

Scientific capital in public health: an analysis inspired by *Homo academicus* and its sources¹

Capitais científicos em saúde coletiva: proposta de análise inspirada nas fontes utilizadas na obra *Homo academicus*

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Abstract

A social space for the production of knowledge and practices, public health (PH) is recognized by its researchers as a “field,” in accordance with Pierre Bourdieu’s basilar definition. The scientific field is a social microcosm with its own laws, in which the agents and institutions that produce, reproduce and disseminate science are inscribed. Based on Bourdieu’s work *Homo academicus*, this essay proposes a set of indicators to compose an analysis matrix for the distribution of prestige capital, notoriety, and academic power in the Brazilian PH scientific field. These indicators were adapted to the nationally available data, so as to ensure the feasibility of their application. We made use of official documents that define the desirable productivity criteria for the performance of permanent professors in graduate courses and the eligibility criteria for research productivity scholarships. The proposed matrix allows for a mapping of capital distribution among researchers, according to their field or institution of origin. Such an analytical exercise on the distribution of political capital, prestige and notoriety in the PH scientific field helps us better understand the field’s dynamics when it comes to the production of academic distinction. This kind of analysis invites us, in Bourdieu’s words, to a “collective self-analysis.”

Keywords: Public Health; Scientific Field; Scientific Capital.

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¹ This research was conducted with the support of the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) (Process 307694/2015-1) and also with the support of the Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro (Faperj).

Resumo

Espaço social de produção de saberes e práticas, a saúde coletiva (SC) é reconhecida por seus estudiosos como um campo, a partir da acepção de Pierre Bourdieu. O campo científico é um microcosmo social dotado de leis próprias, em que se inserem os agentes e as instituições que produzem/reproduzem/difundem a ciência. Este ensaio visa propor, a partir da obra *Homo academicus*, de Bourdieu, um conjunto de indicadores para uma matriz de análise da distribuição de capitais de prestígio, notoriedade e poder universitário no campo científico da SC brasileira. Adaptamos os indicadores levando em conta os dados disponíveis, de modo a garantir sua viabilidade de aplicação. Utilizamos documentos oficiais que definem critérios de produtividade desejáveis para o desempenho de docentes permanentes de programas de pós-graduação e critérios de elegibilidade para a obtenção de bolsas de produtividade em pesquisa. A matriz apresentada permite um mapeamento da distribuição de capitais entre os diferentes pesquisadores, segundo sua origem disciplinar ou institucional. O exercício analítico sobre o campo da SC a partir da distribuição de capitais políticos, prestígio e notoriedade nos ajuda a conhecer melhor suas dinâmicas de produção de distinção. Empreender esse tipo de análise nos convida, nos dizeres de Bourdieu, a uma “autoanálise coletiva”. **Palavras-chave:** Saúde Coletiva; Campo Científico; Capitais Científicos.

Introduction

Public health (PH), due to its history, socio-political engagement, and ambitions for theoretical-explanatory production as well as social and health transformation, was characterized by Nunes (1994, p. 16, our translation) as a “current of thought, social movement and theoretical practice.” Although strongly linked to its academic origin (Loyola, 2012), PH is not confined to scientific production, political-institutional action or social activism. Rather, it expands itself by way of the tensions and dialogues it establishes towards these agents and agencies, which provide the elements of PH’s identity. PH has a strong scientific component, marked by vigorous academic production and institutionalized by means of undergraduate and graduate programs spread throughout the country.

Due to the complexity of its object; the conformation between distinct disciplinary, interdisciplinary and transdisciplinary arrangements (often competitive); the disputes between its agents for political and scientific capital, and the relative autonomy it possesses, PH is recognized by many of its scholars (Bosi, 2012; Luz, 2005; Nunes, 2005; Nunes et al., 2010) as a genuine field, befitting of Pierre Bourdieu’s theoretical notion of scientific field (1983, 1987; Bourdieu; Wacquant, 2005).

The concept of field plays a crucial role in Bourdieu’s work, whose analysis seeks to overcome the dichotomy between an objectivist sociology of material structures and the exclusively phenomenological-constructivist reading of cognitive forms. The author seeks to encompass *both* in an interpretation that combines the subjects’ social action, the structures configuring the social universe, and their mechanisms of reproduction or transformation (Bourdieu; Wacquant, 2005; Wacquant, 2013).

Fields designate objective and historical relations between social positions supported by different forms of power, always in close relationship with the respective spheres of social life (economic, political, aesthetic, and intellectual). Each field (economic, artistic, scientific, religious, etc.) will unequally make use of its own capital, the ownership of which allows access to specific advantages. In other words,

the concept of field designates a social microcosm endowed with its own laws, thus presenting a specific structure and a certain degree of autonomy in relation to other fields. Its agents compete with each other for the capital of that field and for the definition of its forms of maintenance, hierarchies of authority and respective “conversion rates.” That is, these agents compete for the prerogative of modifying the relative weights assigned to the criteria that support such hierarchical ordering (Bourdieu; Wacquant, 2005). Intersubjective relations between agents in this field are mediated by models of perception and mental structures, or *habitus* (Bourdieu, 1990). *Habitus* becomes engrained by means of different socialization processes, structured by the field in question. It is a system of durable and socially constituted dispositions, that is, a system determined by the power structure that underpins a field. This power structure guides and provides meaning to actions and representations, defining the underlying principle for the field’s practice. The notion of habitus thus relates to the mediation between social structures and individual practices; it is the product of a gradual intellectual and corporal inculcation performed by institutions and agents recognized as competent for such work (Bourdieu; Chartier, 2012).

By invoking such a framework in PH, ones must accept the theoretical implications of its adoption. One must also recognize that this arrangement of positions is also influenced by relationships of domination, subordination and homology in regards to other positions (internal or external to the field), which translate and redefine previously inherited or acquired capital (whether economic, political, cultural or educational). The unequal distribution of this capital among agents contributes for access to specific advantages that are considered important to the field (Bourdieu, 2013).

Thus, by understanding PH as a scientific field, we recognize it as place of competitive play, constituted as a system of objective relations between positions of power. The distribution structure of scientific capital defines each participant’s strategies and objective possibilities. Their dispute is for the monopoly of scientific authority, comprised of technical capacity and social power as two inextricable dimensions. Such a definition departs

from the notion of scientific community, as a neutral field in which purely academic disputes take place. The monopoly of scientific competence is hardly a purely technical matter: it relies on a clear articulation of objective relations, on maintaining positions in the established hierarchies, and on knowing how to manage academically dominant ways of thinking, acting, and behaving. Thus, what is peculiar in the analysis of the scientific field is that its political dimension cannot be detached from its intellectual dimension. Scientific conceptions will be favorable to those who have the power to impose them - a trait that endows them with even more power (funding, recognition, prestige, etc.). In this line of analysis, all scientific practices, even apparently disinterested ones, are linked to the acquisition of scientific authority. They constitute investment strategies geared towards obtaining scientific profit, which can only be obtained from recognition by peers or competitors (Bourdieu, 1983, 2004).

The relationship between PH’s main disciplinary subfields (epidemiology - EPI; social and human sciences - SHS; and policy, planning and management - PPM) and their agents is marked by alternating cooperation, alliances, and competition. There is, however, an unquestionable hegemony of epidemiology in educational spaces. This is reflected in the higher number of EPI researchers teaching in graduate programs (Iriart et al., 2015); greater offer of EPI courses in graduate programs (Minayo, 2010; Nunes et al., 2010); greater output of EPI scientific articles (Camargo Junior et al., 2010); the distribution of distinction and prestige symbols to epidemiologists, such as the productivity grants of the National Council for Scientific and Technological Development (CNPq) (Barata; Goldbaum, 2003); as well as in the expressive participation of epidemiologists in the editor bodies of national scientific journals (Loyola, 2008). In regards to the political sphere, one can also point to the outstanding participation of epidemiologists in agencies for the promotion and regulation of the state’s scientific policies, in CNPq’s advisory committees, in the field’s coordination, and in the evaluation committees of the Coordination for the Improvement of Higher Education Personnel (Capes)

(Loyola, 2008). There is evidence, therefore, of a differentiated accumulation of scientific capital in the field (be it a 'pure,' intellectual capital, or a political capital).

Such dynamics of hegemony demarcation can be understood by looking at the historical conformation of power relations between the different PH subfields. According to Loyola (2008) and Nunes (1992), the historical Latin American sanitary movement in the 1970-1980s gave rise to an ethical and scientific commitment to the improvement of the state and the consolidation of technical, managerial and political mechanisms for fulfilling the universal right to health. Until the 1990s, this agenda ensured a position of leadership for the subfield of policy, planning and management.

Epidemiology's dominance became evident in the 1990s, with the institutionalization of standardized evaluation parameters for programs and professionals in the field, in a context of state policies geared towards administrative reform and the advancement of Brazilian scientific production (Nunes et al., 2010). Such evaluation processes, whether applied to graduate programs under Capes leadership (2013, 2016) or aimed at evaluating the excellence of professionals under advisement by the CNPq (2017), are ubiquitously recognized as necessary for the maturity and development of Brazilian scientific production and the PH field. However, they lead to the crystallization of disparities within each PH subfield when it comes to productivity evaluation forms and the attribution of scientific merit.

In the past two decades, several phenomena have allowed for an undeniable accumulation of scientific capital by actors of the epidemiology subfield. Examples are the primacy of scientific articles over other academic products, the greater appreciation of biomedical journals due to their high bibliometric impacts, the greater connectivity between authors in collaborative networks for the authorship of articles, and the greater appreciation for the internationalization of publications (Camargo Junior et al., 2010; Luz, 2009).

This essay's frame of reference lies in PH's scientific component, i.e., the relationships according to which its scientific capital is produced

and distributed. Thus, this article proposes a reading of Pierre Bourdieu's (2013) *Homo academicus* (HA) and its sources, in order to point out the markers of some prestige, notoriety and university-power forms of capital that may be useful for analyzing the attribution of distinction in the Brazilian PH scientific field.

Our theoretical and methodological trajectory

This essay's development went through a few intertwining steps. Its starting point was a study group linked to the social-sciences study *Conformação do capital científico e a construção do habitus* (Conformation of scientific capital and the construction of the *habitus*), a CNPq-sponsored project. The study group was conducted within the scope of the graduate course in which the authors work, and was coordinated by them. Lasting two semesters, its overarching goal was to analyze the history and conformation of the social and human sciences in health (SHSH) subfield, based on a dialogue with Pierre Bourdieu's work, in particular the texts *Homo academicus*, *Les usages sociaux de la science*, and *Intelectuales, política y poder*, as well as the reading of Bourdieu's commentators. Initially, the group brought together five researchers with different-level backgrounds in social sciences (master's degree and PhD holders).

The indicators of scientific capital presented here were based on the markers proposed in HA (Bourdieu, 2013), adjusted to the context of the PH field. At the same time, we proceeded to collect official documents pertaining evaluative processes of researchers and graduate programs. Desirable productivity criteria for permanent professors of PH graduate programs and CNPq eligibility criteria for obtaining research productivity scholarships were identified in Capes documents (Capes, 2016; CNPq, 2017).

The indicators were adapted to the national reality, with readily available data being prioritized, in order to ensure their viability in future applications. Thus, we have only included information accessible from Lattes Platform curricula, recognizing that these are data of an

'autobiographical practice' (Nascimento; Nunes, 2014), and that the filling in of the curricula is influenced by evaluation criteria used when awarding points to research programs and researchers. While, on the one hand, we recognize that there is a tendency to register only what is deemed relevant (Montagner; Montagner; Hoehne, 2009), this does not detract from the value and good faith of this instrument, which is crucial for the evaluation of careers and graduate programs.

Categories of capital and methodological paths in *Homo academicus*

HA is part of a set of works on the scientific field by Bourdieu. In 1975, Bourdieu publishes an article entitled "The specificity of the scientific field and the social conditions of the progress of reason," giving visibility to this theme in his roster of studies; in 1984, he publishes HA; in 1989, a work by the title of *The State Nobility* and the meaningful subtitle of *Elite Schools in the Field of Power*, pointing out the role of certain schools in the production of agents of power. In 1997, he publishes his famous conference in the Institut National de la Recherche Agronomique, titled *Les usages sociaux de la science* (The social uses of science). In 2001, *Science of Science and Reflexivity* is published, a compilation of classes taught from 2000 to 2001 at the Collège de France. In other publications or in interviews, Bourdieu returns countless times to the theme of the scientific field (Champagne, 2004). However, only in HA can we find a presentation of the methodological pathways and empirical sources used for analyzing the university environment.

Bourdieu's object of study in HA is the French university. The work resulted from extensive research, beginning in the May 1968 university crisis and ending in the 1980s. At the time, it provoked a vigorous debate in the French scientific field. However, HA is rarely cited by Brazilian academic researchers (its first Portuguese version is from 2011). The book features five chapters ("A 'book for burning?"; "The conflict of the faculties"; "Types of capital and forms of power"; "The defense of

the corps and the break in equilibrium"; and "The critical moment"), together with about 40 pages of appendices containing methodological notes. Some editions also include an afterword entitled "Twenty Years Later," written in 1987.

The text deals with the changes and permanences experienced by the French university field in the 1960s. The context to which the book refers is marked by agendas for the expansion of university access. In this context, the increase of the student body led to demands of expansion and more permeability on the part of the professorial body. Thus, new teachers were able to ingress without meeting all the previously established criteria. Changes in the form of admission would lead to a new, mixed and plural, professorial body. This led to what the author called a "break in equilibrium." Two coexisting admission systems eventually resulted in two categories of teachers, linked to their respective groups of interest. These contradictory relationships - whose dynamic was linked to career laws - made themselves felt in "disruptive events" or "crises" such as internal elections and the May 1968 movement. In this scenario, Bourdieu analyzes the ways of acquiring, distributing and converting different forms of scientific power capital, as well as the different strategies for maintaining the "rules of the game" in the distribution of academic positions. This would enable the "domination of other positions and their holders," as well as the domination of mechanisms for accessing the teachers' body, such as examiner's boards and advisory committees.

Bourdieu's analysis shows how strategies of domination have a knack for merging with the structures that enable them, in the same way the power of older teachers over younger ones finds the acquiescence of the latter, who conform and accept that they have to "play the competitive game." The criteria for the selection of teaching staff also contributes to inculcate into teachers an intense and durable disposition to recognize the hierarchies and values of the professorial body. According to Bourdieu, the capital shaping the symbolic power central to the university field goes through "critical moments," marked by ruptures and permanences involving its modes of production and reproduction.

Forms of capital

In examining the university field, Bourdieu analyzes scientific capital's peculiar form of attribution, presupposing a complicity between those who distribute it and those who receive it. It is worth recalling that university actors are simultaneously peers, judges, competitors and users of each other's products, a specific feature of the scientific field. As argued by Bourdieu (2004, p. 27, our translation),

This [scientific] capital, an entirely particular kind of capital, relies on the recognition of a competence which, beyond its effects, provides authority and helps define not only the rules of the game but also its regularities, [i.e.,] the laws according to which, in this game, profits shall be distributed, that make it important or not to write about a given subject, which is [seen as] brilliant or *démodé*, and [the laws that say] it is more valuable to publish in the *American Journal* of such and such than in the *Revue Française* of this and that.

Bourdieu argues that the scientific field has two forms of power that correspond to two kinds of scientific capital, namely: (1) political-power, institutionalized capital; and (2) "pure" scientific capital. The first type of capital is a temporal (political), institutional and institutionalized form of power, i.e., it is linked to important positions held in scientific institutions during a given period. The second type of capital is characterized by the specificity of its power, a "personal prestige" that relies on "recognition" by peers. These two scientific capitals have their own rules of "accumulation" and "transmission." Political-power capital is acquired by means of specific political strategies and characterized by its provision of "time" (towards participation in examiner boards, commissions, committees, scientific conferences, ceremonies, meetings and so on). This is the kind of capital one requires in order to carry out a political-administrative career. "Pure" scientific capital, on the other hand, is acquired on the basis of scientific contributions, expressed, for example, as publications in prestigious journals. In regards to its forms of transmission, institutionalized scientific

capital resembles any other bureaucratic capital. "Pure" scientific capital is often represented as mostly derived from a person's personal talents. It entails, however, a set of devices to maintain a clientele and regulate the criteria for entry in a field. According to the author, the simultaneous accumulation of the two kinds of capital would be too difficult of an undertaking.

Inherited cultural capitals play a decisive role in the accumulation of scientific capital, due to the unequal distribution of scientific prestige among faculties and even within each faculty. This analysis of the French scientific field and its two major forms of scientific and political-power distribution thus points to a separation between administrative and/or political careers and (the more prestigious) scientific research careers. Such a logic does not always lead to the conversion of political power into scientific power. This opposition is inscribed in the university field's very structure. This structure is the locus for a confrontation between the principles of competence legitimization: a temporal and political principle, which would manifest itself in the university field's dependence towards the power field, and a "pure" scientific principle, which would rely on the autonomy of the scientific and intellectual order.

Such a composition, thus, expresses the structure of the scientific field, clearly observable when one investigates the distribution of scientific capital among the field's agents at any given moment. As Bourdieu points out, structure is first of all a dynamic, shaped by relations between subjects and characterized by the volume of capital held by each agent in proportion to their overall weight. University structures are anchored in active relationships, the result of the accumulation of power and prestige. Control of the rules of capital distribution allows certain agents to amass power and prestige, reinforcing their position in the field.

There are several possibilities for maintaining and reaffirming the accumulated positions of power. For instance, dominant researchers can define which objects of study are seen as important, make use of career-oriented graduate students, be present at selection or scholarship boards, among others. There are, of course, struggles around this objective structure: either to conserve it or to transform it;

even the rules of the game can be questioned. Here the role of *habitus* is crucial, for, in this process of inculcation, the rules of the university game are transmitted, incorporated, and justified. The mastery of this academic rationality is also an incorporated form of capital. It teaches how one should behave and act, which allows for some profit to be obtained out of capital-distribution rules.

Homo academicus' methodological course

Here, we discuss HA's methods for research variable selection and use. This assumes HA as a reference source of empirical methods for identifying the different forms of scientific capital.

Since data on the academic career of college professors were not available at a central location, Bourdieu and his team drew on a mix of methods to accomplish a so-called college professors' prosopography. This prosopography made use of a variety of written sources (journals, annals and yearbooks featuring teachers' curricula, biographical archives of the library of the city of Paris, the *Who is who in France* document, the social sciences citation index, the component listings of the Higher Council of Education - which belongs to the Council of State -, records of inspections and finances, lists of examiner boards and tendering processes as well as medals awarded by the Centre National de la Recherche Scientifique (CNRS), Fulbright scholarships for study abroad, catalogs of books, newspapers and popular magazines, among others), as well as in-depth or telephone interviews. With this public information in hand, Bourdieu and his collaborators built a set of indicators to analyze the distribution of the different forms of scientific capital. These indicators combine, for example, the conditions of access to occupied positions or, as the author calls it, the determinants of *habitus* formation and school success, namely: inherited economic capital and cultural capital; school determinants; university-power capital; scientific-power capital; scientific-prestige capital; and intellectual-notoriety capital.

For Bourdieu, the university field is a place of dispute between two competing "principles of

legitimation:" one owing to the field of power (related to differences of social origin) and another "founded on the autonomy of scientific and intellectual order." Using the method of "analysis of correspondence," Bourdieu presents readers with variables concerning social origin which, according to the author, are useful for analyzing agents' degree of academic accomplishment.

At first, HA's research on the distribution of capital was based on a statistical analysis applied to a random sample of professors from different Parisian colleges. In presenting the data, Bourdieu grouped faculties into what he considered major administrative divisions: medicine, law, arts, and sciences. The sample was comprised of 405 university professors, including 45% to 55% of the faculties' full professors (year 1967). Each professor was attributed a variable pertaining the accumulation of the distinct forms of capital.

After associating each type of capital and its respective variables, the ones that were not applicable to all faculties were discarded. Thus, each subfield was also associated with specific indicators. After the percentage distribution of the variables according to the number of full professors of each faculty, Bourdieu proceeded to carry out the analysis of correspondence. In this line of thought, the position of an agent in the institution would be dependent, on one hand, on whether they possess an attribute. On the other hand, observing this agent's position would also contribute to a characterizing how the institution itself was positioned in the university field. The analysis of correspondences would allow for a description of the circular-causality logic mediating the relationships between different positions, and of the mutual dispositions in the relationship between *habitus* and field. In other words, agents entering a particular institution are produced by and for it.

While at first Bourdieu dealt with data on full professors belonging to these four major areas, aiming to reveal the distribution of capital in French university life, later on the author discusses the different species of capital and the forms of power associated with them, relying solely on data concerning professors of arts and humanities.

Scientific capital indicators applicable to the field of public health

An analysis of the PH scientific field would require a broadened investigative course. Bourdieu makes methodological suggestions on how to examine a field, and the scientific field in particular. Generally speaking, he indicates that such an examination must articulate three moments. First, one has to analyze a specific field in its relationship to the broader, external field of economic and political power. Second, one must create a map of the objective structure of the positions occupied by each agent or institution in the dispute for that field's capital. Third, one must analyze agents' *habitus*. Thus, the objective dispositions of the field (i.e., the structured system of practices that define its distribution of capital) and the dispositions of agents should be dealt with in combination (Bourdieu, 2004).

The analysis of the functioning and structure of a scientific field should also consider the position of each discipline within the hierarchical set of scientific disciplines that make up that field, in regards to the positions of different producers and other agents in the field's hierarchy of disciplines (Bourdieu, 1987). These methodological notes appear useful for thinking about the different subfields that make up public health (epidemiology, social and human sciences, and planning and management). Following the relational point of view advocated by the praxiological perspective adopted here, we recognize that it would also be necessary to correlate the process of *habitus* production with the objective relations underlying the practice of agents and institutions. These objective relations define the

hierarchy and distribution of the field's capital and the associations between this scientific field and the wider field of power (Bourdieu; Wacquant, 2005). The analysis of the structure according to which the distribution of capital takes place, together with the examination of the perception models and mental structures that are inculcated by each field's socialization processes (i.e., *habitus*) and social practices is an important analytical exercise for a broad understanding of the PH field (Bourdieu, 1987, 2004).

The purpose of this paper was to build a matrix of indicators for the analysis of scientific capital distribution in PH. This is one of the strategic steps towards an understanding of the field. The following matrix seeks to point out relationships between the forms of capital stemming from a previous social position (i.e., inherited or acquired capital, educational capital and political-economic capital) and scientific capital. Scientific capital, aimed at producing a symbolic capital of recognition and distinction, are presented in item 2 of Table 1. However, we understand that these forms of capital have a historicity, are not timeless, and act to translate the power relations established among various scientific agents (Bourdieu, 2001, 2009).

A series of attributes, accomplishments, and positions are associated with each type of scientific capital; these would be distinction markers able to establish one's position in the scientific field. Thus, Chart 1 attempts to set a dialogue between the indicators suggested by Bourdieu in HA and specific indicators we thought would be useful for describing the Brazilian PH scientific field (Capes, 2016; CNPq, 2017).

Chart 1 – Capital indicators (scientific field in general vs. the Brazilian PH scientific field)

Proposed by Bourdieu in <i>Homo academicus</i>	Adaptation to national and public-health forms of scientific capital
I – Capitals of social origin	
Inherited or previously acquired cultural capital	
<ul style="list-style-type: none"> - Gender - Year of birth - Marital status - Number of children - Place of birth - Neighborhood of residence - Family religion - Father's profession 	<ul style="list-style-type: none"> - Gender - Degree (bachelor's degree, licentiate's degree) and year of graduation

continues...

Chart 1 – Continuation

Proposed by Bourdieu in <i>Homo academicus</i>		Adaptation to national and public-health forms of scientific capital
I – Capitals of social origin		
Inherited or previously acquired cultural capital		
<ul style="list-style-type: none"> - Honorary distinction - Passage by a large school - Degree (bachelor's degree, licentiate degree) and year of graduation - Double bachelor's degree or licentiate's degree 		
Educational capital		
<ul style="list-style-type: none"> - Secondary education school (public or private) - Lyceum - College studies - Studies abroad - Means of entry: general-examination board or as a laureate 	<ul style="list-style-type: none"> - Undergraduate school (public or private) - Graduate course university - PhD - Studies abroad - Languages 	
Political capital or economic capital (external)		
<ul style="list-style-type: none"> - Participation in ministerial cabinet (advisor, consultant) - Participation in public bodies - Participation in economic council 	<ul style="list-style-type: none"> - Cabinet or consulting position in a Ministry - Public management positions - International consulting 	
II – (Pure) scientific capital: scientific prestige or intellectual notoriety		
Scientific-prestige capital		
<ul style="list-style-type: none"> - Nominations and participation in CNRS committees - CNRS laboratory director - Teaching in intellectual schools (prestigious higher education schools) - Participation in international colloquiums - Membership of foreign institutions - CNRS medals - Translations of works - Index citations - Scholarships and research trips abroad - Participation in scientific missions and congresses - Published articles (journals of article publication – considering the hierarchy of book collections and journals) - Thesis advisor 	<ul style="list-style-type: none"> - Participation in CNPq Advisory Committee - Director of CNPq-accredited research laboratory - Participation in international colloquiums - Membership of foreign institutions - Awards - Translations of works - ISI, SciELO, and Scopus citations - Scholarships and research trips abroad - CNPq productivity scholarship - Participation in international scientific cooperation agreements - Participation in conferences as a lecturer - Inaugural class lecturer - Publication in the highest percentile of journals (articles published in A1 and A2 journals; chapters and books published in renowned academic or commercial publishers) - Participation as a permanent professor in graduate programs with a PhD program at least 5 years old - Advisor of dissertations and theses - Editor of a scientific journal 	
Intellectual-notoriety capital		
<ul style="list-style-type: none"> - Paperback publishing - Books in large collections - Articles in <i>Le Monde</i> or other prestigious newspapers - Articles in intellectual magazines - Participation in TV shows 	<ul style="list-style-type: none"> - Books in popular-science collections - Books in large collections - Articles in prestigious newspapers - Articles in intellectual magazines - Participation in TV shows 	
University power		
<ul style="list-style-type: none"> - Participation in university advisory committee - Academic ovations - Deanship - Experience as a director of an institute or as director of the <i>Unité de Enseignement et de Recherche</i> - Experience as a member of the academy (of medicine, fine arts etc.) - Experience as a member in the professorship board of examiners of the <i>École Normale Supérieure</i> - Participation in a scientific journal committee 	<ul style="list-style-type: none"> - Deanship/Cathedratic professor - Experience in the direction of an institute, as a prorector or rector - Coordination of a graduate program in PH - Participation in professorship examiner's board - Participation in a scientific journal committee - Participation in Capes committees for program evaluation - Coordination of committee or work group of the <i>Associação Brasileira de Saúde Coletiva</i> (Brazilian Association of Public Health) 	

Sources: Bourdieu (2013); *Edital de Bolsas de Produtividade em Pesquisa (Chamada CNPq n 12/2017)*

In respect to forms of capital derived from inheritance and social origin, variables such as father's profession, place of birth, and neighborhood of residence were used by Bourdieu to find out the main social determinants of access to the field's positions. Adherence to moral norms and status was mediated in HA by the variables religion, marital status, and number of children. Our study, on the other hand, only employed variables whose data could be extracted from the Lattes curriculum platform.

In Bourdieu's original matrix, educational capital includes variables that represent the researcher's academic path during secondary studies. In the Brazilian case, these data would be obtainable only by direct consultation with academics. Thus, we adopted variables that strictly concerned the mapping of an academic's university trajectory from undergraduate to PhD. The mastery of languages was also included, as a relevant marker of educational capital that has a bearing on academic distinction.

Political or economic-power forms of capital - which point to forms of power external to the scientific field but contribute to one's distinction - were adapted to PH operating conditions. This led to the creation of markers related to public-policy positions and to influence-bearing linkages to the Ministry of Health, as well as health consultancy positions in international or transnational institutions.

However, our analysis shows that most of the indicators of scientific-prestige capital, originally suggested for the French scientific field, maintain reasonable adequacy to the Brazilian reality. Among those indicators are: citations, publications' status, direction or participation in the commissions and committees of federal research-promotion agencies, scholarships and research trips abroad, international recognition, and thesis advisement. Moreover, our matrix includes Capes' up-to-date cutoff points for elevated-distinction scientific journals (A1 and A2 Qualis strata), which are replicated by CNPq. It also contemplates the criteria for belonging to permanent faculty in graduate programs (Capes, 2016; CNPq, 2017).

Regarding intellectual-notoriety capital, we found no Brazilian equivalent to the large collections

of books of the French academic universe. Also, due to the difficulty of mapping these manifestations, we opted not to include researchers' texts and opinions disseminated via social networks.

University-power capital was adapted to the internal power relations of universities, and also to the agencies that establish criteria or guidelines for the field's practice but do not necessarily require its members to possess large amounts of previous scientific capital. Political-managerial spaces are spaces that retain the strategic power to control the entry of new members into a field, or to assess hierarchy criteria for researchers or research programs (e.g., selection and evaluation boards). It should be noted that participation in scientific publishing is restricted here to advisory committees, linked to the university administration supporting the journal and not to scientific publishing (which is present in scientific-prestige capital). We opted not to include political dispositions in a broad sense (participation in colloquiums, signature of various petitions or other demonstrations of a participant's public positions on general matters). Our understanding was that mapping these dispositions would be almost impossible in the context of empirical research, given the constant internet dissemination of such documents.

We must acknowledge that there are obvious differences between the French scientific field, broadly represented in the university institution studied by Bourdieu, and the heterogeneous institutional disposition of the PH field. The latter is a particular scientific field, with its own career paths and organizational forms. The structuring of the PH scientific field also bears some differences in respect to the overall context of Brazilian higher education. PH research and teaching is predominantly conducted by public universities (and not faculties or university centers). This is a departure from Brazil's university field as a whole, where private institutions predominate (86%) and universities are minority (Balachevsky, 2005). In Brazil, academic careers in educational institutions restricted to undergraduate education are quite different from academic careers in institutions with graduate courses (GCs). The institutionalization of graduate courses and its incorporation, starting in

the 1970s, to an overarching project for associating science and technology with the country's economic development, points to differentiated mechanisms of career-distinction attribution in GCs.

As explained by Balbachevsky (2005), investment funds were created as early as in 1969 and 1971 (the National Fund for Scientific Development and the FINEP, respectively); in 1975, an up-to-that-point modest National Research Council was reformed and expanded to become the National Council for Scientific and Technological Development (CNPq). Since investments in graduate education were not attractive to the private sector, it was up to the universities to develop it. The main portion of the funding, however, was earmarked for the most competitive researchers, rather than the institutions themselves. From then on, this dual model gained in strength. Research and investments became concentrated in graduate programs, and the undergraduate system alone was assigned the task of educational reproduction. These investments ensured the growth of GCs, followed by the standardization of quality requirements. In 1976, Capes was assigned to this latter task, which led to the construction of a peer review methodology. Since then, professors' evaluative standards have been focused on performance criteria. Accused of giving in to the pressures by the courses it was supposed to evaluate impartially, awarding excessively high scores to many programs, Capes overhauled its entire evaluation process in 1998, developing indicators and rules to be applied rigidly and uniformly to all existing programs. Many of these criteria and evaluative forms are still applied to this day. One of the many and persistent consequences of this evaluative model was that it favored

a clear connection between performance and success: the better the evaluation achieved by the program, the greater the likelihood of the program and its researchers gaining support in the form of scholarships, research funding, and infrastructure. (Balbachevsky, 2005, p. 287, our translation)

This connection is reinforced by the CNPq criteria for attributing research career distinctions. The productivity scholarship, an

important capital of the national scientific field, requires other, previously accumulated prestige forms of capital. The accumulation of this type of capital is enhanced by belonging to a well-evaluated graduate program.

Final considerations

In this article, we attempted to use *Homo academicus* and its sources to carry out a reflection on the prestige, notoriety and university-power forms of capital, especially in respect to their potential significance for the attribution of distinction in the scientific field of Brazilian PH.

The proposed matrix is a procedural tool. It does not provide, for example, an understanding of the rules according to which a certain criterion is constituted or chosen as a relevant capital for its field. The historical context, as well as the practice of agencies involved in these definitions, are fundamental for understanding this roster of capital forms and its hierarchies. On the other hand, the matrix enables a mapping of the distribution of capital among different researchers, according to their disciplinary or institutional origin, focusing on the present or on a given period in the past. We believe that the possession of certain forms of capital leads to the acquisition of others, in an accumulation 'spiral.' Thus, the prestige of having many publications in high-impact international journals or belonging to a well-evaluated graduate program may allow an academic, for example, to quickly snatch a productivity scholarship, rising within his/her field's hierarchical structure. This in turn may result in a nomination for the membership of committees that define research-support policies, the distribution of scholarships, and other forms of capital.

We believe that an analysis of correspondence similar to the one carried out in the original French work is necessary to verify where each variable's categories are represented, and where relationships among them can be observed according to their linkage to each subfield (EPI, PPM, SHS, among others). It would also be interesting to analyze the probability of each variable occurring according to the subfield of origin.

Finally, we believe that this type of analytical exercise on the field of PH - its dynamics of political capital, prestige and notoriety distribution - may help us better understand academic forms of distinction attribution, contributing to uncover the production of inequalities in this scientific field. In this way, such inequalities can be better dealt with, strengthening the solidarity ties between PH's subfields. Undertaking this kind of analysis invites us, as Bourdieu (2004) puts it, to a "collective self-analysis" or socio-analysis.

As the author emphasizes, we must not expect "radical revelations" from sociological analyzes. Collective socio-analysis requires a long effort - from each and everyone, towards themselves and towards all others - by the entire field (Bourdieu, 2004).

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Authors' contributions

Deslandes conceived the study. Both authors coordinated the research and contributed to the writing of the article.

Received on: 11/06/2018

Approved on: 04/03/2019