela, October 16, 1947. RFA, R.G. 1.1, Series 339 D, Box 2, Folder 19. RAC.
- 13) Going through the Diaries of the RF officers, one gets the impression that the foundation acted as an informal clearing house and meeting place for just everybody who was involved in scientific research. One learns about constant courtesy visits, telephone calls, information about labs and people in the different institutions of the Latin American countries or in the United States in reply to requests of ministers, rectors of universities or deans of faculties for study places for their graduates or to buy scientific equipment.
- 14) RAL to RBF on the wave of medical doctors to the US.S. in the 1939-1942 period, March 31, 1942. RFA, R.G. 1.1., Series 300 Visits, Box 1, Folder 2, RAC.
- 15) Vessuri, H. 1994b, 1994c.
- 16) G.K.Strode to J.Mackintosh, October 29, 1946. RFA, R.G.2 GC 1946, Series 339 Venezuela, Box 340, Folder 2305. RAC.
- 17) Venezuela, Malaria Studies, Macaray, Designation 46119. 27 September 1946. RFA, R.G. 1.1., Series 339 | Venezuela, Box 4, Folder 30. RAC.
- 18) M.Bates, Memorandum, July 20, 1945. RFA, R.G. I.I, Series 339 | Venezuela, Box 4, Folder 30. RAC.
- 19) R.B.Watson, February 6, 1946. On the relative merits of Villavicencio, Colombia, and Maracay, Venezuela, for malaria studies by the Rockefeller Foundation. RFA, R.G. 1.1, Series 339 | Venezuela, Box 4, Folder 30. RAC. See also A.T. Gutierrez, 1992, pp. 77-118.
- 20) As enclosed by M.C. Bates to G.K. Strode, August 14, 1946, RFA, R.G. I.1, Series 339 | Venezuela, Box 4, Folder 30. RAC.

- 21) P.F. Russell, Proposed Initial Research Program, Section for Special Studies, Malaria Institute, Maracay. January 30, 1947. RFA, R.G. 1.I, Series 339 I Venezuela, Box 4, Folder 30. RAC.
- 22) RFA, R.G. 2.1, Diaries, Series Rolla B. Hill 1949, April 24-30. Box 27. RAC.
- 23) R.B.Hill to G.K.Strode, February 9, 1951, RFA, R.G. 1.1, Series 339 I Venezuela, Box 4, Folder 31. RAC.
- 24) His former collaborator, Felix Pifano, who had also been working on Chagas and other tropical diseases, was actively engaged in the construction of an Institute of Tropical Medicine at the Universidad Central de Venezuela. A.T. Gutierrez, 1995b.
- 25) M.Bates, *op. cit.*, Julv 20, 19-15. RFA. RAC.
- 26) Vessuri, H. 1995.
- 27) Excerpt of documentation. RA MS 4224. RFA, R.G. 1.1, Series 339A, Box 1, Folder 6, RAC.
- 28) The fellowship program was supplemented by grant-in-aid for apparatus and supplies to insure the fellow's having something to work with when they got back home. RFA. R.G. 1.2, Series 300, Box 4, Folder 29. Medical Science Program for Latin America, 1/17/44. RAC.
- 29) RAL's Diary, Friday, January 31, 1941. RFA, R.G. I.I, Series 339A, Box 1, Folder 5. RAC.
- 30) RFA, R.G. F/S, Series, Recorder Grants M/NS Venezuela, Granier, 3/4/43. RAC.
- 31) RFA, R.G. 10, Series Recorder Grants Med/Nat. Sc Venezuela. De Venanzi, 4/5/45. RAC.
- 32) T.Glick, Pi i Sunyer, August (n.Barcelona, 12 agost 1879; m. Ciutat de Mèxic 12 gener 1965). In *Científics i tècnics catalans* (in press) (mimeo). During the difficult years of Perez Jimenez' dictatorship, De Venanzi and a handful of biomedical scientists found refuge in a very small private institution supported by the patronage of Marcel Roche's father. M.Roche, 1987, pp. 209-248.
- 33) RFA, R.G. 12.1, Series Diaries, RAL, 1948, Box 35, Venezuela. RAC.
- 34) Vessuri, H. (1995b).



## REFERENCES

- Dickson, D. (1984), *The new politics of science*, New York: Pantheon Books.
- Ezrahi, Y. (1990), *The descent of Icarus: Science and the Transformation of Contemporary Democracy*, Cambridge, Mass.: Harvard University Press.
- Gutierrez, A.T. (1992), "La busqueda de una ilusion. La investigacion sobre malaria". Freites, Y. y Texera Arnal, Y. (eds.) *Tiempos de cambio. La ciencia en Venezuela 1936-1948*, Caracas: Fondo Editorial Acta Cientifica Venezolana.
- Gutierrez, A.T. (1995), *Estado y tropico: El Instituto Nacional de Higiene* (mimeo).
- McLeod, R. (1987), "On visiting the 'moving metropolis': reflections on the architecture of imperial science". N.Reingold & M. Rothenberg (eds.) *Scientific Colonialism. A Cross-Cultural Comparison*, Washington, D.C.: Smithsonian Institution Press.
- Pakdaman, N. (1994), "Mort et r surrection de l' conomie du d veloppement". J.J. Salomon, F. Sagasti & C.Sachs-Jeantet (eds.) *La qu te incertaine. Science, technologie d veloppement* Paris: United Nations University/Economica.
- Pyenson, L. (1985), *Cultural Imperialism and Exact Sciences. German Expansion Overseas 1900-1930* New York, Berne, Frankfurt: Peter Lang.
- Roche, M. (1987), "El discreto encanto de la marginalidad. Historia de la Fundacion Luis Roche". H.Vessuri (ed.) *Las instituciones cientificas en la historia de la ciencia en Venezuela*. Caracas: Fondo Editorial Acta Cientifica Venezolana.
- Sonntag, H.R. (1994), "The fortunes of Development". *International Social Science Journal*, vol. XLVI, N. 2, pp. 227-245.
- Vessuri, H. (1994), "L'institutionnalisation de la science". J.J. Salomon, F. Sagasti & C. Sachs-Jeantet (eds.) *La qu te incertaine. Science, technologie, d veloppement*, Paris: United Nations University/Economica.
- Vessuri, H. (1994b), "Foreign scientists, the Rockefeller Foundation and the origins of agricultural science in Venezuela", *Minerva*, vol. XXXII, N. 3.
- Vessuri, H. (1994c), "La cooperacion cientifica internacional, la politica y la negociacion de la evaluacion 'experta'". Vessuri, H. (ed.) *Ciencia, Tecnologia y Sociedad en America Latina*, Caracas: ALAS/Nueva Sociedad.
- Vessuri, H. (1995), "El Instituto de Medicina Experimental". Vessuri, H., Texera, Y. & Gutierrez, A.T. *Investigacion y Medicina. Los institutos de la Facultad de Medicina de la Universidad Central de Medicina* Research report submitted to the Research Coordination's Office, Faculty of Medicine, Caracas, mimeo.
- Vessuri, H. (1995b), *International cooperation and public health nursing. The Venezuelan National School of Nurses project, 1936-1950* (mimeo).



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