

SPOTLIGHT ON: POST-WW2 TRANSATLANTIC SCIENCE
POLICIES

The Rockefeller Foundation and the Post-WW2
Transnational Ecology of Science Policy: from
Solitary Splendor in the Inter-war Era to a
'Me Too' Agenda in the 1950s

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*1. Introduction: The Rockefeller Foundation's science policy
in the inter-war era*

Since the end of the Cold War in 1989 transnational science policy¹ has ceased to be largely about the transatlantic world, as transpacific world connections become ever more important (Wang, 2009, 2010). With this in mind, I have written this paper in order to reflect upon the experience of the Rockefeller Foundation, a key player in transnational science policy making during the inter-war era,² which failed to adapt to the new ecology of transnational science policy that developed after the Second World War, eventually opting out of it altogether. The hope is that by considering this story, fresh light may be thrown on some of the issues confronting today's science policy makers in the face of globalization.

The Rockefeller Foundation³ enjoyed a position of solitary splendor in the inter-war era as a major transnational operator, which sponsored scientific research in over 20 European countries, in addition to supporting selected institutions in the USA and China (Schneider, 2002). At that time the Foundation filled a vacuum created by an isolationist US foreign policy and the financial bankruptcy of many European governments due to inflation and the reverberations of the post-WW1 settlement (Maier, 1975, 1987; Manela, 2007).

The Foundation's impact stemmed not only from its careful selection of promising individuals and institutions, but also from its decision to invest in targeted research areas,

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for example in technology transfer from the physico-chemical sciences to biology. That decision has been widely viewed as stimulating the rise of the new field of molecular biology, although it has also been noted that the Foundation's definition of scientific progress made its grantees captive of instrumentation, while lowering their ability to engage in theoretical problems. (Abir-Am, 1982, 1995, 2002, 2010b).

It was also notable for the time that the Rockefeller Foundation sought to observe a meritocratic definition of grantee eligibility; i.e. politics, religion, race and gender, were not supposed to play a role in grantee selection and funding decisions. In practice, however, ad-hominem comments reflecting cultural bias were not uncommon. The Foundation tried to preclude direct solicitation and placed its officers in sole charge of selecting grantees, usually on the basis of advice from established scientists.

The Rockefeller Foundation's officers were themselves former scientists coming from disciplines ranging from biology, medicine and physics to the social and human sciences (Buxton, 2003; Schneider, 2003; Stapleton, 2003). At the time of the reorganization the physicist Max Mason was the Rockefeller Foundation's President. He served until 1936, and during his time in office he recruited his colleague and co-author at the University of Wisconsin, Warren Weaver, as Director of the Natural Sciences Division in 1932. Alan Gregg, a physician who served as Director of the Medical Sciences Division since the late 1920s, also played a key role in the sponsorship of scientific research in the biomedical arena.

With respect to funding mechanisms the Rockefeller Foundation had several options including research grants, travel grants and fellowships. Weaver's background in engineering meant that there was a particular emphasis on equipment, and the general impression is that this practical grounding meant it was hard for him to come to terms with the theoretical upheaval in physics of the 1920s. It was not the Rockefeller Foundation's policy to invest in infrastructure such as buildings, maintenance etc. These costs were to be covered by its grantees' institutions, although there were some exceptions in Europe where the Foundation engaged in occasional collaborative financing, with local foundations, such as the Carlsberg Foundation in Denmark; Wenner Gren in Sweden and the Rothschild Foundation in France, and in these instances 'infrastructure' expenses could be covered.

Overall there was some latitude in the Rockefeller's funding policy, with a wide variety of exceptions existing alongside the programs approved through the official bureaucratic channels overseen by Division Directors, the Board of Trustees and the President. Flexibility also stemmed from the Foundation's decision to provide favorite grantees with long term grants (3–5 years at a time) as well as large scale ones.

Along with the above elements of flexibility, which account for a great part of the Rockefeller Foundation's impact during the inter-war era, the Foundation's policy was constrained by its insistence on '*institutional guarantees*,' or requests that the grantee's highest institutional authorities administer the grants. Though this aspect stemmed from an overreaction to the Foundation's unfortunate experience with a couple of leading

universities (Cambridge in the UK and Harvard in the USA) which chose to return its cheques rather than accept its interference in specific instances, in practice this meant no support for radical scientists or independent scholars without patrons. This aspect of the Rockefeller Foundation's policy favored power brokers, thus increasing the hierarchies in science, and reducing the policy's innovative edge (Abir-Am, 1988, 1995).

Yet another element which reduced the policy's innovative edge was the officers' *risk-aversion*, due to officer-trustee tension and the impact of the Great Depression. This meant that only a few long term and large scale investments, the kind of investments that could have a major structural impact, were made. The bulk of the funding especially in Weaver's Division therefore went to 'chicken feed' or small scale and short term grants whose influence could not have been too decisive.

A related crucial dimension that also reduced the Rockefeller Foundation's innovative edge was *controversy aversion* due to the positivism of its scientific bureaucracy and hence its excessive valuation of consensus. This aspect stimulated a tendency to over-collect 'scientific intelligence,' a practice that further exposed innovative but non-established scientists to negative evaluations (*ibid*).

Despite its sometimes unadventurous attitude to investment, by the outbreak of WW2 the Rockefeller Foundation's grantees included many promising scientists. Since the Foundation had managed to hold on to its assets during the Great Depression, from 1933 onwards the organization had access to virtually unlimited resources to support it in tasks such as monitoring grantees via site visits. In addition, intelligence collection from colleagues, and correspondence, created an excellent resource for grasping the state of science in any given region (Abir-Am, 2001). In the quarter of a century between 1933 and 1958 the Foundation's investments in science are estimated to have reached US \$90 million.

Considering the Foundation's financial strength and long term operational experience it is, therefore, quite surprising to find the Rockefeller Foundation as being unable to adapt to the post-WW2 'brave new world.' That world had soon become crowded with a variety of individuals and organizations who could draw new power and legitimacy from their role in bringing victory in WW2 and who were ready to invest boldly in science. Indeed, Weaver himself, who also played a key role during WW2 as member of the Office for Scientific Research and Development (Rees, 1987), seemed petrified by the prolonged unsettling and political ramifications of the 'atomic dust' or the use of the atomic bomb and its impact on the US government's massive entry into the sponsorship of scientific research. Instead of adapting its tried and tested policies to the new ecology of science policy, the Rockefeller Foundation, still with Weaver in charge of the Natural Sciences Division, took the view that it must first wait for US governmental science policy to emerge. However, that policy was slow to see the light of day due to various compromises among diverse factions with vested interests, which necessitated a Presidential veto; as well as due to lack of experience in large scale sponsoring of non-military research. So, during the most critical period after WW2 the Rockefeller

Foundation was indecisive about its course of action, remaining captive of its past glory while believing that its policy could not be improved upon.

In addition, as the Cold War developed after 1947, the Rockefeller Foundation's inter-war premise of internationalism became discredited. The emerging confrontation between the super-powers, which reached a peak with the loss of US nuclear monopoly following the Soviet detonation of its own atomic bomb in 1949, (Holloway, 1996; Gordin, 2010) demanded strict alignment from transnational organizations such as the Rockefeller Foundation.

Until 1955, when the non-Allied Bloc, also known as the Third World, was established in Bandung, Indonesia under the leadership of India, Egypt and Yugoslavia, global politics were primarily shaped by the divergence of the former Allies which won WW2, (the USA, USSR, UK, and France) into a global confrontation between the USA and the USSR. The Cold War became a global confrontation not only geopolitically (as in the Korean war, 1950–1953) but also ideologically, with Western democracy being juxtaposed to Communist totalitarianism as a superior value system, indeed an opposite 'mode of life.'

In order to clarify the Rockefeller Foundation's transition from a pioneering innovator in transnational science policy to a 'me too,' and eventually an absentee player, I focus here on the interaction between the Director of the Foundation's Division of Natural Sciences, Warren Weaver, an architect of its pre-WW2 policy guidelines, and a growing number of science policy players, most of them generated by the WW2 experience. If before WW2, a Division Director such as Weaver (for other division directors see Buxton, 2003; Schneider, 2003; Stapleton, 2003) and his fellow officers served as a bridge between the Rockefeller Foundation's Board of Trustees and grantees by selecting the latter and obtaining the approval of the former; then after WW2, Weaver operated in the new context of waiting for the 'atomic dust' to settle down. This meant that the Foundation had to find a new arena of activity since the success of the atomic bomb, and the promise for many more new types of nuclear weapons that held the key to the strategic balance, implied a massive entry of the US government into the science and technology funding arena, which would dwarf the Rockefeller Foundation's ongoing funding efforts.

By 1942, in the midst of war, the Rockefeller Foundation had already begun to realize that it would have to change its mode of operations as sponsored scientists were mobilized and grantees' labs occupied by enemy forces. The Foundation, therefore, decided to refocus its work on improving agricultural production in Latin America until the war ended. This shift became the official focus of the Rockefeller Foundation in 1953, when Weaver himself left the position of Division Director to become a Vice President—a post he held until 1958 when he left the Rockefeller Foundation for the Sloan Foundation (Weaver, 1958; Rees, 1987).

In reality, however, it was several years before the Rockefeller Foundation would have faced any real competition from US government led science funding initiatives.

The National Science Foundation (NSF) was established by Congressional legislation in 1950, however, it was slow to (Kevles, 1977; Appel, 2000) emerge from its parent organization, the Office of Naval Research (ONR) (Van Keuren, 2001). It only became a significant player in science funding following the shock of the Sputnik (November 1957) and the establishment of the Presidential Science Advisory Council (hereafter PSAC; Wang, 2008).

So, in the decade after the end of WW2, the Rockefeller Foundation could be described as having got caught in its own web of inertia, captive of its elaborate rules and regulations, and unable to recognize the potential offered by the post-WW2 ecology of science policy. Instead of expanding pre-WW2 policy and taking advantage of its global network of grantees (Abir-Am, 2001) and extensive scientific intelligence in elite labs in over 20 European countries, the Rockefeller Foundation could only stand by and watch. New players moved at a much faster and less cumbersome pace, on a larger and longer term scale, with scientist grantees enjoying numerous choices of sponsored research.

Moreover, in the intense context of the post-1947 Cold War, science funding became intertwined with cultural diplomacy, intelligence gathering, and ideological warfare (Doel, 1997; Doel and Needell, 1997; Berghahn, 2001; Gemelli and MacLeod, 2003; Strasser and Joye, 2005; Krige, 2006; Krige and Barth, 2006), thus greatly stretching the narrower, technocratic and scientific basis of the Rockefeller Foundation's pre-WW2 'Program and Policy.'

2. The Rockefeller Foundation's Uneasy Position in the Post-WW2 'Brave New World' of Transatlantic Science Policy

It was not just the waiting for a government science policy to emerge after WW2 that immobilized the Rockefeller Foundation, but also the sheer number and diversity of new players, both governmental and non-governmental. On the one hand, there was a large number of governmental agencies including the aforementioned National Institutes of Health (NIH) which increased its budgets dramatically after WW2; and the Atomic Energy Commission (AEC) which exercised a monopoly on radioactive isotopes needed for research (Creager, 2004; Krige, 2005). These agencies provided research grants to individual European scientists. Meanwhile NATO, the transatlantic military alliance between the USA and its European allies, established Institutes for Advanced Studies and also provided research grants, often in fields relevant to military research (Krige, 2006, chs. 7 and 8).

On top of these quick paced developments there were also longer standing rivalries between various parts of the armed forces, such as the Air Force and the Navy, to be considered, as illustrated in an anecdote shared between Weaver and grantee Phillip Frank, who represented the Unity of Science Project at the American Academy of Arts and Science in Boston:

...The Air College in the South... they were very much concerned to train the top future air officers... to have more tolerance; F asked if they meant tolerance toward the Negroes. The officer laughed and replied that he meant tolerance toward the Navy. (Weaver, 1949)

The post-WW2 era also saw the strengthening of the network of National Laboratories, such as Los Alamos, Lawrence Berkeley and Oak Ridge, whose directors often had more power and resources than the Rockefeller Foundation's Division Directors (Westwick, 2003). In addition non-governmental organizations, (NGOs) proliferated. These were often professional associations of scientists, or science activist organizations which found new missions after WW2, e.g. educating the public on atomic energy (Weaver, 1947d, 1948). Some of these NGOs were new, (e.g. the American Federation of Atomic Scientists) while others pre-existed WW2 but found a new context for activism in the early Cold War era. These included the American Association for the Advancement of Science (AAAS), the American Association of Scientific Workers, the Soviet-American Scientific Society, the National Academy of Science, (NAS) the National Research Council (NRC), and the American Academy of Arts & Sciences, and some of these, as alluded to above, acted as sponsoring organizations for Rockefeller Foundation grantees such as the physicist and philosopher of science Phillip Frank.

The world of private foundations had also greatly diversified in the post-WW2 era, as it came to include both pre-WW2 foundations, such as the Carnegie, Vanderbilt, Guggenheim and the Research Corporation, as well as new ones, especially The Ford Foundation, the Fulbright Foundation, The National Foundation for Infantile Paralysis, (NFIP) and the Nuffield Foundation in the UK. While the Ford and Fulbright Foundations carved themselves new niches which only competed with the Rockefeller Foundation indirectly, mostly in the fellowship and conference arena, the NFIP and Nuffield Foundation ended up 'taking' many former Rockefeller grantees, some of whom preferred a foundation based in their own country. (e.g. left wing British scientists such as JD Bernal and DC Hodgkin who switched to the UK-based Nuffield Foundation) Other grantees received more flexibility from the National Foundation for Infantile Paralysis which had fewer bureaucratic rules than the Rockefeller Foundation. Indeed, the Rockefeller Foundation's decline is reflected in the organization's position being one of matching funding from more entrepreneurial foundations, such as the Ford Foundation (Saunier, 2001; Weindling, 2001; Schmidt, 2003; Tournes, 2003; Gemelli and McLeod, 2003).

Yet another new development with which the Rockefeller Foundation had to contend following the end of WW2 was the ascendance of scientific advisers, a position that had not existed prior to the war, but which became very powerful during the Cold War. This group of individuals included scientific experts, often in research areas pertinent to military needs such as aerodynamics or operations research, and many of them had acquired key experience during WW2 as scientific advisers to commanders of major theatres of operation, such as General Douglas MacArthur in the Pacific and Admiral Louis Mountbatten (the 1st Earl of Burma since 1947) in Southeast Asia. Yet other

scientists served as advisers to the Air Force Commander, General Henry H. Arnold, the Navy commander Chester W. Nimitz or the director of the Manhattan Project, General Leslie R. Groves. Indeed, the entire country was riveted by a national scandal in the mid-1950s, when Groves' former scientific counterpart and the best known scientific adviser, J. Robert Oppenheimer, had his security clearance revoked. (Cassidy, 2005; Carson and Hollinger, eds. 2005) Chairmen of Departments in key contractor institutions, (often technological institutes such as Caltech) and Presidents of scientific organizations, e.g. the American Physical Society, also figured among the new policy makers who found their way to Weaver's office in New York City, to seek advice or just display their new standing as players in science policy. (Kleinman, 1995; Zachary, 1999)

Weaver's frequent interactions with this new breed of science policy players, confident in their contributions to the war effort and forward looking to a new era for science and scientists as key players in global politics, contrasted sharply with the more general stagnation in the Rockefeller Foundation's leadership. Though long time Rockefeller Foundation's President Raymond B. Fosdick (1936–1948) retired in 1948, his successor, Chester I. Barnard held office for 4 years only, a period coinciding with Truman's second term in office, which included the Korean war, and a peak at the early Cold War. Barnard was an AT&T (American Telephone and Telegraph) executive and former President of the New Jersey Bell Telephone Company who spent WW2 running the United Service Organization, an outfit providing entertainment to the Armed Forces. Ironically, he is now remembered for his contributions to organizational behavior and management. Unlike Fosdick's predecessor, Max Mason, a University of Wisconsin-Madison physicist and mentor of Weaver who served as President during and after the Rockefeller Foundation's reorganization (1928–1936), neither Barnard nor his successor, Dean Rusk who served for almost a decade, (1952–1961) prior to becoming Secretary of State during the Kennedy and Johnson Administrations in the 1960s, were scientists. Both served during a period when many policy makers were scientists, especially scientists with significant experience in WW2.

Pre-WW2 Division Directors such as Weaver, Alan Gregg of the Medical Sciences (Schneider, 2003) and Joseph Willits of the Social Sciences (Stapleton, 2003) continued in their posts until the early 1950s. Indeed, each Division continued with its pre-WW2 policies. Weaver may have puzzled over the frequent visits from John D. Rockefeller III, Chairman of the Board of Trustees, who was apparently more attuned to the changing world, but he still asserted that the Rockefeller Foundation's two decade old policy (which he helped frame in the early 1930s) required no further change. As Weaver stated in the Rockefeller Foundation Trustee Bulletin of 1950 not without a tinge of nostalgia: 'Thus, today's biologists state the matter in terms almost identical with those which were used in first presenting the Natural Sciences Program to the Trustees 18 years ago.' Weaver's lack of interest in a new policy, better adapted to the drastic change in the science policy ecology after WW2, may have also stemmed from his post-WW2

activities in the public understanding of science, activities that consumed a great deal of his time and energy (Rees, 1987).

Though the Rockefeller Foundation had no difficulty with funding its pre-WW2 grantees, many grantees began to grasp that the Foundation was slow to respond to new initiatives, as if forever waiting for a long undefined federal policy to emerge. Hence, the grantees began requesting 'matching funds' from the Rockefeller Foundation after they had already received funding from a federal agency, or another foundation. For example, a classical geneticist at Amherst College, H. H. Plough, who had become interested in biochemical genetics after WW2, was able to secure a large grant from the Atomic Energy Commission (AEC), while the Rockefeller Foundation, despite its long interest in research projects on radiation biology provided this scientist with only one-ninth of his research budget (Weaver, 1951a).

Other Foundation grantees also relabeled their microbiological programs as 'radiobiology' so as to qualify for both grants from the Atomic Energy Commission and Rockefeller grants. T. Hogness, Chairman of the Biology Department at the University of Chicago and a veteran Rockefeller Foundation grantee, made it clear that the institute of radiobiology was in fact a program in microbiology. (Weaver, 1951b).

Geneticists L. Dunn and T. Dobzhansky of Columbia University in New York City, who had been pre-WW2 Rockefeller grantees, also requested a 'matching grant' claiming that their research on mice and fruit flies, respectively, might have applications to Human Genetics. That area was funded at the time by a large allocation to Columbia University in Human Biology from the Ford Foundation. The Rockefeller Foundation was thus viewed by its own grantees as sticking to its previous strategy of emphasizing experimental biology while also preferring to share the risk. (Weaver, 1951c).

Influenced by the Ford Foundation which was giving large and long term grants the Rockefeller Foundation did, however, give a 5 year bloc grant to the Department of Biochemistry at Columbia University, a site which received many smaller Rockefeller grants prior to the war. But the grant remained modest because 'men of the caliber of Chargaff, Rittenberg, Shemin, & others *are able to get grants from government sources...*' (Weaver, 1952, my emphasis).

The Rockefeller Foundation continued to face the problem that its favorite grantees had many other, often governmental, alternative funding options. Erwin Brand of Columbia University, for example, discussed with Weaver his plan for an institute of protein chemistry that was to be distinct from the more medically oriented biochemistry department run by H. T. Clarke and discussed above. Though Brand knew that protein chemistry was a Rockefeller priority (Abir-Am, 2001), he told Weaver that he was contemplating long term funding from the Office of Naval Research (ONR; Van Keuren, 2001), and that incoming Columbia University President, General Dwight Eisenhower, former Commander of the Allied Forces in Europe, planned to give priority to his request (Weaver, 1947c). Brand's outlook reflects clearly the new opportunities that opened for science funding as a result of the rise of WW2 personalities

and agencies to key roles in science policy. Those new opportunities eclipsed the Rockefeller Foundation, once the main funding source for protein studies (Abir-Am, 2001).

Weaver also looked favorably upon large academic institutions in the mid-West where he himself was based prior to his arrival at the Rockefeller Foundation from the University of Wisconsin-Madison in 1932. A visitor who asked the Rockefeller Foundation for a consolidated grant or rather a 'basic science institute' to include biochemistry, pharmacology, and physiology, but knew to emphasize the nature of his request as 'matching funds' was Dean Phillip A. Shaffer of Washington University in St. Louis. Like Plough, Dunn and Dobzhansky beforehand, Shaffer stated that he had already obtained funding from another foundation—in this case \$700 K from the Mallinkrodt Foundation. Weaver admitted that Washington University in St Louis and the University of Wisconsin were good bets 'for any major move,' but he also stated that he '*was not clear whether RF is in a position to make major moves soon. Lots of things need to be done in this new world*'. (ibid.; my emphasis).

Weaver's strategic positioning between foreign governments, non-governmental organizations and the Rockefeller Foundation's veteran grantees, was evident from his interaction with Tobjorn Caspersson of Stockholm, Ross Harrison of Yale and the Mexican Minister of Agriculture, who all visited the Foundation on 1 November 1945.. In response to a visit from Caspersson, Head of the Division of Cell Chemistry at the Karolinska biomedical institute in Stockholm, the Foundation agreed to make a grant for 5–7 years '*to stabilize governmental support*' (my emphasis). Caspersson said that such support was meager since the Swedish government believed that only rich countries should engage in research. Caspersson was a pre-WW2 Rockefeller grantee and Weaver agreed to use a special mechanism for this allocation. (i.e. officers' conference). This encounter suggests that Weaver persisted in the Foundation's traditional approach of investing in science precisely in those areas where governments, whether Swedish or American, could not or would not.

This immediate post-WW2 situation of vacillating between continuity with the past, immobility until the US Federal government defined its science policy and a default tendency to do 'matching grants' which fitted the Rockefeller Foundation's pre-WW2 strategy of minimizing the risk, continued at least until mid- late 1947, i.e. after the Cold War set in. For example, the Rockefeller Foundation's 'field officer' in Europe, Gerald Pomerat, phoned Weaver to explain that he 'cannot make it to Budapest and Vienna out of fear of a possible Soviet coup' (Weaver, 1947a). This, however, proved to be a false alarm since shortly after Weaver told the Rector of Prague University that the Foundation may pay the travel expenses for participants attending a conference on topology (the Rector was a mathematician) if 'they get Russian topologists' since 'Prague is good for meetings between East and West' (Weaver, 1947b).

3. Conclusions

For reasons of space a comprehensive analysis of all of the Rockefeller Foundation's activities during the post-WW2 era is beyond the scope of this Spotlight. However, the various examples discussed above support the conclusion that the Foundation failed to capitalize upon its unmatched knowledge and experience with both American and European science infrastructure and leadership in the pre- and post-WW2 eras. Even though there were plenty of non-governmental niches in fields outside atomic physics, the Rockefeller Foundation failed to reinvent itself and devise a new post-WW2 strategy, in the same way it had been reorganized in the early 1930s, following another world changing catastrophe, the Great Depression. Among the reasons that can be adduced for this lack of adaptation to the brave new world in the post-WW2 era are the following:

- Institutional inertia of the sort described above in a quotation from Weaver in his report to the Trustees in 1950, in which he claimed that the existing Foundation policy could not be improved upon. With the sharp rise in the numbers and kinds of science policy players after WW2, many of which were accustomed to WW2 proven, large scale and risky projects, the Rockefeller Foundation's cautious approach became outdated, making it into a 'me too' player. It lacked the agility needed in the post-WW2 era to operate in a highly competitive transnational science policy arena.
- The Rockefeller Foundation also failed to develop an alliance strategy with other science policy players. Instead, it essentially became a source of 'matching funds' for scientists and foundations who had better adapted to the post-WW2 science policy ecology. The Foundation's tendency to favor continuity, despite the watershed symbolized by the settlement of WW2 for both science and society, meant that it continued to support mainly pre-WW2 grantees.
- Above all, the Rockefeller Foundation became immobilized by the sudden rise in the US government's investments in science, as a consequence of the dramatic impact of the atomic bomb, and the Foundation came to believe that it could find a non-governmental niche only after federal policy became clear. Since this did not happen for some time while, to some extent not until the Sputnik precipitated some degree of coordination in the form of PSAC (the Presidential Science Advisory Council, (Wang, 2008), the Rockefeller Foundation missed the most crucial time in the post-WW2 era to reformulate a coherent science policy. As Weaver, Division Director at the Rockefeller Foundation for a quarter of a century put it: '*Large foundations, in fact, are sometimes too timid. . . It . . . takes very little to frighten a large foundation.*' (Weaver, 1962, 3; my emphasis)

The Rockefeller Foundation's failure to adapt to the post-WW2 ecology of science funding also meant that the Foundation failed to notice altogether that the molecular biological frontier it helped create in the 1930s had meanwhile shifted from proteins

to DNA. Though the Foundation commissioned and received detailed advice from leading DNA scientists such as E. Chargaff of Columbia, and A. R. Todd of Cambridge University, among others, in the period between 1950 and 1952; the Foundation neither processed that advice, nor did it play a significant role in the biological revolution around DNA. The Rockefeller Foundation's field officer in Europe, Gerald Pomerat, happened to visit the Cavendish Laboratory a day before the DNA structure paper was sent for publication, yet he could not understand how that structure had been discovered in a laboratory that the Foundation sponsored to do protein research (Abir-Am, 2002).

These conclusions have a bearing not only on the historiography of the Rockefeller Foundation and the new research area it claimed to have started up, such as molecular biology (Abir-Am, 1995, 2002). They are also relevant to recent studies of the Foundation and other science policy players in the post-WW2 era, as elements of US foreign policy (Doel and Wang, 2000; Gemelli and MacLeod, 2003; Krige and Barth, 2006). Given the lack of initiative that the Rockefeller Foundation demonstrated between the mid-1940s and mid-1950s, and given its captivity to a policy of distancing itself from US government's policy since the 1930s, it is difficult to see how its science program played a key role in US foreign policy after WW2, as is argued in the book (Krige, 2006) which stimulated this Spotlight. Krige's inclusion of private foundations, most notably the Ford and Rockefeller, along with governmental, supra-governmental and non-governmental organizations that shaped post-WW2 transatlantic science policy, has enriched our understanding of the ever shifting balance between national and transnational science policies in an era of globalization.

However, a more systematic examination of the Rockefeller Foundation's structural response to the post-WW2 new ecology of science funding, suggests that at the time the Foundation did not have an agenda other than getting out of both Europe and science altogether. Unnecessarily intimidated by US government plans for large scale interventions in science, captive of its own pre-WW2 inertia and forever obsessed with finding non-governmental niches; (as opposed to playing a complementary role to governmental agencies as in the Green Revolution) the Rockefeller Foundation was slow to grasp that the US government's new national and transnational science policy was to be both framed and implemented in slow motion. Hence, it also failed to grasp that it could have played a big role had it adapted to the post-WW2 ecology of multiple players instead of remaining always on the verge of phasing out its program, eventually doing so in the late 1950s and early 1960s, or just at the time transatlantic science policy began to have an impact.

If the Rockefeller Foundation can be said to have somehow helped the reconstruction of science in Europe after WW2, (Krige, 2006; Strasser, 2006; Tournes, 2006) then this unintended consequence was not a product of an agenda to reshape European science but a derivation of the Foundation's slow process of implementing its new priorities in Third World agriculture. The Foundation's pre- and post-WW2 policy of seeking non-governmental niches in European provinces neglected by their own centralist

governments (e.g. the Foundation continued to support molecular biology in the north of the UK after WW2, at a time the UK governmental Medical Research Council refused to do so) could be argued as reason to place the Rockefeller Foundation as a source of much needed help in provincial science.

In 1953, however, the Rockefeller Foundation announced its intention to phase out its science program, both in and outside of Europe, although in reality this phasing out process continued for much of the 1950s. However, by that time, the Foundation had lost its standing as a stimulant for innovation in scientific research, not being able to formulate a science policy that fitted the post-WW2 brave new world of big government and numerous policy players, many riding on the coattails of science advisory careers during WW2. As a self-styled 'philanthropoid' recalled with both ambivalence and nostalgia, sometimes the best policy is to have no policy:

'In the early days of the Rockefeller Foundation there was an imaginative and vigorous Trustee who used to say, "Our policy should be to have no policy". . . there are times. . .when no policy is in fact the best policy. . . a large foundation is far more in the public eye [than a small foundation]'. (Weaver, 1962, 1)

NOTES

1. See for example Crawford, Shinn and Sorlin, eds. 1993; Abir-Am 1993, 2001; Cueto, ed. 1994; Doel and Needell 1997; Gemelli, ed. 1998; Picard 1999; Gemelli, ed. 2000; Gemelli, ed. 2001; Gemelli and MacLeod, eds. 2003; Schneider, ed. 2002; Krige 2006; Strasser 2009; Tournes 2010.
2. There is a very large literature on the Rockefeller Foundation in the inter-war era; see for example Abir-Am 2010b, Tournes 2010. The Rockefeller Archive Center, (hereafter RAC) Sleepy Hollow, NY, updates annually the list of publications using its resources, on its website.
3. The Rockefeller Foundation's inter-war 'program and policy' was ratified in April 1933, following a 4 year reorganization which shifted the Foundation's focus from a few large scale investments, which had been the norm during and in the immediate aftermath of the Great Depression, to many smaller ones. These were closely monitored by field officers operating from a European office located in Paris as well as Foundation program directors based in its headquarters in New York City.

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