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Interpreting Science for a General Public: the Rockefeller Foundation and the Politics of Science Popularization in the 1930s*

Jaume Sastre-Juan (jaume_sastre@hotmail.com)

Introduction

In 1938 and 1939, the Rockefeller Foundation organized two confidential conferences “On the Interpretation of the Natural Sciences for a General Public”, commissioned an exhaustive survey of contemporary science popularization in the United States and actively participated in international efforts in this direction under the auspices of the Paris-based International Institute of Intellectual Cooperation of the League of Nations. The two confidential conferences gathered a significant part of the scientific, social scientific and mass media elites of the United States, and were conceived as an informal think tank in which the participants were asked to privately and frankly discuss over the political goals, strategies and techniques of science popularization.

The transcripts of the Rye conferences offer a privileged vantage point on the debates that the scientific community was having at a time in which the rise of mass communications was changing the forms and functions of science popularization¹, and compel historians to re-examine the politics of science popularization in the United States in the 1930s. Scientists,

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business and the state feature in most of the standard accounts of the history of science popularization in the 1930s, but there is an actor that is usually missing: philanthropic institutions.

The role played by the Rockefeller Foundation in using science as a geopolitical tool in Latin America and in defining research agendas and shaping scientific disciplines in the United States is well known², but we didn't know yet about its interest in shaping science popularization as a means of social control. This interest of the Rockefeller Foundation in science popularization should be understood at the intersection of two of its main interests in the late 1930s: science and mass communications. The two main characters behind it were John Marshall, the Associate Director of its Humanities Division, and Warren Weaver, the Director of its Natural Sciences Division. They conceived the conference as a chance to explore a topic that had been informally discussed among Foundation's officers and which fitted very well within the Foundation's new program in the 1930s.

The deep social and political unrest caused by the Depression made the Rockefeller Foundation reorient its policy towards "present and pressing human needs" and what Lily Kay has called "a science of social control"³. In the natural sciences this meant a shift from physical to biological sciences, especially molecular biology, in the rise as a discipline of which Warren Weaver played an instrumental role. In Humanities, the new program of the 1930s meant a shift from the "cloistered kind of research" of scholarly archaeology and philology to studies of "the ways in which the American public now gains its culture"⁴. John Marshall was instrumental in fostering and shaping the emerging field of mass communications research and in helping redefine propaganda as an acceptable and "democratic" psychological warfare tool for engineering mass consent during –and after- World War II⁵.

Science and Democracy: the First Conference "On the Interpretation of the Natural Sciences for a General Public"

In June 15th 1938, Warren Weaver spoke at the Westchester County Club in Rye, New York, in front of a distinguished audience of first-rank scientists that had shown some interest in popularization and fellow officers from several divisions of the Rockefeller Foundation⁶. Weaver opened his informal introductory remarks quoting a toast by Stalin and thus explicitly striking the political key from the very beginning:

"I don't think that any of you gentlemen will be shocked if, for the first setting of the topic that we have before us, I quote a toast which was recently given by Stalin. It seems a rather curious place to go to, to get a key sentence for such an inquiry as this, and from some points of view

one might say that our topic would be the exploration of what we would like to mean by this toast as compared possibly with what Stalin meant by it. It was on May 19th at a meeting in Moscow when Stalin gave this toast: ‘To science, to its flourishing, to the health of the men of science. To the flourishing of science, that science which does not segregate itself from the people, but is ready to serve the people and transmit to the people all the conquests of science; science which serves the people, not under compulsion but voluntarily, willingly’⁷.

It surely didn’t surprise the participants. After the crash of 1929 more and more voices were questioning the validity of the 1920s science-based corporate capitalism’s ideology that linked “pure science”, corporate monopolies and the free enterprise system⁸. Science and technology were both blamed and invoked as either Depression’s cause or remedy, and science popularization came to be seen as an increasingly important cultural tool by many actors with different political agendas⁹.

One of these actors were big science-based corporations, that reacted to the threat posed by the Depression with a renewed insistence in spreading this ideology. In many World’s Fairs, advertising campaigns, films, broadcasts and displays, science was an essential part of their marketing and public relations strategies. Shows like General Motor’s *Parade of Progress* hit the American roads to present the more spectacular features of new discoveries and propagate the good news that science was going to create more jobs¹⁰.

Another actor was the scientific community itself. Although a good part of it remained as conservative as in the 1920s, historian Peter Kuznick has shown how in the late 1930s there was a significant process of political radicalization of the American scientific community, that led to the creation of institutions like the American Committee for Democracy and Intellectual Freedom (ACDIF) and the American Association of Scientific Workers (AASW). Influenced by the lively debates aroused within the British Association for the Advancement of Science by the agitation of the marxist group of first-rank British scientists known as the “visible college”, left-wing American scientists shaped the policies of the American Association for the Advancement of Science (AAAS) in the direction of devoting more energies to a general discussion of the social effects of science and to popularization of science, which came to be seen by some of them, like Walter B. Cannon, as a means of fighting racism and fascism by debunking their irrational myths and spreading among the population the ability to think autonomously and rationally¹¹.

The officers of the Rockefeller Foundation were perfectly aware of the incipient realigning of political loyalties in the scientific community and set themselves to keep track of this left turn in order to contain it if it got to the point of going beyond proper limits¹². And they were also perfectly aware of the renewed emphasis in the social consequences of science and in

popularization that was taking place within the AAAS. Organizing the two-day confidential conference was their way of joining and shaping the debate on popularization as a civic duty started within the scientific community.

Warren Weaver thought of this new awareness of social responsibility as the point of departure for reflection, and started his intervention ringing a bell of alarm in front of the criticisms to science that came even from within the scientific community. It was not only that the marxist group of British scientists were displaying exhibitions such as one called *Frustrations of Science*, in which the argument that capitalism was restraining the positive potential of science was visually defended using panels and statistical charts. What was really alarming was the fact that even respectable journals such as *Nature* were acknowledging the dark side of the scientific enterprise (technological unemployment, alienation, pollution, etc.) and urging scientists to be aware of their social mission.

The debates at the conference were much more complex and diverse than what it is possible to sum up here¹³, but two issues kept appearing again and again: whether it was the method or the results and applications of science that which had to be popularized, on the one hand, and which was the relationship between science and democracy, on the other. The favored view by most scientists –although heavily contested by sociologist William Ogburn- was that the scientific method was what had to be popularized. The issue of science and democracy was more controversial. Considerable disagreement occurred regarding what democracy was and what relation science had -or ought to had- with democracy in the US. Positions ranged from astronomer Harlow Shapley’s defense of scientific habit of thought as a rational tool for fighting authoritarianism and keeping democracy alive, to outspoken eugenicist and filofascist claims by biologist Clarence Little. Most participants stood a middle ground. “Is this conference committed to the espousal of a free democracy?”, asked Harlow Shapley in the midst of a vibrant discussion on the relationship between science and democracy, to which Warren Weaver emphatically replied: “Not in the least!”. “We are not committed to anything”, added the chairman of the session, biologist Oscar Riddle¹⁴.

The officers of the Rockefeller Foundation were not unhappy with the lack of a definite and common answer to these issues, since they conceived the conferences mainly as a “ceremony of getting attention for the subject and recognition of its importance from influential people who ought to feel some concern about it”¹⁵.

In particular, the Rockefeller Foundation was actively interested in framing the intellectual debate in general political terms, which had basically to do with the preservation of social relations. Did science popularization promote social stability? During the 1939 conference, sociologist and political scientist Harold Lasswell (who eventually became during

WWII the Chief of the Rockefeller-funded Experimental Division for the Study of War Time Communications at the Library of Congress) posed the question of the relationship between science and democracy in terms of “anxiety reactions” and “attitudes towards authority”. Were these fostered or mitigated by science popularization? To what extent could an improved science popularization act as a social balsam? In fact, it was John Marshall who explicitly suggested the content and terminology of Lasswell’s intervention some days prior to the conference¹⁶. His goal was to make the participants to the second Rye conference think in science popularization in broad political terms as a social stabilizer beyond their narrower professional activities.

Warren Weaver was inclined to think that the answer to Lasswell’s question was positive, provided that popularization focused on values and method and portrayed science as a habit of thought, not as the latest applications and consumer gadgets, which were actually the most blatantly controversial parts of science. The Rockefeller Foundation conceived a popularization of science focused on method and values as a middle ground that could avoid both the explicitly political talk on the social consequences of science of the radicalized leftist scientists and the triumphalist gadget-centered propaganda promoted by big corporations.

Now the question was *how* to popularize this particular vision of science so that it could act as a social stabilizer, which was something it had been consciously left aside in the first conference. The answer would have to do with mass communications, a field in which the Rockefeller Foundation had a vital interest.

Mass Media and the Popularization of Science: the 1939 Conference “On the Interpretation of the Natural Sciences for a General Public”

Right after the first conference, planning began for a second one that had to gather mass media professionals and executives to explore what was their feeling of how science could best be popularized. In preparation for this conference, the Rockefeller Foundation commissioned Watson Davis, the Director of the scientific news agency Science Service, to conduct a confidential survey “on current efforts to interpret the natural sciences to the general public”, which was probably the first of its kind ever. Newspapers, magazines, books, radio, motion pictures and exhibits covering the first nine months of 1938 were carefully and exhaustively surveyed and analyzed during the last three months of that year. The main result of the detailed quantitative analysis of these several media was that science was interpreted to the public mainly in an indirect way, through advertising and non-scientific programs, rather than in the

formally organized scientific programs. The ad with a vitamin appeal and the movie fictionalizing a doctor were the main sources of science education for the masses¹⁷.

The survey was an important working document for the follow-up two-day conference that was jointly organized by most of the divisions of the Foundation in June 1939 also at the Westchester County Club in Rye. Again, it was small, informal and confidential, and it was chaired by the president of the Rockefeller Foundation, Raymond Fosdick. This time the participants were big names of the social sciences and the mass media (both policy making executives and practitioners)¹⁸.

During the interwar years, the mass media (particularly radio) were emerging powerfully, and parallel to it, there were many efforts to understand and control them. The Rockefeller Foundation was at the vanguard of these efforts, an emblematic example of which was the Princeton Radio Project, a research project into the social effects of radio that started in 1937 and was led, among others, by sociologist Paul Lazarsfeld and psychologist Hadley Cantril. Interested and worried at the same time for the use of mass media in Nazi Germany, where Goebbels was experimenting and achieving spectacular results in relation to political control, the Rockefeller Foundation's interest in mass communications grew as World War II approached. When the war broke out in Europe, the newly formed Communications Seminar used the results of the Princeton Radio Project in order to deal with the problem of propaganda, and acted under John Marshall's coordination as an unofficial arm of the State for devising the psychological warfare policies that were supposed to shift American public opinion from isolationism to interventionism¹⁹.

The Soviets and the Nazis were showing signs of a greater efficiency and ability to mobilize their populations for total war. How to be as efficient as them in using the mass media without losing democracy? How to maintain social control in emergency times? How to create a propaganda that was both efficient and democratic? These were the questions that were being discussed by the very same people (Harold Lasswell, John Marshall, Hadley Cantril, Ivor A. Richards, Donald Slesinger) that had met just some months before in Rye to discuss the political goals of science popularization. We should read the Rockefeller Foundation's approach to science popularization in the 1930s as shaped by all these efforts at systematically studying the mechanisms of mass media, and as shaped by similar concerns with social stability.

The topics discussed at the second conference ranged from the relationship between education and entertainment, or science in documentary films, to discussions over the current popularization efforts in several mass media, but the central issues ended up being audience research and the training of able "middlemen" to interpret science to the public.

There was a general agreement that more audience research was needed both to appraise what was the public's image of science and to find out how did the public react to the messages conveyed by the mass media. In his intervention at the conference, psychologist Hadley Cantril used some preliminary results out of the Princeton Radio Project to assess the possible audience for science in radio. He presented the socioeconomical characterization of the radio audience, and suggested that the best way to proceed in science interpretation would be to imitate the successful methods in mass communication. Watson Davis agreed to this point of view:

“In injecting science into the thought-stream of the public, it will be more effective to adapt science interpretation to the methods of the medium rather than to attempt to revolutionize the medium selected. The scientific revolution for which we hope will come through infiltration rather than by didactic upheaval”²⁰.

The idea that prevailed at the conference, and to which the Rockefeller Foundation was committed, was that the public's ability to absorb science had mainly to do with its presentation. Form was what needed to be improved in science communication. And therefore any eventual practical efforts should be directed towards achieving a more skilled presentation of science.

Many of the debates at the second conference were indeed about scientific popularizers. The participants discussed topics such as the role played by the scientific news agency Science Service, the work and training of scientific journalists -increasingly organized around the recently founded Association of Scientific Writers- or the actual training of radio scriptwriters that dealt with science contents. In one of the many debates in this sense, several of the participants wondered whether it was better to establish a training program in science popularization in the radio aimed at young scientists at college level or to improve the scientific training of journalists²¹.

Most of the participants at the second conference agreed that able “middlemen” were needed if science was to be successfully popularized in the mass media. These “middlemen” were conceived by the officers of the Rockefeller Foundation as mediators between the scientists and the public, someone who could “interpret” or “translate” the language of science to the language of the masses so that it still transmitted information both on the contents and results of scientific research and –tacitly- on the method and values of science. Warren Weaver clearly understood the “middlemen”'s task within the top-down lineal model of popularization²²:

“In this artistic problem of reaching people, you have to remember that they have their own idiom and their own prejudices. That is extremely important. There are many means that we can use to avoid doing violence to their idiom and to their prejudice and gradually get them to see our own point of view, to correct their own misinterpretations. [...] It would be a great thing,

wouldn't it, if some way or other society was spontaneously blessed with a scientific equivalent of Walt Disney?"²³

In fact, the Rockefeller Foundation's Humanities Division had been working in this direction since 1935 regarding mass communications. In the museum field, for example, the Rockefeller Foundation's program of allocations and grant-in-aids had been mainly channeled through money for studies of techniques of display and for training personnel in these techniques²⁴. Dozens of interns were trained in places like the Brooklyn Museum of Art, the Buffalo Museum of Science or the New York Museum of Science and Industry. The Rockefeller Foundation was thus instrumental in what has been called the "communicative turn" in museum display in the United States²⁵.

The Rockefeller Foundation officers organized the confidential conferences on science popularization with the working hypothesis that in the case the Foundation eventually decided to get involved in any significant way in the field of science popularization, the most useful way wouldn't be to create a new internal Division nor to fund a new external organization in this line, but to keep acting as a think tank and, most importantly, to promote awareness for the need of training programs for journalists, scriptwriters, broadcasters and curators

Facing the rise of a new cultural industry, the officers of the Rockefeller Foundation thought that the best course of action to turn science popularization into an efficient tool for social control was to shape the training of the key element in the codification and transmission of many of the scientific messages that would get to the public: the "middlemen" of science.

Conclusions: the Rockefeller Foundation and the Politics of Science Popularization

In September 1939, a conference on science popularization was supposed to take place in Paris. It was the second one organized by the Institute for Intellectual Cooperation of the League of Nations, with the support of the Rockefeller Foundation²⁶. John Marshall and Warren Weaver were supposed to attend the conference, but the war broke out and aborted their travel plans. It also aborted the Rockefeller Foundation's interest in science popularization. More urgent things were ahead.

Even though the whole interest in popularization had been a "gamble" for Rockefeller Foundation officers²⁷, and the money spent in it was a modest quantity according to their

standards, they had shown enough interest in the topic to organize two confidential conferences, commission a private survey and participate in an international effort. As late as 1943, John Marshall still thought that there was still work to do in this field, and hoped that after the war the Rockefeller Foundation would be able to keep stimulating thought on the subject²⁸.

But the officers of the Rockefeller Foundation had already achieved one of their main goals, which was to put the topic in the intellectual agenda of key influential scientists and media men. During the second Rye conference, Warren Weaver quoted a letter by Gerald Wendt, in charge of the science and education contents at the 1939 New York World's Fair, in which he claimed that he had used the transcript of the first conference as a guide in his work. Despite the fact that the overall approach of the World's Fair to the popularization of science had been dominated by corporate design, this letter was for Weaver the proof that "the thinking of the people who attended that conference was very definitely reoriented by their attendance at that conference"²⁹.

How influential were the conferences "On the Interpretation of the Natural Sciences for a General Public" and the Rockefeller Foundation's approach to popularization in the postwar period? More research is needed for this question to be properly addressed, but the answer might have to do with Warren Weavers' efforts in this direction. Historian Bruce Lewenstein has pointed to the key role that Warren Weaver played in shaping post-WWII "public understanding of science" in the United States through his work at the American Association for the Advancement of Science, the Council for the Advancement of Science Writing, and the National Science Foundation³⁰. His active involvement in the 1938 and 1939 Rye conferences seems to indicate that many of his postwar concerns should be traced back to the interwar period and reassessed in the light of the 1930s battle over the popularization of science.

In any case, the Rockefeller Foundation is an actor which needs to be added to the historiographical picture of the politics of science popularization in the United States in the 1930s.

I argue that the interest of the Rockefeller Foundation in science popularization has to be placed at the crossroads of two different but interrelated key elements in the struggle for cultural hegemony in the United States: science and the mass media. An intelligent management of mass communications was perceived as crucial for social stability. And science popularization was not only a very sensitive political issue at that time, but also an area which offered the Rockefeller Foundation an ideal case study for strategic thinking in mass communications, since it allowed cooperation between all its Divisions in a field the officers knew very well from first-hand experience.

At a time in which there was an incipient professionalization process going on in the field of science popularization, the Rockefeller Foundation's officers thought that their best way to shape this process was to bring the topic into the attention of key individuals, and eventually to promote training programs for a new kind of middlemen of science that had to create a new popular science adapted to a new cultural industry, one which shouldn't have the overtly political tones of the radicalized leftist scientists nor the triumphalist and gadget-centered propaganda of the big technoscientific corporations, but would focus on the morally uplifting values of the scientific method as a way to preserve the social order.

¹ LaFollette, Marcel. *Making Science Our Own: Public Images of Science, 1910-1955*. Chicago: University of Chicago Press, 1990.

² Kohler, Robert. *Partners in Science: Foundations and Natural Scientists, 1900-1945*. Chicago: University of Chicago Press, 1991; Cueto, Marcos (ed.). *Missionaries of Science: the Rockefeller Foundation and Latin America*. Indianapolis: Indiana University Press, 1993.

³ Kay, Lily. *The Molecular Vision of Life: Caltech, the Rockefeller Foundation and the Rise of the New Biology*. Oxford: Oxford University Press, 1993.

⁴ David Stevens, "New Program in the Humanities", 1935, Folder 10, Box 2, Series 911, RG 3.1, Program and Policy, Rockefeller Foundation records, Rockefeller Archive Center.

⁵ Gary, Brett. "American Liberalism and the Problem of Propaganda: Scholars, Lawyers, and the War on Words, 1919-1945". PhD diss., University of Pennsylvania, 1992.

⁶ The participants at the conference were: Karl Compton (Massachusetts Institute of Technology), Watson Davis (Science Service), William Ogburn (Chicago University), Clarence C. Little (Roscoe B. Jackson Memorial Laboratory), William Beebe (New York Zoological Society), E.T. Bell (California Institute of Technology), C.M.B. Cadwalader (Philadelphia Academy of Natural Sciences), Henry Fairfield Osborn (New York Zoological Society), Ivor A. Richards (Magdelene College, Cambridge), Oscar Riddle (Department of Genetics, Carnegie Institution), Paul B. Sears (Oberlin College), Harlow Shapley (Harvard College Observatory), Alan Gregg (Director of The Division of Medical Sciences of the Rockefeller Foundation), R.J. Havighurst (Director for General Education of the Rockefeller-funded General Education Board), John Marshall (Associate Director of the Humanities Division of the Rockefeller Foundation), David H. Stevens (Director of the Division of Humanities of the Rockefeller Foundation), Warren Weaver (Director of The Division of Natural Sciences of the Rockefeller Foundation). Note that all the participants were *university* scientists, which were the ones that the Rockefeller Foundation was mostly in contact. The conference didn't include the voice of industrial scientists, which at that time were questioning the traditional scientific *ethos* and developing a different one, as Steven Shapin has recently argued (Shapin, Steven. *The Scientific Life: A Moral History of a Late Modern Vocation*. Chicago: Chicago University Press, 2008).

⁷ "Conference on the Interpretation of the Natural Sciences for a General Public, Memorandum of the Discussion for the Private Use of Participants -Volume I (Sections I-III)", 1938, p. 5, Folder 121, Box 15, Series 100, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archive Center.

⁸ McGrath, Patrick. *Scientists, Business and the State, 1890-1960*. Chapel Hill: University of North Carolina Press, 2002.

⁹ Bix, Amy. *Inventing Ourselves Out of a Job? America's Debate over Technological Unemployment, 1929-1981*. Baltimore: Johns Hopkins University Press, 2000.

¹⁰ Rydell, Robert. "The Fan Dance of Science: American World's Fairs in the Great Depression". *Isis* 76 (1985): 525-42; Marchand, Roland. *Creating the Corporate Soul: The Rise of Public Relations and Corporate Imagery in American Big Business*. Berkeley: University of California Press, 1998.

¹¹ Kuznick, Peter. *Beyond the Laboratory: Scientists as Political Activists in 1930s America*. Chicago: University of Chicago Press, 1987; Kuznick, Peter. "Losing the World of Tomorrow: The Battle Over the Presentation of Science at the 1939 New York World's Fair". *American Quarterly* 46 (1994): 341-373.

¹² Upon returning from the 1938 meeting of the British Association for the Advancement of Science, Watson Davis, the Director of the news agency Science Service, dutifully reported to Warren Weaver about the behind-the-scenes movements at the BAAS regarding the creation of a new division on the

social relations of science, always with an eye kept in their own side of the Atlantic: “Gossip concerning the recent meeting of the British Association. The English interest in the social implications of science is being actively sponsored chiefly by a young and rather radical group. The older, more conservative English scientists are somewhat disturbed and are entering into the plans for the new division of the British Association largely to keep the young, radical group from running away with the ball. Davis’s estimates are skeptical, so far, that any definite possibilities will evolve from the cooperative interest in this field as it is being developed between the British group and the AAAS” (“Interview with Mr. Watson Davis”, Warren Weaver Diary excerpt, October 7, 1938, Folder 127, Box 15, Series 100, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archive Center). On the British marxist scientists, see also: Werskey, Gary. *The Visible College: A Collective Biography of British Scientists and Socialists of the 1930s*. London: Viking, 1978; Werskey, Gary. “The Visible College Revisited: Second Opinions on the Red Scientists of the 1930s”. *Minerva* 45 (2007): 305-319.

¹³ I am currently preparing an article on this subject which will include a more complete account of these debates.

¹⁴ “Conference on the Interpretation of the Natural Sciences for a General Public, Memorandum of the Discussion for the Private Use of Participants -Volume II (Sections IV-V)”, 1938, p. 140, Folder 122, Box 15, Series 100, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archive Center.

¹⁵ “General Strategy for the Conference on the Interpretation of the Natural Sciences at Rye, June 16 and 17”, attached to John Marshall to Alan Gregg, June 8, 1939, Folder 119, Box 14, Series 100, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archive Center. Apart from the participants, copies of the transcripts were sent to Vannevar Bush (then Director of the Carnegie Institution of Washington), Frederick Keppel (President of the Carnegie Corporation), F. R. Moulton (President of the American Association for the Advancement of Science), Milton Silverman (Director of the Science and Education Committee of the 1939 Golden Gate San Francisco Fair) and finally Gerald Wendt (Director of the Science and Education Committee of the 1939 New York World’s, and former Director of the American Institute).

¹⁶ “For example (though without in any way intending to indicate or to set limitations for your remarks), you might well deal with the subject in terms of authority and anxiety. If science were more adequately and more authoritatively interpreted, what changes would result? To what extent would such better interpretation be “good”?” (John Marshall to Harold Lasswell, June 8, 1939, Folder 119, Box 14, Series 100, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archive Center).

¹⁷ Watson Davis, “A Survey of Interpretation of Science to the Public”, 1939, p. 1, Folder 22, Box 381, Record Unit 7091, Science Service records, Smithsonian Institution Archives. On Science Service, see: Rhees, David. “A New Voice for Science: Science Service under Edwin E. Slosson, 1921-1929”. MA Thesis, University of North Carolina, 1979.

¹⁸ The following is the list of participants to the second conference. Representing the scientific community and the point of view of the first conference: Clarence Little (Jackson Memorial Laboratory, Bar Harbor, Maine), F. R. Moulton (President of the American Association for the Advancement of Science), Harlow Shapley (Harvard University) and Watson Davis (Science Service). Representing the social sciences: Hadley Cantril (Princeton University) and Harold Lasswell (William A. White Foundation). Representing radio executives and practitioners: J.R. Angell and Lenox R. Lohr (National Broadcasting Company), on the one hand, and Sterling Fisher and Gilbert Seldes (Columbia Broadcasting System, CBS), on the other. Representing the film industry: Carl A. Milliken (Motion Picture Distributors and Producers of America, NYC), Thomas Baird (Film Center, London) and Donald Slesinger (American Film Center, NYC). Representing the press: William L. Chenery (Colliers Magazine) and David Dietz (Scripps-Howard Newspapers). Representing museums: Robert P. Shaw (New York Museum of Science and Industry). Representing the Comité des Experts pour la Diffusion de la Science of the Intellectual Cooperation Institute: Arnold Raestad (chairman of the committee and former minister of Norway). Representing the Rockefeller Foundation: Raymond B. Fosdick (President), Alan Gregg (Director of the Medical Sciences Division), Robert J. Havighurst (Director of the program in education of the General Education Board), David H. Stevens (Director of the Humanities Division), John Marshall (Associate Director of the Humanities Division), Warren Weaver (Director of the Natural Sciences Division), and Sydnor H. Walker (Associate Director of the Social Sciences Division) (“Proceedings of the Rockefeller Foundation Conference on the Interpretation of Science for a General Public -Part I”, 1939, p. 2, Folder 123, Box 15, Series 100, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archive Center).

¹⁹ Gary, Brett. “American Liberalism and the Problem of Propaganda: Scholars, Lawyers, and the War on Words, 1919-1945”. PhD diss., University of Pennsylvania, 1992.

²⁰ Watson Davis, “Summary of Survey of Interpretation of Science to the General Public”, 1939, pp. 6-7, Folder 23, Box 381, Record Unit 7091, Science Service records, Smithsonian Institution Archives.

²¹ “Proceedings of the Rockefeller Foundation Conference on the Interpretation of Science for a General Public -Part III”, 1939, Folder 125, Box 15, Series 100, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archive Center

²² Hilgartner, Stephen. “The Dominant View of Popularization: Conceptual Problems, Political Issues”. *Social Studies of Science* 20 (1990): 519-539. The historiography on science popularization has grown exponentially during the last decades. For a comprehensive overview, see: Nieto-Galan, Agustí. *Los públicos de la ciencia: Expertos y profanos a través de la historia*. Madrid: Marcial Pons, 2011.

²³ “Conference on the Interpretation of the Natural Sciences for a General Public, Memorandum of the Discussion for the Private Use of Participants -Volume II (Sections IV-V)”, 1938, p. 191, Folder 122, Box 15, Series 100, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archive Center.

²⁴ “New Ideas in Museum Techniques and Training”, *Confidential Monthly Report*, November 1, 1938, pp. 12-15, Box 213, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archives Center.

²⁵ Niquette, Manon, and Buxton, William. “‘Sugar-Coating the Educational Pill’: Rockefeller Support for the Communicative Turn in Science Museums”, in *Patronizing the Public: American Philanthropy’s Transformation of Culture, Communication and the Humanities*, edited by William Buxton, 153-194. Lexington: Lexington Press, 2009. For an account of the politics of display at the New York Museum of Science and Industry, see: Sastre-Juan, Jaume. “Un laboratori de divulgació tecnològica: el New York Museum of Science and Industry i la política de la museïtzació de la tecnologia als Estats Units (1912-1951)”. PhD diss., Universitat Autònoma de Barcelona, 2013[in Catalan; the title in English is: “A Laboratory for the Popularization of Technology: the New York Museum of Science and Industry and the Politics of Display in the United States (1912-1951)”. For an excellent approach to the political context of the birth of museums of science and industry in the United States, see: Jones, Russell Douglass. “Engineering History: The Foundation of Industrial Museums in the United States”. PhD diss., Case Western Reserve University, 2009.

²⁶ The transcripts of the first Paris conference and substantial information both on the plans of their organizers and the reactions of the Rockefeller Foundation to them can be found at: Folders 112-117, Boxes 13-14, Series 100, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archive Center.

²⁷ John Marshall to Ivor A. Richards, January 25, 1939, Folder 113, Box 13, Series 100, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archive Center.

²⁸ “I still have the impression that our assistance for this kind of thing can best be directed toward thinking out the problem. It strikes me that there is a good deal of thinking still to be done on such topics as what ought to be the major themes of interpretation, how can those basic themes be interpreted in such a way as to strike the basic needs and interests of the audience, etc.? [...] I still hope that after the war this whole subject is something that we may be able to pick up again” (John Marshall to FBH, November 18, 1943, Folder 120, Box 14, Series 100, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archive Center).

²⁹ “Proceedings of the Rockefeller Foundation Conference on the Interpretation of Science for a General Public -Part I”, 1939, pp. 52-53, Folder 123, Box 15, Series 100, RG 1.1, Projects, Rockefeller Foundation records, Rockefeller Archive Center

³⁰ Lewenstein, Bruce. “The Meaning of ‘Public Understanding of Science’ in the United States after World War II”. *Public Understanding of Science*, 1 (1992): 45-68.