Cultural Histories of Science in Franco's Spain
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Introduction to the Special Issue "Cultural Histories of Science in Franco's Spain"

On 24th November 1939, the Franco regime took its first significant step in the field of science policy with the creation of the Consejo Superior de Investigaciones Científicas (Spanish National Research Council, still known as CSIC) (Malet, 2008; López Sánchez, 2016), a "body with a new structure" to which was assigned the lofty mission of restoring the "classical and Christian unity of the sciences destroyed in the eighteenth century", "rectifying the divorce and discord between the speculative and experimental sciences" and "imposing on the area of culture the essential ideas that have inspired our Glorious Movement" (BOE, 1939, p. 6668). As is well known, this initiative took place in the context of a violent process of dismantling and purging of the country's universities and scientific institutions that led a large number of their most prestigious researchers to exile, prison, ostracism, misery and even death (Otero Carvajal, 2006; Claret Miranda, 2006). In both form and substance, the dictatorship attacked with ferocity a field that was particularly emblematic of the achievements of the "Edad de Plata" (Silver Age) which—within the stalest tradition of Spanish reactionary thought—the Caudillo considered to have been infiltrated at its roots by everything he most detested: liberalism, Freemasonry and the spirit of the Enlightenment (Novella Suárez, 2007; Moradiellos, 2017).

Almost a quarter of a century later, when the regime was preparing to commemorate the "25th year of peace" in a climate of developmentalist euphoria and technocratic authoritarianism (Townson, 2009; Morán, 2014), Manuel Lora Tamayo, then Minister of National Education, acknowledged the "magnificent research output" promoted by the old Junta de Ampliación de Estudios (Board for Advanced Studies)—although he regretted its "almost total lack of applied output"—and was pleased that the initiatives of the "New State" had placed it in a "situation that is certainly envied" in the "universal scientific market" (Lora Tamayo, 1963, pp. 6, 30).[1] Shortly afterwards, Franco himself was named *Doctor Honoris Causa* by the Faculty of Science of the University of Santiago de Compostela for "his performance, not in a figurative way, but in a genuine, authentic way, protecting pure and applied sciences, both at the highest cultural level of any nation, as is the university environment, and in the different institutions dedicated to the most diverse specialities" (Iglesias, 1965, p. 11).

These events and their corresponding rhetorics can undoubtedly be taken as a good example not so much of the contradictions of a regime that always remained in a permanent dissociation between reaction and modernity, but of the extraordinary complexity of the relations between science and political power in Franco's Spain. In fact, in contrast to the traditional interpretation according to which Franco's regime had abandoned the cultivation of science because of ideology, the ineffectiveness of its institutions and the animosity of its elites, in recent years the important role of scientific research, and especially of so-called "applied science", in the construction of the New State has come to be highlighted (Camprubí, 2017a). Thus, despite all its ultramontane verbiage, the regime had committed itself from the outset to scientific-technical rationality and the efficiency of certain strategic areas in order to tackle a series of tasks that were absolutely vital for its own survival (organising the territory, managing resources, disciplining behaviour, solving pressing social problems, etc.).[2] And, perhaps for this reason, it is relatively easy to establish all kinds of parallels and continuities between "Francoist science" –with all its peculiarities– and that developed in other epochs and national contexts.

Assuming this shift in focus, an appreciable number of publications and research projects have recently been completed which, within the framework of a renewed general interest in the period, have dealt with different facets of the scientific-technological activity carried out during the Franco dictatorship. As might be expected, these include those focused on the world of experts and devoted to the evolution of different disciplines, theoretical contents and professional fields (medicine, public health, psychiatry, chemistry, physics, biology, phar-

macy, engineering, astronomy, etc.), but also others related to the ups and downs of some emblematic institutions and facilities (universities, CSIC, hospitals, asylums, nuclear power stations, etc.), science policy strategies (exchanges with other countries, links with industry, patents, etc.) and even the growing implementation of various practices for the communication and popularization of science (in the press, periodicals, radio, television, etc.).[3] Certainly, the effort of recent years has served to reconstruct in a much more detailed and profound manner some very significant and relevant areas, but it has also generated an enormous wealth of information which, as has been pointed out, invites to revise previous assessments in order to provide a richer, more nuanced and complex overall view.

With the participation of several historians of science involved in some of these projects, this special issue aims to contribute to this historiographical debate by examining some "cultures of science" which, in a more or less marked dialectic between tradition and modernity, were forged, fostered and/or promoted during the long period of Franco's dictatorship. Taking as a reference the assumptions of the recent cultural history of science and, more specifically, the consideration of scientific activity as an always heterogeneous aggregate of representations, meanings and practices centred on the production, circulation and consumption of certain forms of knowledge,[4] this collection is made up of a series of papers which, inspired by this basic approach, aim to continue advancing in the understanding of the role and the evolution of scientific discourses and practices in this crucial stage of contemporary Spanish history.

The collection opens with two studies that analyse the regime's attempts to purge science of its materialistic components and adapt it to the political reality of National Catholicism. In the first article, "Constructing 'pure' and 'applied' science in early Francoism", Agustí Nieto-Galan analyses the various appropriations of the categories of "pure" and "applied" science in early Francoism. The author shows how both categories were morally elevated and put at the service of strengthening the dictatorship, establishing a solid alliance between science and political power, deeply marked by the principles of National Catholicism. In their "The cultural meaning of physics and evolution in Francoist Spain", Clara Florensa and Xavier Roqué study the reappropriation, correction and reformulation of the conceptual foundations and cultural values associated with two emblematic disciplines and doctrines of modern science, namely physics and the theory of evolution.

The next two papers focus on technological aspects and the application of science, also showing the uses of science in order to bolster the dictatorship. Thus, in "From arsenic to DDT: Making invisible the risks of pesticides in early Francoist Spain (1939-1953)", Silvia Pérez-Criado and José Ramón Bertomeu Sánchez delve into the study of the application of pesticides during the early Francoist period. They highlight how, in the context of economic autarky, the use of arsenical pesticides to combat the Colorado beetle was promoted at the beginning of the 1940s. A series of factors encouraged this use, which was duly legitimised by the dictatorship in close alliance with the agricultural engineers despite its harmful effects on public health. They also analyse how DDT displaced the arsenical pesticides in the second half of the decade in a different political and international context in which Franco's regime sought to avoid isolation, showing the changes that took place in the pesticide industry, as well as the silence to which those affected by its use were subjected. For her part, in "Atomic routes and cultures for a new narrative on Franco's regime" Ana Romero de Pablos looks into the ins and outs of the trip of two engineers to the United States and Canada in 1957 with the goal of getting acquainted with the nuclear technology used to produce electricity, showing how the record of their journey was a determining factor for the political, industrial and economic powers of the dictatorship when it came to designing nuclear policies. The author reflects on how nuclear energy participated in the construction of a new narrative of Francoism that depicted Spain as a modern, internationally connected State capable of incorporating the latest atomic technologies.

Finally, the last three articles analyse various scientific and cultural aspects related to the role of psychiatry and medicine in underpinning Franco's regime, and they bring to light some hitherto less studied nooks and crannies that contribute to enriching the canonical view of these areas. In "Racism, *Hispanidad* and social hierarchy in medical-psychiatric thought during early Francoism. The work by Misael Bañuelos (1936-1941)", Ricardo Campos examines and compares some of the discourses and racial proposals that were made in medicine and psychiatry during early Francoism. The vision of Misael Bañuelos, openly biologicist and influenced by the racial theories of Nazism, is dealt with, and his confrontation with the racial views sustained by the supporters of *Hispanidad* and National Catholicism, and especially, with Antonio Vallejo Nágera, is analysed. Enric Novella, for his part, tackles the conservative cultural criticism deployed within the psychiatric field during the Franco regime. Starting with the fear of a possible physical and moral regression of the Hispanic world due to the effects of modern life, the infiltration of liberalism and the erosion of traditional values, this genre began to shift its interest towards an analysis of the "neurotised society" which, with philosophical reference points such as Ortega or Heidegger, pointed to the excesses of instrumental reason, machinism and the "hyper-technification" of the modern world as one of the main sources of psychic discomfort and suffering. And the collection closes with Silvia Lévy's paper "Between modernity and tradition: the formation of a psychoanalytic culture during the Franco dictatorship", where she analyses the process by which the categories of psychoanalysis became part of the scientific and popular culture of Francoism, in other words, the

reappropriation and resignification that National Catholicism made of a theory considered progressive and modern. The process of purification of the postulates of psychoanalysis resulted in the incorporation of psychoanalytic terms and ideas in various popular media, and led to the consolidation of psychoanalysis as a cultural reference framework in Spain.

NOTES

1 On the "technocratic" profile of Lora Tamayo, see Nieto-Galan (2016).

2 In the case of Germany, this analytical perspective was already suggested by Herf (1984) and has been adopted more recently by Saraiva (2016).

3 Apart from the already cited references and other previous outstanding works such as the monograph by Santesmases (2001) or the studies included in Puig-Samper (2007), the books authored or edited by Herran and Roqué (2012), González Bueno and Baratas Díaz (2013), Porras Gallo (2013), Nieto-Galan (2013), Campos and González de Pablo (2016), Ruiz-Castell (2016), Huertas (2017), Comelles and Perdiguero-Gil (2017); Camprubí (2017b), Camprubí, Roqué and Sáez de Adana (2018), Romero de Pablos (2018), and Porras Gallo, Mariño Gutiérrez and Caballero Martínez (2019) are also worth mentioning here. Moreover, it must be added an equally important number of doctoral theses presented in recent years at different universities inside and outside Spain.

4 For a general orientation, see Dear (1995), Daston (2002), Pimentel (2010) or Chartier (2016).

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