PH PRO HOMINUM
REVISTA DE CIENCIAS SOCIALES Y HUMANAS

Artículo original

Sociology of the University and Sociology of Professions: Conceptual Articulation and Current Issues

Sociología de la Universidad y Sociología de las Profesiones: Articulación conceptual y problemas actuales

https://doi.org/10.47606/ACVEN/PH0238

José Luis Fliguer[1*]
https://orcid.org/0009-0005-4508-3780
jose.fliguer@gmail.com

Recibido: 05/01/2024 **Aceptado:** 22/04/2024

ABSTRACT

The purpose of this article is to present the elements necessary to understand the current relationship between the sociology of higher education and the sociology of the professions. First, the relevance of a sociological study of higher education is made clear in view of the problems raised by knowledge society. Secondly, Emile Durkheim and Max Weber conceptual contributions to the tradition of sociology are outlined to further the understanding of Universities and professions as pursued by higher education graduates. Next, a presentation is made of the model of the sociology of science and of higher education based on the contributions of structural functionalism, focusing on the contributions of Robert K. Merton and Burton Clark. Thirdly, an articulation between the sociology of higher education and the sociology of the professions is introduced and supported by the elucidation of the relationship between the sociology of higher education, different modalities of knowledge production and distinct types of professional habits: science as a career, liberal professions and the new innovative entrepreneurship. It is intended to make it apparent how these various professional profiles perform differently in connection with the triangle of coordination in higher education system. Finally discussed will be the emerging issues of trends in professions and careers in the labor market.

1 Universidad de Ciencias Empresariales y Sociales /Universidad Tecnológica Nacional; Facultad Regional San Francisco / Universidad de Buenos Aires; Facultad de filosofía y Letras

* Autor de correspondencia: jose.fliguer@gmail.com

RESUMEN

El presente artículo tiene por objetivo presentar los elementos necesarios para comprender la relación actual entre la sociología de la universidad y la sociología de las profesiones. En primer lugar, se aclara la relevancia de un enfoque sociológico de la Universidad a partir de los problemas planteados en la sociedad del conocimiento. En segundo lugar, presenta los elementos conceptuales generados en la tradición sociológica por Emile Durkheim y Max Weber, para aportar inteligibilidad a la Universidades y las profesiones constituidas por los graduados de los establecimientos universitarios. Seguidamente, se presenta el modelo de la sociología de la ciencia y la universidad partiendo de los aportes de la sociología estructural funcionalista, destacando los aportes de Robert K Merton y Burton Clark. En tercer lugar introducimos la articulación de la sociología de la Universidad y la Sociología de las Profesiones, partiendo del esclarecimiento de la relación entre la sociología de los sistemas universitarios, las diferentes modalidades de producción de conocimiento y los diferentes tipos de hábitos profesionales bien diferenciados: el científico como profesión, el profesional liberal y el nuevo profesional emprendedor- innovador. Se tratará de hacer visible que las distintas posiciones de estos tipos de profesionales se sitúan de modo diferente con relación a los elementos del triángulo de coordinación del sistema universitario. Finalmente se discutirá la problemática emergente de las tendencias de las profesiones en el mercado de trabajo.

INTRODUCTION

Sociology of the University

In his work "University, Knowledge, and National Reconstruction" (2003), Augusto Pérez Lindo offers a valuable analysis of the origin and development of higher education, which is suitable for assessing the relevance of a sociological approach. He identifies some distinctive theoretical features that constitute a phenomenological starting point characteristic of the university:

– "They are entities that conduct, or propose to conduct, scientific research to produce new knowledge."
– "Unlike other educational institutions, they provide an epistemological justification for the knowledge they transmit."
– "They offer degree diplomas that enable the practice of professions."
– "They organize graduate programs to keep teaching at the highest level of updating."

From these specifications, we can focus on the sociological approach to the university. It is appropriate to mention that there has been extensive discussion, as

Pérez Lindo also does, about the history of the university and its relationship with the emergence of the modern state. In this regard, this author identifies the ideal models that have guided the formation of different national university systems since the emergence of the University of Bologna in the 13th century. The German Humboldtian model, the French Napoleonic model, the British University, and the "lawyer's university" that characterizes the initial development of university institutions in Latin America have been decisive in the construction of the current systems of higher education, which are today influenced by global dynamics. However, it is clear that these models have changed in a convergent manner, due to the pressure of regionalization and globalization processes echoed in comparative education studies and studies carried out by higher education observatories. These have highlighted that the mobility of students, teachers, graduates, and professionals has set an agenda that guided a necessary process of articulation of national systems with each other.

Therefore, the history of university institutions should yield conceptual prominence to sociological knowledge. If sociology places its object through the scientific study of structures, organizational forms, and human behavior in the social sphere, this approach will be crucial to establishing the explanatory and analytical bases that allow the university to be addressed as an object of study, especially after the advent of the "postmodern condition" in the university.

The University and Professions in Classical Sociological Conceptualizations

To meet the goal of constructing the university as a sociological object, it seems appropriate to start with the work of Emile Durkheim. His foundational contributions to the field are found in his well-known work on the division of social labor, where he discussed Herbert Spencer's evolutionary theses. For Durkheim, the thesis that society naturally evolves toward a statelessness conducive to organic social relations was interpreted as a mistake. Institutions and norms are positive social facts that constitute the functional structures identifiable in the division of social labor. His famous research on "Suicide" also highlighted the social significance of anomie processes, which Durkheim recognized as the social function of education, particularly moral education. Both works inaugurate an approach to social structures, in which norms and values are the amalgam of social cohesion, emphasizing the functional character of social institutions and corporations. His central contribution regarding the university question aimed to establish the place of sociology as an academic discipline (Durkheim, 1985).

In the Durkheimian project, the pedagogical, scientific, and political issues intersect. For Durkheim, the educational system ensures social cohesion through moral education. From his research, he diagnosed the need to integrate individuals socially through moral training, which would underpin the norms and institutions as social facts. Durkheim noted in an article about Parisian university life that:

> "A society that aspires to govern itself needs 'enlightenment'; a democracy would not be faithful to its principle if it did not have faith in science. Thus, the years following the war were a beautiful period of intellectual ardor. Constructing higher education centers where science could find what it needed to develop, and from which it could project itself to the rest of the nation, was the task of the moment." (cited from Emiliozi and del Río, 2021)

The Napoleonic university (the professionalist model) should not concern itself with moral education per se, which should be the object of the institutions that precede it in the educational system, but it plays a primary role in moral formation: by clarifying and reinforcing the fundamental moral principles that characterize the process of social cohesion and citizenship formation.

Furthermore, Durkheim, in the preface to the second edition of "The Division of Social Labor," observed that the two most significant factors that ensure the normal development of industrial society are: a) the existence of moral regulation in economic activities, and b) the absence of constraints of one class on another and/or limitations for individuals to occupy positions according to their natural talents. These two factors of the division of labor, when they become anomalous, are characterized as anomic and coercive, respectively. Durkheim places the analysis of the development of professional corporations as a force capable of countering only the perverse effects of the former, and thus leaves unanswered questions about the formation of professional groupings that he did not develop (Durkheim, 1985).

In this way, Durkheim diagnoses in his sociological theses a tension in the role of universalist integration and the specificity of the scientific and professional corporations that characterize the university dynamic, anticipating the conclusions of studies by later authors such as Merton, Clark, and Bourdieu. Thus, sociology emerges as a discipline intended not only to reflect on the imposition of the social but, rather, on the ways of internalizing this imposition in individuals. The sociological analysis of the university alerts us to the tension between the universalist program of citizenship formation and the corporate logic of the professions formed at the university as an effect of the social division of labor.

The second indispensable author in this analysis is Max Weber. Weber's problematization of the university question is determined by his theory of rational bureaucracy developed in several of his works, although its basis is located in his treatise "Economy and Society" (1984). Also, as we will see, the sociological hypotheses proposed in "The Protestant Ethic and the Spirit of Capitalism" (1955) will be decisive, in which he analyzes the advantages and disadvantages of the university as a rational enterprise. For Weber, unlike Durkheim, the central question to answer regarding social cohesion is not normative facts, but rather the way in which individuals give meaning to their individual experience, which takes

place within a process of increasing bureaucratization, rationality, and efficiency, that dominates capitalist social life.

Therefore, Weber's theory of social action emphasizes the concept of rationality, through which teleological models and social interaction models are formulated that will have a significant impact on sociological theory. These will be used to characterize action according to the purposes that guide the subject of the action: a) as value-rational, oriented by values; b) as goal-rational, oriented by utility; c) as affective-rational, oriented by emotional goals; and d) as traditional-rational, determined by deep-rooted custom.

Weber approaches the university problem through a comparison between the German model supported by the theses of Von Humboldt and the North American University. His focus problematizes the American model, perceiving in it a scheme in conflict with the ideal of a university supported by scientific research. Firstly, the North American University reproduces the separation between producer and means of production, typical of the capitalist enterprise. This issue is problematic in the case of an institution like the university, which, by the logic of its "enterprise," must be linked to the State in one way or another.

To this critical view, Weber adds the issue of university education as seen in both countries. In "The Power of the State and the Dignity of the Academic Vocation" (1990), Weber asserts that science as a vocationally oriented occupation is sustained in the scientist as an agent whose ethos guarantees the activity. Due to this, the organizational structure of the university must be supported by chairs whose activity centers on an ethics that renounces presuppositions and convictions in favor of guaranteeing the clarity and objectivity of the scientific knowledge practiced. The intellectual integrity of the tenured university professor is, for him, the guarantee of achieving the goals of scientific activity.

To illuminate this issue, it is central to clarify the notion of Beruf (profession). Weber approaches this concept by incorporating the notion of meaning, distancing himself from Durkheim's positivism. Weber thus seeks to elucidate the construction of processes of recognition and identity involved in the development of social action. In the concept of profession, the religious and the secular senses of this notion inherited from the Protestant ethic are juxtaposed, which, according to Weber, allow us to understand the conditions of the emergence of the "spirit of capitalism" (Weber, 1955).

The critical view of the American university model owes, in a way, to his well-known opposition between Science and Politics. On one hand, politics as a vocation is sustained by an ethic of conviction directed at values that do not focus on the consequences of acts, but primarily on the idea of good or a good life of those who uphold the political act. Weber opposes this idea of Beruf in politics, the ethic of responsibility on which science as a vocation is founded, as the scientific

profession aims to find, through the analytics of facts, the objective consequences of decisions made in social action.

In the American university, Weber finds that this split between the formation of a leader and a scientist is blurred by the spirit of "democracy" in America, which proposes the university system as a formulator of leaders. The professor in the American university, Weber maintains, must answer the question: What does science offer that is truly positive for practical and personal life? Science provides knowledge about foresight that allows for the technical control of life and methods for thinking but even so, the question arises about the concept of profession: if science is a profession and politics is a profession in a democratic society, then what is the professional ethos of Science and how does this relate to the University?

Weber answers this question, stating that this ethos is instituted as a "professional duty" a phantom of past religious ideas. Regarding the conceptualization of profession in the specific field of science (Weber, 1990), he asserts: 1) that in an external sense, science as a profession is organized in a material institutional dimension, through entry into the scientific-academic career, mastery of knowledge, remuneration, etc., and 2) but in another sense, it is sustained on a highly "subjective" view of one of the aspects of the profession, by relying on the role of "personal talent," which is expressed in an "inner calling for science." On the other hand, the opposition between the politician and the scientist is relative, as they converge in the formation of different types of professionals.

Weber concludes that all professional structures must be considered as the result of three aspects: 1) the estate articulation of each professional group; 2) the interplay of estate opportunities, and 3) the forms of education created for certain professions, such as science, which require higher intellectual preparation.

Sociology of Science and Sociology of the University

The person who attempted to delineate the structure of the ethos of the scientific profession was the American sociologist Robert King Merton, who conducted a sociological examination of scientific communities. Merton's conception owes a debt to Durkheim through the structural-functional tradition, whose primary American exponent was sociologist Talcott Parsons. Continuing Durkheim's thought, Parsons considered professional corporations as central to the production of social cohesion, always viewed in tension with market logics. According to Parsons, three aspects characterize the professional. Firstly, a professional who provides services to patients or clients does so in a manner different from the businessman who seeks personal profit by selling products to consumers. The hallmark of professionalism is its reference to scientific legitimacy, which is universal as opposed to particularism. Secondly, Parsons highlights the role of professional authority, which is part of a specific sociological structure,

founded on technical competence in a defined and particular domain. Authority implies that the professional's client must confine their trust to a domain limited to their competencies. Lastly, Parsons emphasizes the affective neutrality of professional action, which, by its characteristics, opposes the emotional dimension involved in traditional and charismatic actions typical of familial, religious, or political spheres (Parsons, 1939).

In Parsons' and Durkheim's perspectives, professions integrate the social system, thereby allowing the ordering of a structure capable of enduring over time, in balance with other subsystems with which it cohesively interacts. Merton builds on this perspective, but his originality lay in constructing an approach that would change American sociology, known as the "middle-range theories" approach. This revisits the legacies of Durkheim and Weber, yet builds a field of research that is halfway between microsociology (theory of small groups) and macrosociology. His sociological theorization of science is precisely situated at this new level of research and theorization.

Merton's approach to Science focused on the space where interactions between social structures, cultural structures, and the scientific subsystem occur. His strategy was to conduct extensive research, explaining some of the religious causes of the Scientific Revolution, following in Weber's footsteps, but also - in line with Durkheim - aimed to explicate the norms that regulate the existence of the scientific corporation. The "Mertonian norms" of science thus constitute a set of ideals that indicate the objectives and methods scientists must follow within the scientific community. These are: 1) Universalism: a norm according to which claims to truth are evaluated in terms of universal or impersonal criteria, and not with any bias of religion, class, nationality, or gender; 2) "Communism"; the common ownership of scientific discoveries, as a heritage of a universal patrimony, whereby recognition and esteem are the only substantial returns; 3) Disinterestedness: according to which scientists are rewarded for acting in an ostensibly disinterested manner; and 4) Organized Skepticism: all ideas must be tested and are subject to community scrutiny through rigorous and structured peer review (Merton, 1977).

Merton and his disciples devoted efforts to studying the relationship between the ethos of science and the functioning of its social system, finding paradoxical effects that give rise to functional conflicts. Phenomena such as "the obliteration of the scientist" by the relevance of their discovery or the well-known "Matthew effect". The latter refers to the functioning of the stimulus and reward system of the scientific corporation, insofar as the most reputable scientists accumulate credit to the detriment of scientists who have not accrued prestige, regardless of the real relevance of their contributions. Mertonian sociology thus becomes a relevant input for constructing a sociological approach to the university system.

From our perspective, the sociological reading of higher education systems finds its principal exponent in Burton Clark. This New York sociologist was the best

at using the analysis of tensions between the ethos of science and the scientific system conducted by Merton to establish a framework for addressing the university problem. It is timely to note that, beyond the intimate relationship between the University and the scientific system, the university logic extends beyond the scientific corporation, incorporating other logics of the state apparatus, as it constitutes the highest apex of the educational system.

Clark's most influential book in the study of the university milieu is "The Higher Education System" (1983). This book advances the study of organizational entities called Universities, adopting them as the most suitable units of analysis for addressing the study of the system. In the era when Clark began his journey, political scientists, economists, and organizational specialists approached the study of the university's singularity in a partial manner, without capturing its specificity.

Following Weber, he maintains that the University should be treated differently from productive enterprises. Clark proposes an approach that allowed him to interpret the division of labor, the structural morphologies of universities, and their systemic organization. Ultimately, the analysis of the university establishment paves the way to study the system that organizes and governs the higher education system, a crucial issue for understanding the articulation between the scientific system and professional corporations.

Clark's analysis distinguishes three levels: 1. A micro-level and internist analysis: studies what happens within the institutional framework of the chair, faculty, and department; 2. A systemic level: studies the processes that occur at the level of the higher education system, and its differences from other organizational systems; and 3. A comparative analysis: confronts what happens in different countries around the higher education system.

For Clark (1983, pp.49-50), "purposes are generated by the formation of academic groups around certain bodies of knowledge, meaning that the truly operative objectives emerge from the relationship between the organization of individuals and the organization of knowledge." Based on this observation, the great and permanent matrix structures of academic systems can be identified, conceptualized, and evaluated. "Higher education must focus on disciplines, but simultaneously needs to be constituted in the form of establishments" (Clark, 1983, pp.59-60).

In turn, these establishments are organized under a political and regulatory system validated by the State. Therefore, according to Clark, the higher education system identifies knowledge as the raw material of the university organization, with the main technologies that sustain it being the processes of research and teaching.

As we said, knowledge, for the analysis developed by Burton Clark, is the raw material of the university organization. This starting point for the analysis has significant consequences. Firstly, its character is specialized and yet open to other organizations, due to the academic community consisting of its autonomy and universalist pretension.

The university organization thus results in a weak structure whose control mechanisms are diffuse, leading Clark to identify them as an "organized anarchy." Thus, the university establishment is presented as composed of a set of disciplinary and professional fields that coexist in their diversity.

As a result, academic activities within the higher education system are grouped and distributed in two ways: by disciplines and by establishments.

The establishment brings together specialists from different disciplines in a physical location. The discipline is organized by field of knowledge in a national but also international system. Disciplines and establishments converge in academic units: the chair, the department, and the institute. Finally, teaching and research are distributed and linked by specialty.

Therefore, academics integrate around specialized knowledge, in units weakly coupled to each other.

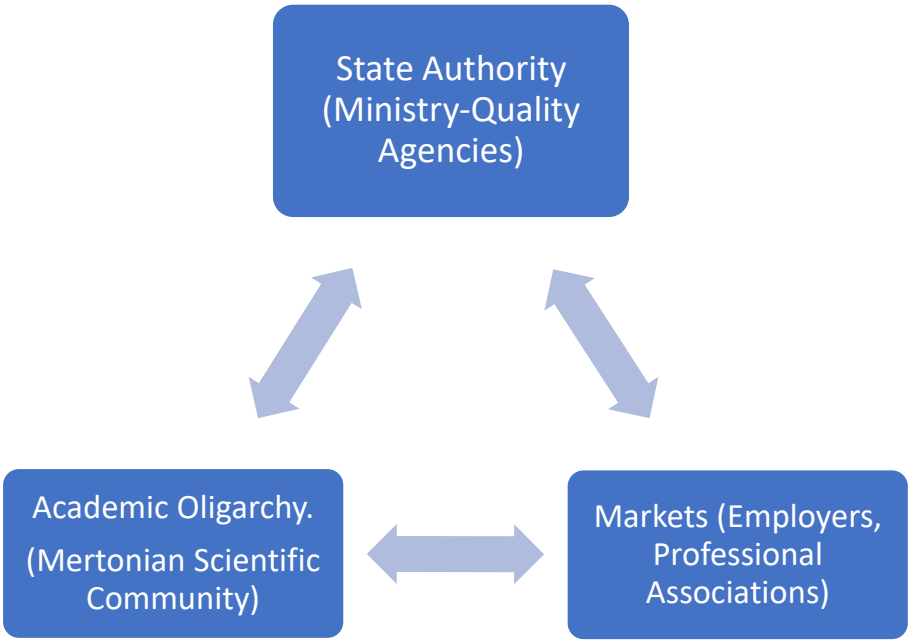
In the analysis of the organization, levels of authority within the system must be differentiated:

> 1st. Department or Chair; 2nd. Faculty or School; 3rd. University Establishment; 4th. Unified systems of multiple campuses; 5th. Provincial or municipal government; and 6th. National Government. The 1st and 2nd levels constitute the "infrastructure of the system"; the 3rd level is the core of the "intermediate structure"; and the 4th, 5th, and 6th levels are levels of administration and global coordination of the system (Clark: 1983).

By adopting a global analysis of the system, its integration is supported by three poles of coordination that deal with the modes of distribution of authority: State, market, and academic oligarchy. These poles of integration are linked to the power and hegemony of different interest groups in each case, according to the characteristics and history of the country. Clark highlights that in coordination there are three types of agents: 1) Academics; 2) The state bureaucracy, 3) The market (as opposed to state-bureaucratic coordination).

In this way, for Clark, the higher education system is dynamically coordinated by a triangle:

Figure 1.
Model of the Higher Education System According to Clark**.**



Author's own elaboration (2024) based on data from Clark (1983)

The dynamics of the system's coordination can be studied through the tendencies towards an advancement of state-bureaucratic coordination and market coordination over academic coordination, which has led to extensive debates. The dynamic interplay of coordination establishes that: 1) When political and bureaucratic forms of authority are strengthened, Higher Education Institutions (HEIs) are conditioned by the regulatory mechanisms established by the government; 2) If market coordination predominates, it will be the demands of students, businesses, and other opinion groups that impact the policy definitions of HEIs; 3) Conversely, when the authority of coordination is internal to the HEI itself, it will be the professors who define the political and administrative direction of the institution.

We see that a central issue of systemic coordination of Higher Education, already present in Weber's discussions when confronting the German and American systems, was the functional coordination of the autonomy of the scientific community with state coordination and market pressures. As we have seen, his perspective exposes the fragility of the autonomy of the scientific community and its ethos as guarantors of the suitability of knowledge. Clarifying the question posed by Weber requires distinguishing between academic and institutional

autonomy. Academic autonomy is linked to the ability of each academic to teach and research according to their own ideas. Institutional autonomy refers to the ability of the community of academics to self-govern.

The role of the scientific community—which Clark identifies with the academic oligarchy—in the governance of Higher Education Institutions is one of the reasons that provoked the contemporary emergence of university quality assurance systems. Through the establishment of these systems, it was sought that all agents of the coordination triangle participate in the evaluation of the processes and outcomes of the university establishment, preserving the academic autonomy of the university community but enforcing accountability of the performance of university establishments within the systemic quality requirements.

Among the current trends in the university system, a new university model has emerged: the "entrepreneurial university" (Aibar, 2023, p.148). This new university type is the product of a change in the logic of knowledge that has been developing since the so-called postmodern turn in the validation and management of knowledge that emphasizes the role of technology. In the report that the sociologist and philosopher Jean-François Lyotard wrote regarding the restructuring of the University of Paris, published as "The Postmodern Condition," he proposes a new series of parameters for evaluating university activity. Among them, Lyotard specifies three central issues: a) that the truth and validity of theories have become performativity; b) the centrality of technological mediation in teaching processes; and c) the penetration of the values of the productive enterprise into the logic of the university system. Lyotard's text sought to incorporate into the French university the American model of technological innovation that originated with the Manhattan Project and matured in the experiences of Silicon Valley and MIT in the incubation of technological enterprises (Lyotard, 1987).

The aforementioned American model, supported by what Barbrook and Cameron (1996) identified as the "Californian ideology," relies on the premise of the linear model of innovation. Acceptance of the equation Research + Development + Productive Innovation would generate, according to this concept, a positive social impact, introducing into university thinking a new ethos, incorporating entrepreneurial logic as an identity core. This new logic of academic capitalism multiplies the weight of management value in university governance and raises the need to train faculty and researchers in skills for innovation and entrepreneurship. The model of a university aligned with the innovation process would function according to the original proposal of the "triple helix" (Etzkowitz and Leydesdorff, 2020), which promotes a virtuous linkage between three actors: universities, businesses, and government. While the triple helix model may align with Burton Clark's proposed coordination triangle, the logic of academic capitalism questions the weight of the academic oligarchy in university governance since its Mertonian values are refractory to the entrepreneurial ethos.

Indeed, the trajectory of scientists does not weigh entrepreneurial capability formation as relevant, and academic autonomy is resistant to cooperation and coordination with the business world, limiting access to patents and utility models. In its new perspective, the Entrepreneurial University should embrace the challenge of governance with greater weight on managers at the expense of academics and assume an active transformation of the organizational mode to facilitate cooperation with the business world. The advancement of a more active relationship with users and potential adopters of technological developments, as well as with non-governmental organizations linked to environmental change and sustainability, would open up to models identified with a fourth and fifth helix respectively. In relation to this process, quality assurance systems have moved to discuss the incorporation of stakeholders in the processes of evaluating university quality, a trend that currently continues.

University and Professions in the Current Context: New Dynamics of Knowledge among the Sciences, the Liberal Profession, and the Imperative of Innovation

A clarifying contribution from the sociological approach to the university system is credited to Pierre Bourdieu in his classic, Homo Academicus (2008). This work, based on Bourdieu's unique conceptual apparatus, attempts to address the question posed by Durkheim and "reflect on the forms of internalization of that normative imposition in individuals," but it does so by incorporating Weber's problematics through a dialectic between the notions of Habitus and Field. The academic field is a social space that structures interactions while the habitus is the way in which individuals and groups reproduce structured behavior in the academic field, building their identities, though also modifying them. With a similar inspiration, the anthropologist of science, Tony Becher develops an analysis of the configurations of fields that structure university communities which he calls “academic tribes and territories.” His research asserts that "identifiable structures can be found in the relationship between forms of knowledge and the sociology of communities associated with them." Unlike Bourdieu who limited his research to the faculties of Arts and Humanities, Becher (2001) conducted a broader inquiry that allows an analysis of fields structured in science as a profession and those fields whose members develop their activity and structure their habitus and social power outside the university institution.

Becher presents this phenomenon through a suggestive classification. On one hand, he notes that scientific communities, from an epistemological viewpoint, are structured by major themes that organize problems and research programs and by segments distributed by areas and specialties. On the other hand, in the fields of knowledge, we find pure and hard disciplines like the so-called exact sciences, the pure soft ones like the different humanities in their basic fields, and then the applied sciences which can be qualified as both hard and soft. Becher points out that Mertonian values at the socio-organizational level are usually driven

by the paradigm of pure and hard sciences. However, at the socio-organizational level, the different scientific communities present peculiarities. For example, they are organized as disciplinary communities whose organization is structured in different scenarios: within universities, in scientific associations, in professional colleges, and in networks. These communities may be convergent or divergent (in topics and specialties) relative to disciplinary frameworks, with research fields being "urban" (many researchers concentrated on juxtaposed or proximate topics) or "rural" (with researchers distributed in topics or problems that do not concentrate many researchers). From the perspective of networks, their concentrations can be dense or loose. Each disciplinary field can be characterized by types of communities, densities of research, and types of networks that are characteristic of it.

Addressing the topic of applied sciences places us squarely in the issue of the sociology of professions. The type of communities and networks that these configure will be decisive in considering how applications from different specialties will develop within the framework of university systems and in the type of habitus that characterizes the professionals who integrate them. Indeed, Weber noted in "Science as a Profession" (Weber, 2009) that the scientific vocation was linked to an ethic of responsibility in terms of the application of knowledge. This application, however, is carried out by professionals who, trained by universities, dedicate themselves to solving problems in society (or the market) using knowledge validated within the logic of the university disciplinary framework. Complicating this scenario, given the current configuration of the professional world, Weber's argument can be deployed in the relationship between professional habitus and the mode of knowledge production in which it is formed.

Michael Gibbons (Gibbons et al., 1994) has posed the mode of knowledge production as a problem to identify new modalities of development. The traditional science production mode, identified by Gibbons as Mode 1, is characterized by the predominant role of scientific associations; they autonomously determine what constitutes knowledge and what can be considered an academic or research problem; they develop activities such as conferences, research (theoretical or applied), and publications (books, journals, etc.), promoting these activities outside the university establishment. This type of organization establishes networks that integrate the scientist as a profession, according to Weber's usage. This research, argues Gibbons, aims for the development of the discipline and its quality parameters are academic. The socialization of knowledge in this mode 1 is carried out through the publication of books or specialized journals, which limits its dissemination and its possibilities for application.

Alongside this traditional modality, Gibbons characterizes a Mode 2 of knowledge production that develops embedded in its application contexts. The character of this knowledge can be interdisciplinary and even transdisciplinary. It possesses social responsibility and reflexivity, and quality control depends on the

institutional space and the organization of the research, generally taking place in extramural spaces belonging to other state bodies or private companies and corporations. Recently, Carayannis and Campbell (2012), from the study of Gibbons' models, propose a new mode of knowledge production, which they call Mode 3. This modality would be based on a systems approach to the creation, dissemination, and use of knowledge in innovation networks. These innovation networks are formed from real agents and utilize virtual infrastructures: their operation serves to fuel creativity, activate invention, and foster innovation in the public sector and/or private companies, shaping "Knowledge Clusters" as co-specialized realms that complement and reinforce each other. The assets of these networks generate knowledge in the form of "stock knowledge" and "knowledge flows," developing ecosystems of innovation. In this process, the actor is not one with an academic identity but rather a professional entrepreneur-innovator trained beyond the traditional conception of science and the liberal practice of the profession.

While it is true that, as Pérez Lindo says, it is part of the university's function to offer degrees that enable the practice of professions, it is not true that all degrees are enabling for the practice of a profession. The new qualifications that began their expansion and diversification from the 1990s and have continued into the 21st century are linked to the exercise of unregulated activities that transform into university qualifications. These activities, whose practice requires university training and are in constant transformation driven by technological development, are personified in the entrepreneur-innovator professional.

Flores and Gray, in their classic work "The Entrepreneurial Spirit and Wired Life: Work in the Twilight of Careers" (Flores and Gray, 2012), had highlighted the identity figure of the entrepreneur as a successor to the liberal professional for the performance of the skilled workforce in a society focused on perpetual innovation. As we have already pointed out, the emerging project of a university establishment centered on the model of the "entrepreneurial university" exceeds the model of the liberal profession. Largely, Gibbons' Mode 2 of knowledge production aligns with the entrepreneurial identity and "Wired Life," in which a wandering professional trajectory through various projects accumulates knowledge that symbolizes the diversity of contemporary professional paths in the job market.

At this point in the argument, it must be stated that the liberal professions, even the most traditional such as law, medicine, engineering, psychology, among others, are fields of knowledge whose production is embedded in the field of application. Although originating in the nineteenth-century traditions of the University, the training and practice of the profession take place outside the University in other state organizations, and the epistemic characteristics and epistemological models of this professional knowledge have been idealized and driven by the models of pure basic science as Becher points out. However, this mode of knowledge production is far removed from the great pure models of the

physical-mathematical sciences or philosophy, which constitute the paradigmatic disciplines of these ideals in the natural sciences and humanities, respectively.

If, as Pérez Lindo rightly points out, universities are characterized by offering postgraduate programs to maintain teaching at the highest level of updating, the careers have different training purposes depending on whether they are postgraduates directed towards scientific training or professional training. This difference exists in all university systems. The scientific postgraduate is identified with the postgraduate in sciences (in the Anglo-Saxon world) or academic (in Ibero-America) as opposed to the postgraduate in arts (in the Anglo-Saxon world) or professional (in Ibero-America). Despite nuances and differences in various disciplinary and national traditions, it is the PhDs that prepare par excellence for performance in the scientific profession, and the master's degrees and/or specializations that enable practice in the liberal professions.

Professional colleges are the extramural institutions where academic communities whose graduates are liberal professionals gather. A college is a professional and unionized association composed of those who practice a liberal profession and are often recognized or controlled by the State (constituting a public law corporation), and whose practice is regulated by national or state regulations. Its associated members are known as colleagues.

Liberal professions have been taken as an object by structural-functionalism, based on three propositions stated by Dubar and Tripier (1998, chap. 4), adopting Parsons' perspective, they assert that: a) the deployment, restoration, and organization of professions are relevant for the constitution of modern societies; b) professions ensure an essential function: the social and moral cohesion of the social system; and c) professions represent an alternative both to the domination of the business world of market capitalism and to the dynamics of class confrontation.

Dubar and Tripier then take up the object of study of professions in terms defined by Durkheim and Weber, leaving open a question about the sociological significance of the networks formed by entrepreneurial professionals developed by the Culture of Innovation that have expanded in recent decades.

In this regard, an important methodological reflection by Luc Boltanski is enlightening. The French sociologist sharply points out that sociological analysis oscillates between legal entities and merely narrative entities. "Legally defined entities have clear contours although the individuals they include always belong to a plurality of sets" (Boltanski, 2016, p. 274). Law plays an essential role in the processes of stabilization of social reality, helping to make it increasingly intelligible and predictable by establishing chains of causality that can be activated to interpret events as they arise. Clearly, both Universities and Professional Colleges are legally defined entities. However, innovation networks are narrative entities that, to

transform into sociological entities, require empirical studies to describe them, even though these descriptions are weakened by the multipositionality of their members. This last aspect detracts from the consistency that legal entities do have, leading network sociology to always be on the verge of studying entities whose existence is fictional.

It must therefore be assumed that the universe of network studies refers to phenomena that in some way aim to confirm hypotheses about the impact of market logics on knowledge institutions. Technological development that drives new forms of work in a process of continuous innovation led by large technological corporations can offer nothing more than a narrative about the innovative and entrepreneurial professional that, as Eduard Aibar well described, is backed by fictional theories imbued with technological determinism: the tales of the technoscience gurus. This mode of legitimation remains outside of Mertonian values, as well as outside of professional legal frameworks that protect users from malpractices in the application of technologies to human life.

Precisely, the neo-Weberian perspective has questioned the moral justifications and vocational motivations of professionals, to give more importance to professionals considered as collective actors of the economic world who have managed to close their labor market and establish, via professional colleges, a monopoly of control over their own work activities by becoming legal entities (Dubar and Tripier, 1998, chap. 6).

To understand the relationship between knowledge and power in professional training, vocation has also been conceived as an ideological modality of modern bureaucratic capitalism that finds its effectiveness in the belief in meritocracy and in the superiority of university elites in liberal competition. In summary, neo-Weberian reading paths are opened: the first path, the bureaucratic one, results partially from a rereading of Weber on the models of state bodies or noble guilds, and the second stems from a Weberian interpretation of guild/profession-vocation models. However, it is necessary to recognize that in this framework it stands out that Weber's theses, concepts, and positions remain current as a platform for theorizations of the "professional fact" or "professional practice," which tend to conceptually reconfigure the relationships between the market, the state, and the professions and focus their analyses on the following dimensions: professional knowledge, its practices and experience, its symbolic legitimacy, power, economic monopoly, and its function in relation to social conflict.

Luc Boltanski also contributes to an update of Weber by pointing out the minimal notes that the spirit of capitalism must have to allow the formation of a subjectivity capable of social action within the capitalist framework. Boltanski states: “The spirit of capitalism characteristic of each era must provide, in historically variable terms, elements capable of calming the anxiety aroused by the following three questions: How can commitment to the capitalist accumulation

process be a source of enthusiasm even for those who are not the first to benefit from the profits realized? To what extent can those involved in the capitalist cosmos be guaranteed a minimum security for themselves and their children? How to justify, in terms of the common good, participation in the capitalist enterprise and defend, against accusations of injustice, the way it is animated and managed?" (Boltanski, L and Chiapello, I, 2002, p. 22)

Boltanski and Chiapello define three stages. The first stage is that of the bourgeois entrepreneur: the figure of the conqueror and captain of industry. The second stage of the spirit of capitalism is the one that emphasizes the organization more than the individual, putting forward as a prototypical figure the corporate director capable of growing capital, which is the capitalist model of bureaucracy and technical-administrative professionalization. Boltanski notes that we are faced with a third figure of the spirit of capitalism: it is a globalized spirit of capitalism, which uses new technologies to transcend the limitations that the modern state imposes by placing multinational companies as agents of its growth.

It must be said that the key space of this third stage is defined by the internet. As Javier Echeverría and Lola Almendros (2023) have pointed out in their work "Technopersons", information and communication technologies have created a relational world that responds to the morphology of networks and, what is more important, this space is outside the regulations of the nation-state. Such a circumstance puts the logic of entrepreneurial-innovative professions outside national regulations and embedded in knowledge application contexts managed by large technological corporations. However, it is doubtful that the spirit of the innovative entrepreneur can consistently respond to the requirements with which Boltanski and Chiapello interrogate the new spirit of capitalism.

Transformations of Professional Work: Disqualification and Proletarianization

For Durkheim, as well as for Marx, the study of professional practice is linked to the division of social labor and its mode of institutionalization. Their inquiries identify a triple object: 1) the social organization of work activities; 2) the subjective significance of such activities, and 3) the modes of structuring labor markets in the tradition inherited from medieval guilds (Marx) and from Protestantism (Weber).

The Marxist tradition contributes to the analysis the trajectory of work processes from the breakup of guild coalitions by the processes of division of labor and the proletarianization of industrial labor in the 19th century, and changes in the social and technical division of labor during the 20th and 21st centuries due to the impact of new technologies. The different processes mentioned have raised original phenomena concerning the contemporary evolution of the professions.

It is Marx's approach that best allows understanding the current emergence of the entrepreneur paradigm that proposes to transcend the collegiate logic inherent in the liberal profession. The continual division and reorganization of work within the framework of capitalist development was accelerated by the Schumpeterian imperative of innovation. This imperative assumes a process of creative destruction through a permanent revolution of work supported by technological development.

The Marxist tradition of analyzing professional work points out that these professionals have a higher education that places them in a privileged position to negotiate within the industrial relations system, a position that partly explains their rejection of unions and their preference for collegiate associations.

Within Marxist thought, the theses of sociologist Harry Braverman on the degradation of work in monopolistic capitalism stand out. Braverman analyzes work, including skilled professionals, introducing a distinction between the **qualification of the worke**r and the **qualification of the job** within a process perpetually transformed by technological development.

From this analysis emerges the concept of the "social construction of qualification". This social construction can be seen as a growing transformation of the relationship between capital and labor. Analyzing professional work in terms of the relationship between labor and capital, it can be observed that professional work is initially only formally subsumed to capital through the remuneration of services. Through the development of a technology required as a means of labor, advancement in the real (not just formal) subsumption to capital occurs, transforming into a salaried relationship under the control of increasingly automated processes. This process of transition from formal to real subsumption of labor to capital is part of a sustained trend toward the disqualification of professional work. Indeed, if we conceive qualification as knowledge of the unity between conception and execution from the degree of control of professional labor over its activity, the loss of control and cognitive impoverishment should be construed as two complementary aspects of disqualification.

Undoubtedly, studies on innovation processes throughout the second half of the 20th century and the first half of the 21st century have illuminated the contingent relationships between technology and the qualification of professional labor force, leading some authors to relativize Braverman's diagnosis. For example, in the 1990s, the studies of Benjamin Coriat (Coriat, 1992) on Toyotism - the Z-model developed in Japanese companies, based on the development of quality circles and the Kaizen principle (permanent innovation) of the work process. It was an organizational norm in which the plant professional had to function within a framework of a mandate for continuous improvement and innovation of the work process. In some ways, these processes of total quality and innovation of the Japanese company charted a path that would be inherited by the entrepreneurial

conception of the profession. In these processes, it was seen that technological development does not necessarily link to loss of control and cognitive impoverishment. However, these processes have notably reversed during the 21st century under the impacts of robotization and artificial intelligence.

In summary, Braverman's theorizations applied to the liberal professions can be read from two axes: one analyzes the deprofessionalization and the other the proletarianization of the professional. The first, deprofessionalization, refers to the trend towards the loss of professional authority as the monopoly of knowledge is endangered by several combined causes: the educational level of the population, the effect of the dissemination of information through a variety of sources on the internet that generate diffusion and informational confusion among the public, and the increasing specialization due to the division of labor among different professions. These factors, Braverman maintains, introduce confusion in the public's decision-making process regarding the authority that a professional has to make diagnoses or recommend courses of action. On the other hand, technology does not dequalify by itself, but its use depends on how it is integrated into the organization of work, an issue that demands specific analysis.

Meanwhile, the theory of the proletarianization of professionals initially sought to extend to the analysis of professions the considerations that Braverman (1981) makes regarding the degradation of the work of laborers and office workers. Proletarianization, for Marx, should be analyzed from the mechanism of surplus appropriation in the production process, i.e., whether an activity produces surplus value or not. An initial indicator is given by wage relations since professional work, according to some authors, could often be linked to what is called unproductive work or to processes of value whose interpretation from the theory of surplus value is very difficult. Therefore, stratification indicators usually take into account, besides the amount of salary, the prestige or education of the professional.

In this sense, different authors converge on the idea that proletarianization consists of falling into the wage orbit, within a labor market where one competes to sell labor power. It should be kept in mind that professionals do not operate in a completely free market as they are regulated by the State or by their own professional organization. Another aspect that distances the liberal professional from the office employee is that in their professional performance, they operate as a worker whose pace and conditions of work, product, and price of their product are determined, prima facie, by themselves, and whose salary is not only regulated by the sale of their services in a free market, but also receives their fees without any bureaucratic intermediary. However, even considering the independent professional, with their own office or consultation, these definitions scarcely adjust to reality today; the issue of moving toward a form of salaried remuneration in some liberal professions is quite conspicuous.

Moreover, there is a different hypothesis to interpret proletarianization in a sense that avoids previous objections. Such a sense would be the "loss of control over knowledge, the work process, etc., and a loss of control over the goals and purposes of one's own work." First, if we recall Braverman's concept of the "social construction of qualification", a growing transformation of the relationship between capital and labor can be seen. Observing work processes impacted by technological innovation, it is evident that, while it is true that it is often necessary to increase knowledge and skills in one sector of the professionalized workforce, they simultaneously decrease in another, with numerous studies emphasizing the contingency of these processes. But in all cases, this loss of control over the work process can be seen, and a distancing from the goals and purposes of one's own work in the professional's perception. The growing trend of real subsumption of professional labor to capital in processes where the tools used by the professional are generated by a corporation justifies the diagnosis of a general trend in this direction. As a response to these processes, professionals express either ideological insensitiveness (disassociation from the organizational context) or ideological co-optation (new definition of one's own goals consistent with those of the organization).

Despite numerous objections and debates around Marxist theses, it is reasonable to consider that in the context of the contingency of the division of labor and technological development in different fields, it is possible to accept the assessments on the advances of the wage relationship and the trend toward the disqualification of professions suggested by Braverman's research.

Clearly, the model of the emerging entrepreneurial-innovative professional in this latest stage of the spirit of capitalism is the one most vulnerable to the process outlined by Braverman.

CONCLUSIONS

This work has presented, from a sociological perspective, the strong interconnection between university systems and professional colleges, as well as their tension with market forces.

We have seen in the sociological theories of Durkheim and Weber the existence of differences but also convergences that make their analyses complementary. Durkheim highlighted the importance of establishing a university that contributes to the subjective formation of the citizen dimension in modern societies and proposed the role of professional corporations in preserving the quality of work within the framework of the social division of labor and in social integration through the norms that hierarchize them. Max Weber, for his part, starting from his proto-hermeneutic conception of social action, emphasized the role of the processes of subjective construction that make the capitalist process possible, giving centrality to the notion of vocation (Beruf) to understand the

axiological-rational structure that provides consistency to the ethos of science. Weber also recognized the problems arising in the university and professional logic due to the dissolving logic of the market.

For both Durkheim and Weber, and later for Parsons, professions play an integrative role in the social system, thus founding a structure capable of enduring over time, in equilibrium with other subsystems with which it coheres.

In the 21st-century university model, the convergence of the Napoleonic and Humboldtian models under the impact of the dynamics of the current knowledge society has tested university systems as institutions that must guarantee the functions required by Western democracy in the use and distribution of knowledge.

Robert K. Merton managed to identify the norms that bind scientific systems together and constitute the academic core of the productive activity of the university establishment, as astutely observed by Burton Clark. It is precisely Clark who constructs a sociological model to give intelligibility to the functioning of the university system by formulating the coordination triangle between the academic oligarchy, the state, and the market.

However, Clark's model faces the dynamics of the globalized market, strongly driven by the imperative of technological innovation, which has given rise to the narrative of an entrepreneurial university model, aligned with new modes of knowledge production. This new mode of knowledge production aims to go beyond the articulation model proposed by the triple helix (University-State-Market) to advance a logic of innovation that promotes N-helices, whose impetus is generated by large technological companies rather than state agencies. These new modes of knowledge production challenge the ethos of science in favor of an academic capitalism logic that displaces the scientific community from the axis of university management in favor of the managerial cadres of university establishments.

Thus, the sociological analysis of the university system is intertwined with the sociology of professions. The expansion of the university system in the diversification of degrees should not obscure the fact that, in principle, the various university degrees are ordered based on the different modes of knowledge production and the different sociological ways in which we can understand the insertion of graduates into social action. Initially, as the analysis shows, Mode 1 knowledge production characterizes the training of professionals dedicated to science, Modes 1 and 2 characterize the identity construction mode of liberal professions, and finally Modes 2 and 3 characterize the modes of new entrepreneurial-innovative professionals.

These different modes of identity construction of the professions open a fundamental issue diagnosed by Harry Braverman. Both identities constructed under the modality of science or the liberal professional practice are constituted

within legal frameworks that intertwine knowledge construction with scientific and professional communities, which parameterize the possibilities of knowledge development with critical autonomy against a market controlled by large technological companies. The new modalities that arise beyond the triple helix model propose a technological development agenda that imposes qualifications on work processes, which are often linked to processes of disqualification of the professionals working in them. That is, the construction of new identities in the style of the entrepreneurial professional and Wired career trajectories are not linked to innovation processes similar to the Kaizen of the Z-model, in which the professional was a protagonist. Instead, these processes led by large transnational technological corporations, which define new work profiles for university professionals, have a different characteristic.

The new entrepreneurial-innovative professionals uncritically accompany the agenda proposed by these large transnational technological companies, which tend to generate a demand for university graduates who must qualify exclusively to perform in the use of new technologies. These technologies assume a high qualification of work processes (and not an autonomous qualification of professionals), subordinating their cognitive training to technological agendas, whose social impact and consequences are accepted without much reflection, and subordinating the civic formation of these agents participating in knowledge networks to the grand narrative of permanent innovation.

REFERENCES

Aibar, E (2023) El culto de la Innovación, España, Ned Ediciones.

Barbrook, R y Cameron A (1996) "The Californian Ideology", en Sience as Cultur, Volumen 6, N°1 , pp 44-72.

Becher, T (2001) Tribus y Territorios Académicos. La indagación intelectual y la cultura de las disciplinas. Barcelona, Gedisa.

Boltanski, L y Chiapello, I(2002) El Nuevo Espíritu del Capitalismo. España, AKAL.

Boltanski, L (2016) Enigmas y Complots. Una investigación sobre las investigaciones. México, FCE.

Bonvecchio, C (2002) El mito de la Universidad. México, Siglo XXI

Bourdieu, P (2008) Homo Academicus, Buenos Aires, Siglo XXI

Braverman, H (1981) Trabajo y Capital Monopolista. La degradación del Trabajo en el Siglo XX. México, Nuestro Tiempo.

Castillo-Vergara, M (2020) "La teoría de las N-hélices en los tiempos de hoy". En Journal of Technology Management & Innovation © Universidad Alberto Hurtado, Facultad de Economía y Negocios. Volume 15, Issue 3,(http://jotmi.org)

Carayannis, E. G., & Campbell, D. F. J. (2009). "Mode 3" and "Quadruple Helix": Toward a 21st century fractal innovation ecosystem. International Journal of

Technology Management, 46(3–4), 201–234. https://doi.org/10.1504/ijtm.2009.023374

Carayannis, E. G., & Rakhmatullin, R. (2014). The Quadruple / Quintuple Innovation Helixes and Smart Specialisation Strategies for Sustainable and Inclusive Growth in Europe and Beyond. Journal of Knowledge Economics, 5, 212–239. https://doi.org/10.1007/s13132-014-0185-8

Clark, Burton (1983). El sistema de educación superior. Una visión comparativa de la organización académica. México, Universidad Autónoma Metropolitana.

Coriat, B. (1992) Pensar al revés:Trabajo y organización en la empresa japonesa. México, Siglo XXI

Dubar, C. y Tripier, P. (1998) Sociologie des Professions, Armand Colin, París.

Durkheim, E (1965) El Suicidio. Bs. As.,Schapire

Durkheim, E (1985) La división del trabajo Social. Tomos I y II, Barcelona, Planeta-Agostini

Durkheim, E (1973) La Educación Moral, Bs. As.,Schapire