Scientific–medical knowledge management through media communication practices: a review of two opposite models in early 20th century Spain

Carlos Tabernero[*], *Isabel Jiménez-Lucena*[**], *Jorge Molero-Mesa*[*]

Abstract

This paper explores the complex relationship between two sets of practices and discourses that are essential constituents of the processes of construction and functioning of contemporary societies: medicine-health and mass media. Two context-linked and overtly contrasting case studies help illustrate the intricate dynamics of scientific-medical knowledge management, that is, from its generation and circulation to its appropriation, as articulated through mass media: first, the Spanish libertarian movement strategies of re-signification of officially sanctioned medical-health knowledge as conveyed in a medical Q&A section of a 1930s Spanish anarchist magazine; and second, the use of medical-health policies, as applied to colonial settings and portrayed through documentary films, as a crucial element for the legitimizing strategies of Franco's fascist regime in the 1940s. By pondering them jointly, and owing to the radical opposition of the approaches to knowledge management they represent, we show the application of a combined theoretical framework to tackle these processes. On the one hand, the multidimensional, social and professional inclusion-exclusion dynamics involved in the construction and circulation of scientific-medical knowledge is considered. On the other, the communication practices and discourses that are conducive of these dynamics are explored.

Keywords: scientific-medical knowledge management, inclusion–exclusion, communication practices, anarchist press, francoist medical-colonial documentaries.

[*] Centre for the History of Science (CEHIC) / Faculty of Medicine – Autonomous University of Barcelona

[**] History of Science Studies / Faculty of Medicine – University of Malaga

1. Medical-health knowledge and mass media

The experience of illness constitutes an integral part of people's biographies and everyday lives. It might be argued that it is hardly visible as it typically stays in the private sphere, either in the strict individual terms of each person's dwellings, work circumstances, family and acquaintances, or within the realm, when available, of the relationship between doctors and patients. However, it is through this relationship, as held within a given health system, as well as through people's interactions in the social domain, notwithstanding other epidemiological factors, that *illnesses*, understood as an individual's utter sufferings that lead to an impossibility to live life to the full, may eventually start becoming *diseases*, namely, publicly and/or officially recognized morbid species, and *sicknesses*, that is, with clear-cut social, political and cultural dimensions[1]. Indeed, we may further argue that the differentiation between these terms is based upon distinct levels of visibility, where individual experiences of illness may ultimately turn into a collective experience of disease. Given the strategic importance of such experiences, such processes necessarily require the contribution of an array of practices and discourses, which lie, in turn, at the heart of the social, political and cultural scaffolding of human communities.

This paper focuses on the complex relationship between two sets of practices and discourses that are indeed essential constituents of the processes of construction and functioning of contemporary societies: medicine-health and mass media. The take of modern medicine on processes of health and disease importantly involves the designing and building of health systems and the implementation of public health policies. These systems and policies inescapably shape, among other aspects, the abovementioned individual experience of illnesses as well as the relationship between doctors and patients. Indeed, Public Health, as a set of institutionalized, health-related structures, practices and discourses that have become ever-present in people's everyday lives, is a key constituent of the construction and management of the ways that people, individually and collectively, perceive and experience health and disease. Hospitals, health centres and surgeries have become, through the processes of institutionalization and professionalization of medical practices in the last two centuries, common background features of the landscapes of contemporary societies. The practices that take place and are prescribed in these venues as well as the

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[1] Eisenberg L. (1977) "Disease and illness: distinctions between professional and popular ideas of sickness". *Culture, Medicine and Psychiatry* 1(1): 9-23, as discussed in: Tabernero, Carlos; Perdiguero, Enrique (2011) "Cinema and the collective dimensions of disease". *Journal of Medicine and Movies* 7(2): 44-53.

discourses that are generated and used in and around them, either separately or as State comprehensive health policies, contribute to make disease visible to the community. In addition, all these processes, given their undeniable significance, play a decisive role in the construction of identity, at individual, physical, social and cultural levels[2].

We hope to contribute to the historical understanding of largely multi-layered (i.e. shared by experts and non-experts) processes of generation and management of scientific-medical knowledge and their impact, above all when articulated through mass media, on patterns of socio-cultural transformation.

Mass media also play a central part regarding, among many other aspects, the visibility of disease and its role in the shaping of individual and community identity. Largely during the last two centuries, as happened with medicine, the mass media have grown to be an essential set of practices and discourses for the construction and consolidation of contemporary societies. They constitute one main source of wide-ranging representations and interpretations of the values, projects, concerns and expectations of each human community. Their use contributes to the formulation of the symbolic framework on which the social, economic, political, ethical and cultural life is built and sustained. And in addition, owing to the mounting presence of mass media in everyday life activities, their appropriation entails the shaping of the spatial and time experience, perception and organization of people's lives within those communities. Thus, from the point of view of people's perception and experience of health and disease, mass media play a necessary and complementary role to and for the Public Health system, its venues, policies, practices and discourses[3].

Recent developments and debates in many different fields addressing the mechanisms of construction and circulation of knowledge in contemporary societies have focused on exploring and questioning the assumption of a vertical, unidirectional diffusion model of knowledge management[4]. For instance, taking medicine and

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[2] See, for instance: Andrew Wear (ed.), *Medicine in Society* (Cambridge: Cambridge University Press, 1992); Ilana Löwy; John Krige (eds.), *Images of Disease: Science, Public Policy and Health in Post-war Europe* (Luxembourg: Office for Official Publications of the European Communities, 2001); Ballard, Karen; Elston, Mary A. (2005). "Medicalisation: A Multi-dimensional Concept". *Social Theory and Health* 3: 228-241. And also: Stanley Aronowitz, *Science as Power. Discourse and Ideology in Modern Society* (Minneapolis: University of Minnesota Press, 1988); Mark Walker, *Science and Ideology. A Comparative History* (London: Routledge, 2003).

[3] Clive Seale, *Media and Health* (London: Sage, 2004); Lester D. Friedman (ed.), *Cultural Sutures: Medicine and Media* (Durham, N.C.: Duke University Press, 2004).

[4] Alan Irwin; Brian Wynne, *Misunderstanding Science? The Public Reconstruction of Science and Technology,* (Cambridge: Cambridge University Press, 1996); Secord, James A. (2004). "Knowledge in Transit". *Isis* 95: 654–672; Massimiano Bucchi; Federico Neresini, "Science and public participation". In: E. J. Hackett, O. Amsterdamska, M. Lynch and J. Wajcman (eds). *The Handbook of Science and Technologies Studies* (Cambridge, MA: MIT Press, 2008), pp. 449-472; "Focus: Historicizing 'Popular Science'". (2009). *Isis* 100(2): 310-368;

Public Health, on the one hand, and mass media, on the other, in a deliberately broad sense as sets of 'practices and discourses', as we have insistently so far referred to them both, implies acknowledging explicitly their condition as forms of everyday action and interaction among individuals, groups and institutions within the socio-cultural framework of human communities. This involves, importantly, mechanisms of creation, circulation and management of knowledge (specifically medical/health-related), which are utterly fundamental, precisely, for the processes of construction, legitimation, functioning and consolidation of contemporary human communities. In this sense, as we focus on the processes of popularization of scientific knowledge, it is traditionally assumed (and applied or as a rule at least attempted, even arguably in the current age of the Internet) that knowledge is vertically transmitted from the few experts that create it or facilitate its generation and then circulated to the many purportedly passive, non-participant, submissive and dependent non-experts[5]. Hence, it has become necessary to tackle the processes of science, medicine and technology popularization from a combined perspective that takes into account power relations and their embedding in people's everyday lives.

This paper is a review of the joint application of two theoretical and methodological approaches that consider (a) inclusion–exclusion dynamics which are conducive of processes of validation of authority and the associated knowledge production[6]; and (b) the communication practices and discourses that contribute to these dynamics[7]. In order to do this, we use our own experience applying them jointly to two specific, contrasting and context-linked case studies related to medical-health knowledge, practices and discourses as put across through mass media. On the one hand we consider the strategies of re-signification of officially sanctioned medical-health knowledge and its articulation through the redefinition of people's participation in knowledge management processes, as conveyed in a medical Q&A

Agustí Nieto-Galán, *Los públicos de la ciencia. Expertos y profanos a través de la historia* (Madrid: Marcial Pons, 2011).

[5] John B. Thompson, *The Media and Modernity. A Social Theory of Media* (Cambridge: Polity Press, 1995); Tabernero, "Cine y procesos de medicalización". The experts, in the case of medical-health knowledge and its articulation through media, would mostly be scientists, physicians, professors, policy-makers, producers, editors, distributors, companies and institutions. Conversely, the non-experts would mostly be patients, users, customers, students, readers, listeners, viewers, or the population at large.

[6] Cornelia Bohn, "Inclusion and exclusion: Theories and findings. From exclusion from the community to including exclusion". In: A. Gestrich, L. Raphael and H. Uerlings (eds.) *Strangers and Poor People. Changing Patterns of Inclusion and Exclusion in Europe and the Mediterranean World from Classical Antiquity to the Present Day* (Frankfurt: Peter Lang, 2009), pp. 35-54.

[7] Couldry, Nick (2003) "Review Article: Everyday Life in Cultural Theory". *European Journal of Communication* 18(2): 265-270; Couldry, Nick (2004) "Theorising Media as Practice". *Social Semiotics* 14(2): 115–32; Birgit Bräuchler and John Postill, *Theorising Media and Practice* (Oxford/New York: Berghahn, 2010).

section of a 1930s Spanish anarchist magazine[8]; and, on the other, the use of medical-health policies, as applied to colonial settings and portrayed through documentary films, a significant element within the legitimating strategies of Franco's fascist regime in the 1940s, aiming at disciplining the population[9].

2. Authority and resistance

Focusing on processes of power implies the need to look at knowledge management, among other aspects, from the perspective of inclusion–exclusion dynamics. Inclusion–exclusion dynamics in contemporary societies are complex, multidimensional processes where wide-ranging social, economic, political and cultural factors combine to produce the patterns of classification and rationalization of distinct human clusters upon which a given community is built and functions. Scientific-technological practices and discourses, and especially when related to medical-health concerns, as basic constituents of western hegemonic thought, undoubtedly play a fundamental role in these processes. In this sense, regarding medical-health practices and discourses, we must examine the development of processes of (de)medicalization, as assimilation and resistance to hegemonic principles and values taking place as a concurrent dynamics. The abovementioned assumption that medicalization as a lineal, unidirectional process of inescapable *imperialist* domination on the part of mainstream science and medicine, is utterly insufficient from an analytical point of view. Such perspective implies the consideration of knowledge management endeavours in a non-problematic way (even when resistance is framed in a rather one-dimensional dichotomy of opposites), while it has become clear, as described, that these are complex, multi-layered and multidimensional

[8] Molero-Mesa, Jorge; Jiménez-Lucena, Isabel (2013) "'Simpatía por los manuales'. Las dinámicas de inclusión-exclusión en torno a la profesión médica y el anarcosindicalismo español en el primer tercio del siglo XX". *Dynamis* 33(1) (in press); Tabernero, Carlos; Jiménez-Lucena, Isabel; Molero-Mesa, Jorge (2013) "La redefinición de la participación en el movimiento libertario en la España del primer tercio del siglo XX: la sección 'Preguntas y respuestas' (1930-1937) de la revista *Estudios*". *Dynamis* 33(1) (in press); Jiménez-Lucena, Isabel; Molero-Mesa, Jorge (2011) "Good birth and good living. The (de)medicalising key to sexual reform in the anarchist media of inter-war Spain". *International Journal of Iberian Studies (IJIS)* 24(3): 219-241; Carlos Tabernero, "La sección 'Preguntas y Respuestas' de la revista anarquista "Estudios" (1930-1937): generación y gestión multidimensional de conocimiento científico-médico". In: Porras Gallo M.I., *et al*. (eds.) *Transmisión del conocimiento médico e internacionalización de las prácticas sanitarias: una reflexión histórica* (Ciudad Real: SEHM y Universidad de Castilla-La Mancha, 2011), pp. 407-411.

[9] Carlos Tabernero; Isabel Jiménez-Lucena; Jorge Molero-Mesa, "Film, medicine and empire: inclusion-exclusion practices and discourses in Spanish medical-colonial documentaries of the 1940s". In: Roca-Rosell A. (ed.) *The Circulation of Science and Technology. Proceedings of the 4th International Conference of the ESHS* (Barcelona: SCHCT-IEC, 2012), pp. 1159-1165; Carlos Tabernero, "Cine y procesos de medicalización: documentales médico-coloniales de la posguerra española (1946-1949)". In: Antonin M., Brigidi S. (eds.) *Cultura, Salud y Cine* (Bellaterra,Barcelona: EUI Gimbernat - Universidad Autónoma de Barcelona, 2012, in press); Carlos Tabernero, "El proceso salud-enfermedad como instrumento del discurso hegemónico en el cine español de la posguerra (1939-1950)". In: Ortiz Gómez T., *et al*. (eds.) *La experiencia de enfermar en perspectiva histórica* (Granada: Universidad de Granada, 2008), pp. 361-365.

processes, where hegemonic and counter-hegemonic lines of thought are necessarily intertwined[10]. Health-medical-driven, positivist and biology-based control and disciplining (*colonizing*) of people's bodies has been and is constantly negotiated, assimilated and resisted, by distinct active agents through complex sets of practices and discourses. Such negotiations take place beyond the strict limits of the scientific and medical realms, entering the political, economic, social and cultural milieus of human communities. Moreover, they occur mostly through dynamic processes of re-signification concerning scientific-medical knowledge, and of redefinition of participation (of distinct groups) in the management of this kind of knowledge (among others). This opens the possibility for different kinds of biopolitics, including those where the apparently incontestable techno-scientific normalizing of social clusters is counteracted through the outlining of a completely different view of nature (see below). Such different biopolitics also need the input of scientific-medical professionals, which would not be devoid of conflict, as it would aim at the generation of alternative sets of discourses and practices[11].

Bearing this in mind, and as shown by recent historiography, it should not come as a surprise that science and medicine were also fundamental for the development of libertarian thought. A close examination of the Spanish anarchist movement of the first third of the 20th century reveals complex medicine–health-related inclusion–exclusion strategies, mainly related to medical professionals, albeit certainly concerning all actors involved in the management of these practices and discourses. Indeed, the construction of an anarcho-syndicalist model in Spain at that time entailed guaranteeing the independence of the unions, which meant, among other aspects, preventing intellectuals or professionals of any political and ideological stripe (including anarchists) from imposing a line of action on the rank and file. Anarchist trade unions did not accept the techno-scientific imperative that deemed intellectuals or professionals as the best suited to make decisions concerning the community. Regarding medical experts in particular, anarchists were carrying out a

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[10] Ballard and Elston, "Medicalisation". Kusiak, Pauline (2010) "Instrumentalized rationality, cross-cultural mediators, and civil epistemologies of late colonialism". *Social Studies of Science* 40(6): 871-902; Medina-Doménech, Rosa M. (2009) "Scientific technologies of national identity as colonial legacies: Extracting the Spanish nation from Equatorial Guinea". *Social Studies of Science* 39(1): 81-112.

[11] Jiménez-Lucena and Molero-Mesa, "Good birth and good living"; Isabel Jiménez Lucena; Jorge Molero-Mesa, "Problematizando el proceso de (des)medicalización. Mecanismos de sometimiento/autogestión del cuerpo en los medios libertarios españoles del primer tercio del siglo XX". En: Marisa Miranda; Álvaro Girón-Sierra (eds) *Cuerpo, biopolítica y control social: América Latina y Europa en los siglos XIX y XX* (Buenos Aires: Siglo XXI, 2009), pp.69-93; Jorge Molero-Mesa; Isabel Jiménez Lucena, "'Otra manera de ver las cosas'. Microbios, eugenesia y ambientalismo radical en el anarquismo español del siglo XX". In: Gustavo Vallejo; Marisa Miranda (eds.) *Derivas de Darwin. Cultura y política en clave biológica* (Buenos Aires: Siglo XXI, 2011), pp.143-164.

profound critique of bourgeois health improvement approaches and strategies, that is, of the techno-scientific-based capitalist modernity–coloniality where health and disease processes, and thus medical assistance, were utterly industrialized and commercialized. The ensuing process of re-signification of the medical knowledge produced by health professionals at large was crucial within the libertarian, revolutionary strategy of questioning the social, political and cultural establishment. Indeed, the relationship between the unions and the medical professionals was never free of trouble, confrontation and controversy. As can be followed through the pages of the union newspaper *Solidaridad Obrera* (1907–1939, in its first run), intellectual workers were initially excluded from the anarchist union, the National Confederation of Labour (CNT), upon the First International principle that workers should undertake their own emancipation, without the interference of any other class interests. Nevertheless, the aid of intellectuals or professionals was eventually enlisted to defend union interests despite the underlying distrust and subsequent encouragement of self-instruction and mutual teaching that so much characterized the anarchist movement. Aware of the power of knowledge for social transformation, as well as of the importance of resulting interpretations of reality in accordance with class interests, anarcho-syndicalists fostered an extensive knowledge of subjects that concerned the proletariat or that potentially bore a strong social impact[12].

In this context, the relationship of intellectuals and professionals with the CNT in the three decades before the Spanish Civil War went through several and often contradictory phases: from the establishment of the Union of Intellectual Workers and Liberal Professions, which grouped *non-manual* members in a single union and separated them from their respective trade unions in order to avoid their direct control; through their incorporation into the CNT, as a short-term revolutionary solution, where it was necessary to boost the efficacy of the struggle against capital and to prepare and organize society in libertarian terms, owing to the quick expansion of the union (in terms of members and regions covered), the euphoria prompted by the Soviet revolution, and the increasing radicalism against employers' intransigence; to the final split-off of the union, precisely in relation to medical-health practices, as happened on account of the discrepancies regarding a proposal to establish a mutual aid society within the CNT to fight tuberculosis. In this sense, and as reflected in the pages of *Solidaridad Obrera*, it is possible to map the

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[12] Jiménez-Lucena and Molero-Mesa, "Good birth and good living"; Molero-Mesa and Jiménez-Lucena, Isabel, "Simpatía por los manuales". Bohn, "Inclusion and exclusion".

confrontation between the moderate syndicalist sector, which was in favour of the mutual aid society, and the sector closer to the *Federación Anarquista Ibérica* (Iberian Anarchist Federation, FAI), which favoured direct action, meaning that, among other aspects, tuberculosis, just like other social diseases, could only be uprooted by subverting the established order, and that such a project was therefore far from proletarian as it found its breeding ground precisely in the conditions the union wanted to subvert. As a result, the split-off took place between 1931 and 1932, when the moderate syndicalist sector left the confederation and created the *Sindicatos de Oposición* (Opposition Unions), while the mutual aid society project eventually collapsed[13].

This example shows the anarcho-syndicalist strategy against direct, technocratic interference by physicians, as professionals, in the union. However, the economic and health situation of the workers, coupled with the anarchist rejection of charitable assistance, brought about another point of collaboration between the physicians, who were developing their own inclusion strategies, and anarcho-syndicalists: free medical consultations. Without counting the medical enquiries that appeared as questions and answers in the anarchist press, physicians (either union members or sympathizers) offered cheaper or free consultations through discounts linked to coupons that appeared in certain magazines such as *Generación consciente* (1923–1928) or its continuation *Estudios* (1928–1937: see below), through low-priced visits at certain times of the day or, in the case of totally free visits, if the patient met certain conditions, like being unemployed and/or having been abused by the mutual aid societies or insurance companies. However, this kind of relationship was also not devoid of problems, such as suspicion of mercantilism, in part a result of the sustained reciprocal mistrust between physicians and workers. Nevertheless, anarcho-syndicalists saw an opportunity to achieve a balance between *manual* and *non-manual workers* through these collaborations with healthcare experts, which prompted the editors of *Solidaridad Obrera*, even after the change in management and the expulsion of the syndicalist sector, to praise such initiatives and wish for other intellectuals to follow the example[14].

Roughly one decade later, after the Spanish Civil War and the advent of the fascist regime, Franco and his supporters had to establish and consolidate a radically

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[13] Molero-Mesa and Jiménez-Lucena, Isabel, "Simpatía por los manuales".

[14] Molero-Mesa and Jiménez-Lucena, Isabel, "Simpatía por los manuales"; Jiménez-Lucena and Molero-Mesa, "Good birth and good living"; Tabernero, Jiménez-Lucena and Molero-Mesa "La redefinición de la participación".

different socio-political situation. They were in need of social, economic and administrative structures which would allow the survival of the regime after three years of devastating war. They also had pressing political, ideological and cultural needs, at home and abroad. The increasing international isolation and the concurrent, early autarchic articulation of the regime was concurrent with a multidimensional, strong-arm strategy aimed at its building and legitimating in a context where the population had to cope with widespread poverty, starvation and epidemics, in isolation and with a conspicuous shortage of resources[15]. In such a context, the efficient indoctrination of the people was a must, and sprang from the justification of a repressive, unwavering, while apparently giving system, built around the paternalistic figure of the dictator. The regime applied a sweeping social and historical de-contextualization program in order to erase all signs of continuity from the Republican period. This was achieved, among other aspects, through the construction of a socio-political project, national-syndicalism, which structured knowledge management in strictly asymmetrical flows of information, *from one* (the One, Franco) *or a few* (the Fascist Party, the Spanish Military, the Catholic Church) *to the many* (the population at large), and where adherence to the rulers, in political, ideological and moral terms was in practice articulated as subjection and obedience to the experts[16].

Accordingly, Franco's administration regarded medical-health and mass media practices and discourses as (two of the) primary means for the building of such a social, ideological and political scheme. In this regard, one particularly significant characteristic of medical-health practices, discourses and policies was the unavoidable

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[15] Paul Preston, *Franco. A Biography* (New York: Basic Books/Harper Collins, 1994); Jorge Molero-Mesa, "Health and public policy in Spain during the early Francoist regime (1936-1951): the tuberculosis problem". In: Ilana Löwy; John Krige (eds). *Images of Disease: Science, Public Policy and Health in Post-war Europe* (Luxembourg: Office for Official Publications of the European Communities, 2001), pp. 141-161; María Isabel Del Cura; Rafael Huertas, *Alimentación y Enfermedad en Tiempos de Hambre. España, 1937-1947,* (Madrid: CSIC, 2007).

[16] Sheelag M. Ellwood, S. M. (1987) "Spanish newsreels 1943-1973: The image of the Franco regime". *Historical Journal of Film, Radio and Television* 7: 225-238; Jiménez-Lucena, Isabel (1994) "El tifus exantemático en la posguerra española (1939-1943): El uso de una enfermedad colectiva en la legitimación del 'Nuevo Estado'". *Dynamis* 14: 185-198; Rafael Rodríguez-Tranche; Vicente Sánchez-Biosca, *NO-DO, el tiempo y la memoria* (Madrid: Cátedra/Filmoteca Española, 2001); Pablo I. Taibo, *Un cine para un imperio. Películas en la España de Franco* (Madrid: Oberon, 2002); Jiménez-Lucena, Isabel; Ruiz-Somavilla, María José; Castellanos-Guerrero, Jesús (2002) "Un discurso sanitario para un proyecto político. La educación sanitaria en los medios de comunicación de masas durante el primer franquismo". *Asclepio* LIV(1): 201-218; José Enrique Monterde, "El cine de la autarquía (1939-1950)". In: Roman Gubern *et al.* (eds). *Historia del cine español* (Madrid: Cátedra, 2004), pp. 181-238; Medina-Doménech, Rosa M.; Menéndez-Navarro, Alfredo (2005) "Cinematic representations of medical technologies in the Spanish official newsreel, 1943-1970". *Public Understanding of Science* 14: 393-408; Felipe E. Ramírez-Martínez, "Ciencia, tecnología y propaganda: el NO-DO, un instrumento de popularización de la ciencia al servicio del Estado (1943-1957)". In: Javier Ordóñez (ed). *El pensamiento científico en la sociedad actual* (Madrid: MEC, 2006), pp. 253-261; Tabernero, "Cine y procesos de medicalización"; Tabernero, Jiménez-Lucena and Molero-Mesa, "Film, medicine and empire".

direct contact between experts (physicians, institutions) and non-experts (patients), as it necessarily occurs through everyday practice with the purported expert aim of offering immediate solutions (health) to the pressing everyday-life problems (illnesses) of non-expert people. On the other hand, mass media also provided a corresponding kind of contact, as they are technological means through which experts (producers, editors, distributors and institutions as well) offer non-experts (readers, listeners, viewers) multifaceted immediate solutions (information, education, entertainment) to modern life needs[17]. From this perspective, medicine-health and mass media bear a manifest strategic importance from a joint social, economic, political and cultural point of view. The aims, methods and scope of (institutionalized) transmission of expert medical-health knowledge to non-experts are, and were in that context, crucial for the shaping of (social and institutional) power relations. In this sense, the mechanisms of techno-scientific knowledge production, circulation and management are central to the broad-spectrum socio-cultural dynamics of granting and sharing authority, responsibility and values. As a result, and insofar as indoctrination was decisive for the building of the regime, Franco's administration applied an unconcealed vertical and unidirectional model of knowledge management, as described above, in an overtly (and, as we know, tragically) opposed manner to the anarchists' more problematical, questioning strategy that we have advanced. The fascist regime model responded to a will of indoctrination and, with a wider scope, enculturation, precisely on the part of those few experts that lie on one end of the attempted linear process. They aimed at social cohesion, which was ultimately and when possible warranted by the allegedly utilitarian, incommensurable, neutral and inaccessible (for the recipient non-experts) character of both a specific kind of knowledge (in our case, and significantly, scientific-technological, medical-health) and the devices (in our case, media technology) primarily used for its circulation. Hence, under the forcible provisions of the totalitarian regime, yet following a widespread model in western industrial societies, medical-health and media experts would be *the* necessary sources of the abovementioned urgent solutions for the many non-experts' everyday problems and needs[18].

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[17] Tabernero, "Cine y procesos de medicalización"; Tabernero, Jiménez-Lucena and Molero-Mesa, "Film, medicine and empire"; Tabernero, "El proceso salud-enfermedad".

[18] Ellwood, "Spanish newsreels"; Jiménez-Lucena, Ruiz-Somavilla and Castellanos-Guerrero, "Un discurso sanitario para un proyecto político"; Medina-Doménech and Menéndez-Navarro, "Cinematic representations of medical technologies"; Ramírez-Martínez, "Ciencia, tecnología y propaganda"; Tabernero, "Cine y procesos de medicalización"; Tabernero, Jiménez-Lucena and Molero-Mesa, "Film, medicine and empire".

In this context, cinema was deemed by the regime to be an essential means of enculturation. The regime took into account the capacity of this medium to generate diegetic, performative prototypes pertaining to social, political, ideological, and cultural structures[19]. Building on these premises, the analysis of five medical-colonial documentaries produced by Hermic Films in 1940s Spain show the characteristics of the regime's combined use of medical-health and media practices and discourses for its building, justification and legitimation purposes. Three of these documentaries, *Médicos coloniales* (*Colonial physicians*), *Los enfermos de Mikomeseng* (*The sick people from Mikomeseng*) and *Fiebre amarilla* (*Yellow fever*), were directed by Manuel Hernández Sanjuán, co-founder of the production company, in Equatorial Guinea in 1946. These films were part of a governmental request made directly to Hernández Sanjuán by the General Director of Morocco and Colonies, General José Dìaz de Villegas Bustamante; the other two, *Enfermos en Ben-Karrich* (*Sick people at Ben-Karrich*) and *Médicos en Marruecos* (*Physicians in Morocco*), were shot in Morocco in 1949 and directed by Santos Núñez, who had been the scriptwriter for Hernández Sanjuán in Guinea. All of them were a product of the strong linkage of Hermic Films with colonial cinematographic projects[20].

Medical-health practices and discourses were represented in these documentaries not only as a compulsory and unbiased (as scientific-technological) source of certainty, cohesion and power, but as imperative and heroic. It is indeed highly significant that medical-health issues as well as science and technology (resources, ethnology and wildlife) were chief themes in this media project along with other three key organizational foundations for the regime, that is, religion, education and the military. Interestingly, apart from medical-health and film practices and discourses, the films incorporated a third set of practices and discourses, the colonial–imperial, which was equally strategic for the regime.

The colonial context provided the opportunity for an explicit portrayal of the building and management of a specific kind of society through expert-driven and, as

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[19] Kirby, David (2010) "The future is now: Diegetic prototypes and the role of popular films in generating real-world technological development". *Social Studies of Science,* 40(1): 41-70; Jiménez-Lucena, Isabel (2011) "Differences, paradoxes and exclusions regarding abortion. A possible interpretation of A Story of Women and Vera Drake". *Journal of Medicine and Movies,* 7(2): 61-68; Tabernero, Carlos (2006) "L'Audiència-*meca*: ciència, tecnologia i la condició humana en el cinema de Stanley Kubrick i Steven Spielberg". *Mètode* 48: 71-76; Ellwood, "Spanish newsreels"; Rodríguez Tranche and Sánchez Biosca, *NO-DO, el tiempo y la memoria*; Monterde, "El cine de la autarquía"; Medina-Doménech and Menéndez-Navarro, "Cinematic representations of medical technologies"; Tabernero, "Cine y procesos de medicalización"; Tabernero, Jiménez-Lucena and Molero-Mesa, "Film, medicine and empire";.

[20] Tabernero, "Cine y procesos de medicalización"; Tabernero, Jiménez-Lucena and Molero-Mesa, "Film, medicine and empire".

such, purportedly impartial processes of definition, classification, rationalization and disciplining of human clusters. In addition, the combination with the scientific-technological character of documentary filmmaking, that is, of the form simultaneously with the content, turned them into an unconcealed legitimating (indoctrinating, yet again as seemingly objective) device. The articulation of (medical-health and colonial) discourses, together with the representations of spaces, instruments and the (expert and non-expert) people who inhabit and use them, give us an account of the interrelated position of all the actors, practices and discourses involved, i.e., power relations as related to medicalization processes. This includes not only the people (colonizers and colonized) featured in the documentaries, but also the intended audiences (mostly in the mother country) and the filmmakers themselves, thus conveying their impact in the social, political and cultural construction of the regime's identity[21].

Accordingly, the depiction of the social dynamics featured a clear-cut differentiation between medical-health experts and non-experts, which responded unambiguously to a social stratification program where the distinct positions of different human clusters (across race, class and gender) with respect to knowledge production and management practices and discourses were unmistakably defined. Consistent with the unidirectional model, as mentioned above, the few experts, always officials and physicians, and all of them Spanish white men, scrupulously and competently provided the solutions to the everyday sufferings afflicting the many non-experts, certainly patients, that is, the population at large in danger. These were always openly portrayed as captive and submissive to the experts' allegedly objective directives and, by extension, moral and ideological principles (as suggested by the ever-present religious aid and tutelage, mostly by nuns). And they were, as expected, the natives, men, women and children from working-class and peasant families, but also Spanish women and children (particularly in the Moroccan context). The exception to this scheme was the portrayal of male and female natives and white women working as medical-health technicians, i.e., closer to the white male expert

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[21] Tabernero, "Cine y procesos de medicalización"; Tabernero, Jiménez-Lucena and Molero-Mesa, "Film, medicine and empire". Technically speaking, the voice-over narration, identifiable with the dictator, and which was a staple in the regime's compulsory and exclusive official newsreel (*NO-DO*), conveniently put forward a de-contextualized glorification of the new state and its dictator. In addition, the commentary aptly combined technical expressions with colloquial phrases and anecdotes, conveying a reliable definition of an expert authority, practical and unbiased, while steadfast and familiarly paternalistic. And all this articulated within a backdrop of medical technologies and facilities posing as the regime's tools for modernization, efficacy, competence and dependability. See also: Medina-Doménech and Menéndez-Navarro, "Cinematic representations of medical technologies".

sphere, although as subaltern staff and thus always under the necessary supervision of the specialists. Such crossing of the (scientific-medical) knowledge production and management boundary is a constitutive and unambiguous 'excluding–inclusion' strategy in the processes of creation and maintenance of techno-scientifically driven social stratifications[22]. It indeed helps presenting a non-problematic, idealized colonial space, whether in strictly colonial (or post-colonial) settings, or in the bourgeois, capitalist modernity–coloniality so openly contested, as described by the Spanish anarchists in the previous decade.

3. Education and power

Indeed, all these inclusion-exclusion, (de)medicalization processes, as portrayed in the pages of an anarchist union newspaper or in a series of fascist-sponsored films, cannot be fully understood without the associated practices and discourses aiming at the re-signification, one way or the other, of knowledge. One key feature of this research is that we are probing the communication practices involved in the production, distribution, appropriation and consumption of the press and the cinema. Therefore, to the depictions of the complex relationship between experts and non-experts, we must add a communication-based theoretical framework in order to contribute a comprehensive understanding of all the elements involved in these dynamics, in this case, concerning medical-health practices and discourses.

We start from the understanding of science as "a form of communicative action", as well as "a practical activity, located in the routines of everyday life"[23]. This standpoint helps to establish meaningful analytical linkages between science and the media. First, we must take into account the deep embedding of these two sets of practices and discourses in everyday socio-cultural power relations. The appraisal, adoption, use and modification of techno-scientific (medical-health, for our purposes here) and media practices and discourses by all actors, from the generation to the consumption and/or application of knowledge according to individual or collective needs, beliefs, concerns, expectations and attitudes are essential, albeit extremely complex elements in the social and cultural assumptions, workings and tensions that routinely take place in people's everyday lives. Also, from the premise that cultural

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[22] Kusiak, "Instrumentalized rationality"; Medina-Doménech, "Scientific technologies of national identity"; Tabernero, "Cine y procesos de medicalización"; Tabernero, Jiménez-Lucena and Molero-Mesa, "Film, medicine and empire"; Jiménez-Lucena and Molero-Mesa, "Good birth and good living".

[23] Secord, "Knowledge in Transit", p. 655, p. 661. Topham, Jonathan R. (2009). "Focus: Historicizing 'Popular Science'. Introduction". *Isis* 100(2): 310-318.

appropriation and consumption are in fact cultural productions and the above consideration of science as a set of communication practices, it appears reasonable to add practice theory as applied to media in order to attempt an account of the interrelated position of all the key actors (i.e., experts and non-experts, as described above) and circumstances (such as the abovementioned everyday life routines and interactions and the associated embodiments of knowledge, including symbols, objects and spaces) involved with respect to the social, political and cultural implications of the processes of science popularization. An apparently straightforward question about what people do in relation to media in all possible situations and contexts leads directly to the exploration of routine contexts, whether of production, circulation, and/or significantly, appropriation, as particular sites of empirical interest. Furthermore, this combined theoretical framework (science as communication, media as practice) fosters the critical consideration of everyday life scientific-medical and media discourses and practices from the point of view of their deep involvement processes of power, as in inclusion-exclusion dynamics as constituent elements of the habitual processes of action and interaction between people, groups and institutions, and where the nature of authority is regularly and consequentially probed, especially in an increasingly mass-mediated culture[24].

Drawing on all these theoretical elements, we can tackle the problem of education from a quite different point of view, if we take into consideration the multidimensional intersections between techno-scientific knowledge management and mass media. On the one hand, educational venues and institutions, as spaces where knowledge is circulated on a large scale, may be considered as 'mass media'. Conversely, the use and consumption of mass media, which are significantly influential on social, communication and working skills, as well as essential constituents of the social and space-time structure of people's everyday lives, may very well be understood as informal (albeit major) learning spaces, where meaningful processes of generation, circulation and management of knowledge, scientific-medical in our case, occur. Importantly, all actors involved, that is, mass media users (all the way from production to consumption, and in the same way as teachers, students,

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[24] Michel de Certeau, *The Practice of Everyday Life* (Berkeley: University of California Press, 1984); Couldry, "Everyday Life in Cultural Theory", "Theorising Media as Practice"; Topham, "Historicizing 'Popular Science'"; Bräuchler and Postill, *Theorising Media and Practice*; Tabernero, "Cine y procesos de medicalización"; Tabernero, Jiménez-Lucena and Molero-Mesa, "Film, medicine and empire"; Carlos Tabernero, Jordi Sánchez-Navarro, Daniel Aranda and Imma Tubella, "Media practices, connected lives". In: Cardoso, G., Cheong, A., Cole, J. (eds.) *World Wide Internet: Changing Societies, Economies and Cultures* (Macau: University of Macau, 2009), pp. 331-355.

textbook authors and editors, families, etc., in official educational institutions), contribute in one way or another to processes of validation and/or questioning of a particular kind of knowledge and the associated authority systems. Media cannot just be deemed as technical means of manipulation through entertainment, as their appropriation is a dynamic and ultimately productive process of (self-)reflection taking place within the everyday social and cultural structure, where a wide range of assimilations, as well as negotiations and resistances take place[25].

The independent (not associated with the CNT) and prestigious (in libertarian circles) magazine *Estudios* sported a predominantly and overt pedagogical approach since education and culture were deemed an indispensable revolutionary basis. In this spirit, it dealt with a wide-ranging choice of subjects, which in turn were treated by a corresponding wide range of contributors, regardless of their ideological leanings, thus fostering debate. Within this framework, science and medicine were particularly important subjects and sources for argumentation, where medical-health issues were discussed primarily from the perspective of the questioning and re-signification (as we have advanced above) of official discourses and practices and toward the construction of an alternative biopolitics, which did not reject the input of medical professionals. However, the alternative approach was based upon the combined application of (a) neo-Malthusianism, in terms of claiming people's right to self-management of sexuality in relation to population control; (b) eugenics, in environmental terms, where living conditions were paramount (over strictly etiological explanations) to define health and disease in relation to workers' everyday lives; and (c) naturism, in terms of naturist medicine as a basis precisely for the overall re-signification not only of health and disease, but also of the processes involved in their management. The fundamental departure of such an approach from mainstream medical-health management was the spirited encouragement of individual and/or collective self-management of health and disease, as opposed to the submission to public or private institutional interests. As a result, such a pattern of re-signification of science and medicine and of health and disease became an essential

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[25] Thompson, *The Media and Modernity*; Tabernero *et al.*, "Media practices"; Couldry, "Theorising Media as Practice"; de Certeau, *The Practice of Everyday Life*; Tabernero, "Cine y procesos de medicalización"; Tabernero, Jiménez-Lucena and Molero-Mesa, "Film, medicine and empire". Tabernero *et al.*, "Media practices, connected lives".

constituent for the anarchists' questioning strategies of the social, political and cultural establishment[26].

Moreover, such a strong call for people's self-management found its most unequivocal expression in *Estudios*'s medical-health Q&A section (*Preguntas y respuestas*, 1930–1937). Established as a response to the large amount of letters sent by readers concerning primarily medical-health issues (which was one of the main editorial interests of the publication), but also, following the magazine's eclectic publishing approach described above, about many different topics, it was run by a physician, Dr. Roberto Remartínez, a regular contributor to *Estudios*. While abiding by a long-standing tradition of press-mediated direct exchange between readers/consumers and writers/editors[27], and notwithstanding the primary focus on medical-health issues (as directed by incoming letters), Remartínez gradually and purposefully made it a place for the account and discussion of a broad spectrum of subjects, always with the readers' active involvement[28].

The exchange between readers and Remartínez constitutes a case in point of the combined, multidimensional input of experts and non-experts in processes of generation and management of scientific and medical knowledge. Remarkably, it takes place through the multi-layered communication practices associated with the publication and circulation of a magazine, *Estudios*. The eclectic spirit of the magazine was openly tried out through the interaction between Remartínez and his readers. Most questions focused on personal medical-health issues, and covered a wide variety of problems and concerns. However, Remartínez's insistence on the educational aim of the section and the need to address general cultural topics, as well as, significantly, the readers' undeniable will to participate in the construction of knowledge, resulted in a wide-ranging discussion of subjects beyond private health. In this sense, medical-health issues were thus increasingly addressed from the point of view of the connection between people's actual everyday concerns and their wider social,

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[26] Jiménez-Lucena and Molero-Mesa, "Good birth and good living"; Tabernero, Jiménez-Lucena and Molero-Mesa "La redefinición de la participación"; Tabernero, "La sección 'Preguntas y Respuestas'"; Molero-Mesa and Jiménez Lucena, "Otra manera de ver las cosas". Martí i Boscà, José Vicente (2006), "Estudios: educación sexual, arte, ciencia, cultura general". In: *Estudios. Revista Ecléctica*. Faxímil Edicions Digitals <http://www.numerossueltos.com/news/cat/faxdocs/post/faxdoc23/>; Richard Cleminson (2003), "'Science and sympathy' or 'sexual subversion on a human basis'? Anarchists in Spain and the World League for Sexual Reform". *Journal of the History of Sexuality* 12 (1), 110-121; Francisco J. Navarro, *'El paraíso de la razón' La revista Estudios (1928-1937) y el mundo cultural anarquista* (Valencia: Edicions Alfons el Magnànim, 1997).

[27] Robin Kent, *Aunt Agony Advises. Problem Pages through the Ages* (London: W. H. Allen, 1979); Angela Phillis, "Advice columnists". In: Bob Franklin (ed.) *Pulling Newspapers Apart. Analysing Print Journalism* (New York: Routledge, 2008), pp. 97-105.

[28] Tabernero, Jiménez-Lucena and Molero-Mesa "La redefinición de la participación"; Jiménez-Lucena and Molero-Mesa, "Good birth and good living".

ideological and cultural predicaments. And so, the open space for other topics was progressively filled, and questions addressed issues such as naturism, education, history, theosophy, techniques and recipes for the manufacture of drugs, and even the theory of evolution and theoretical physics[29].

In this context, the readers acknowledged, for the most part, the all-out authority of the expert, surely as a private physician, although Remartínez constantly directed readers to the confidential questionnaires that addressed the strict and regular medical consultations; but also as an across-the-board intellectual, given the range of subjects treated. In this sense, the Q&A section played out some of the conflicts described with respect to the complex inclusion and exclusion dynamics regarding intellectuals and professionals, and particularly physicians, in the union, including the suspicion of Remartínez's ultimate mercantilist goal. Nonetheless, and despite Remartínez (and the editorial board) having ultimate decision on what was to be published, a significant amount of questions showed an uncompromising will on the part of the readers to introduce and/or insist on the discussion of certain issues that were fundamental for the anarchist questioning of the bourgeois system. This was particularly important considering the magazine's high print run and its prestige within libertarian circles. All the same, the Q&A exchanges also revealed multidimensional (de)medicalization dynamics, by considering that different degrees of assimilation, but also of questioning and re-signification of socially accepted and officially sanctioned discourses and practices, took place, interestingly involving both the readers' questions and Dr. Remartínez himself[30].

The medical-colonial documentaries made by Manuel Hernández Sanjuán and Santos Núñez in the already fascist Spain lie, as expected, at the opposite end of the anarchists' approach to knowledge management. They did indeed comply efficiently with their enculturation function. Information (the documenting of a distant reality for the intended mother-country audiences), education (the portrayal of the organizational traits of a comprehensive civilizing effort in an apparently non-problematic setting), and entertainment (featuring an exotic and heroic context) were efficiently combined to highlight the allegedly necessary, across-the-board social, political and cultural endeavours of the regime. The weight of medical-health practices and discourses as building and managing tools for the regime was

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[29] Tabernero, Jiménez-Lucena and Molero-Mesa "La redefinición de la participación"; Jiménez-Lucena and Molero-Mesa, "Good birth and good living".

[30] Tabernero, Jiménez-Lucena and Molero-Mesa "La redefinición de la participación".

underlined through the intertwining of the scientific-technological character of both the colonial medical-health activities depicted and the documentary filmmaking, that is, of the form *and* the content. A number of cinematic techniques contributed to the intended indoctrination that this represented: first, the distinctively didactic format through the use, as introduction or for contextualization, of animated graphics and maps, microphotography techniques, and *historical* accounts of the medical-health issues shown, always conveniently devised according to the regime's essentialist aims and asymmetrical information model; and second, the suitable combination of these didactic elements with the entertainment provided by the heroic adventure that was depicted, where medical-health science and technology were portrayed as an all-out spectacle and as a set of commodities ready for everyday consumption. Such didactic spectacle and achievement were made possible precisely through the self-denying, rigorous and outstanding efforts (as explicitly qualified) of experts and officials, whose guiding function thus becomes unquestionable[31].

Bearing this in mind, a two-sided identification effect was projected on Spanish audiences, which were the fundamental target of the regime's legitimating and consolidating needs and efforts: on the one hand, with the white European colonizers, that is, the ruling, civilized Spaniards, or, in other words, significantly with the vertical exercise of power and its utter justification; yet, on the other, with the colonized, for, despite racial and socio-cultural differences, they were also patients, workers, peasants, and women, all desperately needing solutions and information, particularly pertaining to medical-health issues, but also with regard to their situation according to the new regime's intentions and capabilities. In this sense, the filmmakers also played two complementary roles, as colonizers, for, upon arrival, they joined the ruling communities in the colonial settings, but also as colonized, as direct witnesses, while *ad hoc* beneficiaries, and the very first public, largely in awe of the regime's colonial endeavours, for which they offered, in their films, a primary and glorifying interpretation. As a result, the documentaries (that is, cinema) became an essential part of the solution, as a source of evasion, so much needed in post-war Spain (film-going was arguably the most important form of entertainment in that context), but efficiently combined with the information and education goals that completed an overtly vertical model of knowledge management. The movie theatre thus worked as an entertainment-driven science space, devoted, in this case, to

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[31] Tabernero, "Cine y procesos de medicalización"; Tabernero, Jiménez-Lucena and Molero-Mesa, "Film, medicine and empire".

medical-health instruction in connection with crucial social, political, moral and ideological aspects, which the regime pass onto the population through ordinary, everyday communication practices[32].

4. Visibility and participation

The two case studies presented in this paper illustrate the complex dynamics of knowledge management (generation, circulation, appropriation) as articulated through the relationship between two fundamental sets of practices and discourses for the processes of construction and functioning of contemporary societies: medicine-health and mass media. Beyond their particular historical significance, they become, when jointly mulled over, remarkably revealing, owing to their radical opposition in terms of the approaches to knowledge management they represent and also because of the historical continuity provided by the common geo-cultural context (Spain, mostly in the 1930s and 1940s, but arguably projecting throughout at least two thirds of the 20th century) and, therefore, the main characters that is, the Spanish population, experts, non-experts and all categories in between.

Both cases embody the multi-layered, multidimensional character of scientific knowledge management dynamics while confirming the weight of mass media in such processes. They share several important features: medical-health practices and discourses and their social, political and cultural implications in people's everyday lives (individually and collectively) constituted the primary focus; conferring meaning (signification, re-signification) to those practices and discourses, in completely opposite ways; the input from medical-health professionals as necessary technical advisors in these processes was always required; inclusion and exclusion strategies from a combined socio-political and professional perspective, concerning different human groups (including the relationship between professionals and intellectuals with the population at large, as well as comprehensive race, class and gender relations), and across the boundaries of knowledge production and management were significantly at stake; and the key role of medical-health and mass media practices and discourses in the building of a given social, political and cultural organization (whether libertarian or fascist) was explicitly acknowledged, both through content (medical health) and precisely by the very means used (the press, cinema).

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[32] Tabernero, "Cine y procesos de medicalización"; Tabernero, Jiménez-Lucena and Molero-Mesa, "Film, medicine and empire".

All these features revolved around a noticeable effort to make the (individual and/or collective) experience of disease visible. And such an effort shows the complexity of knowledge construction and management processes in terms of the different patterns of participation used in each case. On the one hand, the Q&A section of *Estudios*, by fostering an ever-increasing level of visibility of individual experiences of illness, achieved with the active collaboration and for the ultimate benefit of its readers and the community, unreservedly looked for alternative, bottom-up ways to expose and define diseases in a counter-hegemonic spirit. Conversely, the colonial-medical documentaries produced in the first decade of Franco's regime, by making diseases visible through an overt de-contextualizing strategy (by use of the colonial settings), used an extremely top-down perspective, where individual experiences of illness were obliterated, for the sake of justification and legitimizing of the new socio-political status quo. In both cases, the definition of sicknesses was pursued, with all the metaphorical charge, even though in quite opposite terms, that is, as applied to capitalism by the former or to anarchism and communism by the latter.

Moreover, and notwithstanding individual and collective sets of interests, in the first case, physicians (Dr Remartínez as administrator of the Q&A section and the many other physicians that contributed regularly to *Estudios* and other anarchist publications) worked together with readers in these processes through a lively exchange that involved not only the abovementioned contributions, but also direct contact through the magazine- and the union-sponsored actual medical consultations, made available for workers and their families, and in particularly favourable conditions for those having difficulty to make ends meet. The aim was to improve the overall (physical, social, cultural, moral) living conditions of the population. In the second case, however, physicians joined the ranks of the necessary technicians who had to collaborate with the regime's structural keystones (dictator, fascist party, military, Catholic Church) in order to control the population (physically, yet, by extension, also at the social, moral, ideological and cultural levels), with the aim of building and consolidating that regime.

And finally, and importantly, all these processes were developed through media-related communication practices, from the mechanisms of production of knowledge, to its appropriation and consumption, whether by acquiring, reading, sharing and contributing to a publication, or by going to the movies, in both cases being ways to cope, or to help cope with far-from-easy predicaments. The different

aims, scopes and strategies surely yielded different results, although in both cases the construction of scientific-medical knowledge transcended the limits of the traditional, institutional, public or private, spaces of knowledge production, with their discourses and practices.