The Differentiated Market-University: is commodification equally affecting all universities?

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The meanings of university's autonomy in western history as a clue to understand the consequences of universities' differentiated adoption of enterprise features.

Abstract

We analyze the meanings of university's autonomy throughout western history and capitalism's recent transformations in order to suggest a taxonomy of present universities according to the type of capital enterprise they are imitating. As a first step, we distinguish three dimensions of university's autonomy in the Medieval University and the Enlightenment University models: corporative, reason and financial autonomy. We use them to suggest that current universities are adopting capital enterprises' features in a differentiated way, impacting differently on their autonomy. Thus, we propose a differentiated model called the Differentiated Market-University, integrated by the Single Purpose, the Technological and the Enhanced University. The Single Purpose University acts like a capital enterprise concerning mainly its teaching activity. In the Technological and the Enhanced Universities teaching is also guided by market needs. Nevertheless, they additionally face, differently, the consequences of knowledge's direct contribution to capital's accumulation. The Enhanced University dominates innovation circuits keeping a significant part of its innovation's economic benefit. On the other hand, the Technological University loses those profits. We

conclude our article by highlighting the continuities and ruptures between former university models and our taxonomy.

Keywords: historical university models; university's autonomy; teaching and research commodification; market-university's differentiation.

1. Introduction

Critical literature has described recent university's transformations as the development of an academic capitalism (Slaughter & Leslie, 1997; Slaughter & Taylor, 2016), an academic enterprise (Larsen, 2011) or the commodification of higher education and research (Berman, 2011; Castro-Martínez & Sutz, 2011; Harari-Kermadec, 2013; Harvie, 2000; Mowery, 2005; Nowotny, 2005; Pestre, 2003; Sotiris, 2012, 2014).

Under these frameworks, different academics insisted that university's autonomy to orient research could be eroded when actors from outside influence their research's agenda. They identified that private companies provide resources for research of their interest, and that the state decides its support according to its own priorities. Furthermore, privately funded academics tend to address the interests and requirements of their financiers (Bok, 2003; Castro-Martínez & Sutz, 2011; Kleinman & Vallas, 2001; Lee & Miozzo, 2015)

However, at the same time, other authors believe that private funds help to widen funding sources reducing university's dependence on public monies, thus increasing their financial autonomy, which is positively considered as budget sufficiency and diversification (Castro-Martínez & Sutz, 2011; B. Clark, 2015). Adding another dimension to university's autonomy, for Piironen (2013), a university is autonomous when, facing all kind of external influences, it retains various degrees of independence or self-governance. Hence, university's

autonomy includes different dimensions: academic freedom, financial autonomy, and what can be called institutional or corporate autonomy, referring to its self-government capacity. Yet, these dimensions of university's autonomy can be tracked throughout western history. Therefore, we believe that studying their continuities and ruptures may contribute to analyze the impact of university's adoption of capital enterprises' characteristics.

Thus, we briefly study throughout universities' western history those big models that recognized autonomy as a distinguishing feature. We will focus on the Medieval and the Enlightenment Universities (Anderson, 2004; de Ridder-Symoens, 1992, 1997; Dmitrishin, 2013; Rüegg, 2004; Wittrock, 1993). Using the results of this historical analysis, we will show that the threats to university's autonomy in the present are not equal among every university that is directly participating in commodity social relations.

Hence, we suggest that this transformation can be better understood by developing and proposing a taxonomy of universities based on Levín's (1997) private enterprises' typology. The author explains that some private enterprises, called "enhanced capital enterprises", have differentiated from others by dominating the innovation capacity of their branch. Each of them plans the production process of all the other enterprises under its domain, called 'simple capital enterprises'. Enhanced capital enterprises also plan and dominate innovation circuits defined as the interlocking of all the actors and institutions that, through integrated phases, produce an innovation (Cazenave & Gonilski, 2016; Levín, 1977). Levín (1997) also suggests that there is a third type of enterprise, the "technological capital enterprise", that participates in these innovation circuits producing at least one stage of the innovation process. Nevertheless, it loses the benefits that derive from its creative activity, which

are appropriated by the enhanced capital enterprise planning the corresponding innovation circuit.

Considering all the latter, the rest of this article is organized as follows. In Section 2 we present the two selected historical models concentrating on university's autonomy. In Section 3 we present our typology for Market-Universities following Levín's (1997) capital enterprises' differentiation, and we distinguish it from other existing segmentations among universities. Our taxonomy focuses specially on knowledge production at universities. By doing so, and by briefly studying university's autonomy throughout relevant phases of university's western history, we expect to contribute to an open research line suggested by Sotiris (2014): the need to understand the university simultaneously as a place of reproduction of social classes and production of knowledge. Section 4 provides some concluding remarks on the continuities and ruptures between former university models and our typology.

2. Revisiting university's autonomy history to find what is new and what remains.

We identified two models where autonomy was a distinguishing feature: the Medieval University and the Enlightenment University (Anderson, 2004; de Ridder-Symoens, 1992, 1997; Rüegg, 2004; Verger, 2008; Wittrock, 1993). We study them focusing on the three mentioned dimensions of university's autonomy (corporate, reason and financial). Hence, this reconstruction overlooks other traits of these general models, as well as other models, such as the Imperial University (Charle, 2004; Rüegg, 2004; Verger & Charle, 2012; Wittrock, 1993).

2.1. The Medieval University in Europe: autonomy as a corporation

The Medieval University, born by the end of the XII century, was a student's (*universitas scholarium*) or master's (*universitas magistrorum*) corporation or guild responsible for developing and disseminating knowledge in an ongoing and systematic way.

Privileges, known as liberties and immunities, were granted by secular and religious authorities (Gieysztor, 1992). The Medieval University claimed, like every other guild, the autonomy to be a self-governed institution; autonomy as a corporation. It decided over its members' working conditions and claimed independence from civil justice, the bishop, prince or feudal lord. It developed its own jurisdictions to judge its members, who only accepted these internal rules (de Ridder-Symoens, 1992; Verger & Charle, 2012). It's Rector, whether he was a student or a master, had permission from the Pope to grant degrees. Since its foundation, the internal decision process included deliberative assemblies, formed by students in the *universitas schollarium*, or by masters in the *universitas magistrorum* (Verger, 2008).

The request for corporate autonomy distinguished it (de Ridder-Symoens, 1992; Knowles, 1962; Mondolfo, 1966; Shank, 2003; Verger, 2008). Backhaus (2015b) actually called them semi-states whose members were the citizens. According to Gieysztor (1992), autonomy was understood as the ability to establish its own laws and ensure its compliance, but also as the legal recognition of the university as a corporation in relation to the outside world. We find here the historical background of Piironen's (2013) idea of university's autonomy as an independent institution.

Each Medieval University enjoyed the immediate safe-conduct of the supreme authority which had founded or ratified it (Pope, King or Emperor). The support

of a higher power was indispensable to overcome local resistances. Traditional authorities, mainly bishops and lords wanted to keep their guardianship over the burgeoning institution (Verger, 2008; Verger & Charle, 2012). Local authorities (civil and ecclesiastical) rejected this new guild's autonomy because they could not exert their influence over students and masters. Nor they could decide on university matters, even though they were settled in their territory. This tension led to hostilities from and confrontations with bishops and feudal lords (Carrasco Pérez, 2015; Cobban, 2002; Dmitrishin, 2013; Knowles, 1962; Shank, 2003; Verger & Charle, 2012; Webb, 2015).

Therefore, the Medieval University can be conceived as a controversial model. While it enjoyed its own privileges and statutes, it also remained under the Church control and relied on the Pope or Emperor for the assurance of its autonomy from local authorities. While the Pope tried to stop any secularisation attempt, in terms of its internal operations, no authority could exercise much control over teaching, curriculum and knowledge production. Geographical distances between universities and authorities contributed to this limited leeway. Verger (2008) indicates that the Church's monopoly over higher education was broken. This new institution, as any other guild or corporation, administered itself regardless of the ecclesiastical authorities. He continuous explaining that a sense of freedom prevailed among its members, both respecting its self-governing and the content taught.

Since mid-XII century, even under the scholastic method, it is possible to track a search towards free thought introduced by the Latin Translation Movement[1]. The university's curriculum shifted and became devoted to the study of these translations (Grant, 1984; Knowles, 1962; Verger & Charle, 2012). Still, attempts to think outside of the theological framework were censured by different representatives of the Catholic Church (Grant, 1984). Moreover, the

secular ultimate truth, the human authority in knowledge, was held by Aristotle followed by the rest of the great Greek thinkers and their Arab commentators. Thus, the space left for new ideas was narrow (de Ridder-Symoens, 1992).

Finally, financial autonomy, considered as budget sufficiency, was assumed as a condition of existence for corporate autonomy. According to Gieysztor (1992), revenues came both from internal and external sources. Internal sources were: the enrolment and graduation, different waivers and the *collectae* (sums collected by students to pay wages to university's employees, masters included). Regarding external sources, the university benefited from the support of the Church when masters belonged to the clergy. Additionally, they received wages paid by secular authorities as well as gifts, donations, grants and endowments.

Overall, the Medieval University was crossed by strong disputes concerning its autonomy. During the following centuries, European universities could not adapt with their society. Between the end of the XIV and the XVIII century included, different authors agree that the quarrels between the medieval humanism and the Renaissance, and later between the catholic church and the protestants accelerated the crisis of the Medieval University (Hammerstein, 1996; Oberman, 1984; Spitz, 1984). Nation-states also spread their influence, and control the universities in their territory, jeopardizing their corporate autonomy (Bermejo Castrillo, 2008; Cobban, 2002; Gieysztor, 1992; Hammerstein, 1996; Nardi, 1992). The transition to the Enlightenment University took place in a context of deep deterioration and strong social rejection (Anderson, 2004; Bacin, 2008; Grant, 1984; Morgan, 2011; Perkin, 2007; Rüegg, 2004).

2.2. The Enlightenment University: highlighting autonomy of reason

Driven by the Prussian Idealists of the second half of the XVIII and the beginning of the XIX century (especially Kant, Fichte, Schleiermacher and Schelling), the European university was hugely transformed, adapting itself to science's secularisation (Bahti, 1987; Dmitrishin, 2013; Oncina Coves, 2008; Rikap, 2014; Rüegg, 2004; Wittrock, 1993). The idea of a university where science is produced and transmitted autonomously can be thought as the embracement of one of the Enlightenment's distinguishing features (Cassirer, 1951; Levín, 2014; Rikap, 2014). Since its main traits respond to the Enlightenment's general spirit of free enquiry, we call it the Enlightenment University. Its main characteristics can be found in Humboldt's (1810) recommendations for the University of Berlin, summarized next.

Knowledge's conception. Science should only deal with concepts in its general and universal dimension, detached from any immediate or direct application. Humboldt (1810) added that students must self-train themselves; in German they must produce their *bildung*. For the Idealist Philosophers, the *bildung* meant self-education, conceived as an individual, collective, social and historical process. In the Humboldtian project, elementary education should provide students the ability to learn, high school should give them a masterful command of the established general knowledge, and university must take care of unsolved problems (Wertz, 1996).

In line with Kant's (1798) proposal, Humboldt believed that the Philosophy Faculty should be the university's benchmark (Abellán García, 2008). Humboldt (1810) considered the university as the observable form of an idea, spirit or reason that could not be grasped by the senses: w*issenschaft,* which can be translated as "science as a unit". According to Bahti (1987), this meant that knowledge was a never-ending process.

Unity of teaching and research. Humboldt (1810) considered teaching as the anticipation and purpose of every investigation as well as the natural destiny of achievements. Professors should base their teachings in their research, and student's research was considered fundamental for their self-training (Abellán García, 2008; Morgan, 2011). Humboldt (1810) stated that professors and students together, led the former by the latter, should carry out joint research. Masters were expected to convey the spirit of fundamental research, to develop passion for knowledge production and to contribute to the organisation and transformation of human experience (Schleiermacher, 1808).

Autonomy of reason, and the principle of 'solitude and freedom'. Humboldt (1810) tried to divorce the university from the Church. As Oncina Coves (2008) summarised, religious chains ought to be broken forever. The centrality given to university's autonomy also implied a demarcation from nation states' political tutelage. For Humboldt (1792, 1810), the university as an autonomous institution had to be a self-governing community. Hence, corporate autonomy can be conceived as an adaptation of its Medieval University meaning. While the latter meant to be autonomous from the King, Pope, Emperor and/or Feudal Lord, the former pursued its autonomy from nation-states.

Autonomy was not only a corporate matter. Humboldt recovered the idea of autonomy to think and know from Kant (1784) and Schleiermacher (1808) (Bermejo Castrillo, 2008; Morgan, 2011). In Humboldt's (1810) project, autonomy of reason included freedom to study for students; they could choose their professors and curriculum. It also meant freedom to teach; without echoing political or ideological pressures. In short, freedom to learn and to teach were supposed to be granted (Anderson, 2004; Bermejo Castrillo, 2008; Morgan, 2011).

To ensure the alleged autonomy, a sufficient budget was vital (Humboldt, 1792, 1810). Public funds had to be one of universities' main economic sources. But, as states must not restrict universities' affairs, Humboldt (1792) suggested that lands had to be granted to the University of Berlin by its Sovereign. This proposal was never achieved (Rüegg, 2004).

By the end of the XIX century, the Enlightenment University was the pursued model in major parts of the world, from the United States to Japan (Rüegg, 2004; Wittrock, 1993). John Hopkins introduced it to the United States' research universities in the 1870's (Currie, DeAngelis, de Boer, Huisman, & Lacotte, 2003). The United States' version added extension or public service as a mission (Backhaus, 2015a; Marginson, 2014a; Wittrock, 1993). According to Marginson (2014b), the research university reached most of the world by copying its United States' version. Furthermore, it was there where the transformations towards the market university started (Berman, 2011; Slaughter & Leslie, 1997).

Budget constraints limited the autonomous exercise of knowledge production in universities following the Enlightenment model. Moreover, they faced various restrictions due to state's impositions and to Civil Society's pressures (Gerod, 2004; Rüegg, 2004). The three main features of the Enlightenment University were challenged by the growing influence of nation states that rejected the idea of fully autonomous universities in their territories (Klinge, 2004; Verger & Charle, 2012; Wittrock, 1993). It became evident that, at least in western Europe, universities' faith was attached to their corresponding state's desires and that the latter expected to influence teaching and research, thus challenging reason's autonomy (Torstendahl, 1993).

Furthermore, the Enlightenment University cohabited with the Imperial University and with other higher education institutions, such as the community and liberal art colleges in the United States. Between 1860 and 1940, Charle (2004) and Wittrock (1993) explain that, while the influence of the Enlightenment University was increasing, university systems became diversified, expanded themselves and were professionalized. By the time when market mechanisms were eagerly developed, the idea of a single university model was probably an oversimplification.

The United States' Carnegie Foundation classification for higher education institutions was pointed out by McCormick y Zhao (2005) as an example of this diversification according to the type of degree and the contents and scope of their training. Part of our intension in the next section is to conceptually integrate pre-existing diversified systems with another typology that we suggest is a result of how teaching and research are being commodified since the 1970's in the United States, including the privatization of research results encouraged by the Bayh-Dole Act in 1980 (Berman, 2011; Mowery, 2005). A process that has spread worldwide since then, with differentiated impacts on university's autonomy.

3. The Differentiated Market-University: three university types for analysing the implications of universities' adoption of capital enterprise's features.

In western history, as we have shown, autonomy was not a given, but a project to be developed in and by universities. In the Medieval University, religious and feudal authorities challenged, and even tried to forbid, universities' autonomy. Later, while the Enlightenment University was spreading, nation states also aimed to subordinate their universities. Hence, the power or authority that

historically challenged western universities' autonomy was political (either religious or secular).

As we will try to show in the rest of this article, the challenges that universities face in the present context not only come from political powers, but also from capital enterprises that, following Levín (1997), have developed asymmetrical or power relations in the market. Thus, even if there is a continuity respecting universities' embracement of their autonomy, the nature of current challenges and universities' responses differ. We will suggest that those responses are not homogeneous, expressing different types of market-universities. Next, we briefly describe current capitalism in order to contextualize our proposed typology, which will be explained afterwards considering both university's autonomy and capitalism's present traits.

3.1. From capital enterprises' differentiation towards a differentiated market-university.

Our taxonomy is built after Levín's (1997) theory of present capitalism where some private enterprises have differentiated by dominating the innovation capacity of their branch. He calls them enhanced capital enterprises. On the contrary, those that have lost that capacity, and just try to adopt innovations, are called by the author simple capital enterprises. Simple capital enterprises present, in relative terms, the worst labour conditions (Gonilski, 2013; Graña, 2014).

Under this framework, each enhanced capital enterprise plans the production process of all the other enterprises under its domain (Levín, 1997; Piqué, 2016). Planning means that the enhanced capital company decides the kind of product, its quantity, and the technique of production of its dominated enterprises. It also defines clauses of exclusivity and commercial credit conditions. It does so by

imposing transaction conditions, both as a buyer and as a seller, through sign-up contracts where each simple capital enterprise has only one choice: accepting or refusing the agreement with all its clauses already predefined by the enhanced capital enterprise (Cazenave & Gonilski, 2016; Levín, 1997).

Enhanced capital enterprises outsource non-core departments because it is more effective (in order to get a bigger amount and rate of profit) to dominate enterprises without having to take care of their risks. Through the Global Value Chain approach, other authors have also identified these processes and tried to determine the patterns by which leading enterprises appropriate most of the profits that are generated inside those chains (Carballa Smichowski, Durand, & Knauss, 2016; Contractor, Kumar, Kundu, & Pedersen, 2010; Gereffi, Humphrey, & Sturgeon, 2005).

In Levín's (1997) hierarchy there is a third type: the "technological capital enterprise". It participates in innovation circuits, which are planned by enhanced capital enterprises. An innovation circuit is defined as the interlocking of all the actors and institutions that, through integrated phases, produce an innovation, from the basic research discovery to the required industrial adaptations to adopt the innovation (Levín, 1977). Technological capital enterprises are unable to keep all the profits that derive from their innovative activity, which are appropriated by the enhanced capital enterprise that dominates the corresponding innovation circuit (Levín, 1977; Piqué, 2016).

3.2. The differentiated market-university

Taking this general economic framework into account, we suggest that university's adoption of enterprise characteristics is also a differentiated process.[2] Between a generic market-university model and the specific institutional level we will argue that it is possible and useful to acknowledge

three types of market-universities. In this context even if universities still play a central role in the production and dissemination of human culture, we will suggest that these historical missions are under a threat as universities' adoption of capital enterprises features becomes a prevailing trend, in spite of multiple resistances.

Our typology aims to explain what we define as an external differentiating mechanism. We focus on universities' differences in a context that was alien to the Medieval and the Enlightenment University: the economic or market sphere. Our typology is based on the idea that universities' collaboration with capital enterprises assumes three different forms. In this respect, it differs from those typologies interested in acknowledging what we could define as universities' internal stratification (Marginson, 2006; Rosinger, Taylor, & Slaughter, 2016; Taylor, 2016). By internal stratification we refer to differences concerned with the traditional university's sphere, while the external differentiation refers to universities' differences when they integrate to previously considered non-university, thus external, spheres of society.

Hence, considering private enterprises' differentiation (Levín, 1997), we suggest that university's adoption of enterprise characteristics has development a Differentiated Market-University integrated by three university types. Each of them corresponds to an enterprise type in Levín's (1997) typology: the Single Purpose, the Technological and the Enhanced University.[3]

The Technological and the Enhanced Universities produce science and technology as a core function. But, as we have seen in the previous section, science production was a key function of universities under the Enlightenment University model. What has changed is that they are now integrated to innovation circuits.

Since the end of the post-war, the United States seemed to be lagging behind other countries, particularly Japan. Therefore, especially since the 1970s, university knowledge production became a key asset for economic growth. Knowledge production was increasingly geared towards research lines that reported higher profits, while universities were pushed to collaborate with private enterprises (Block, 2008; Dasgupta & David, 1994; Marginson, 2014b; Muscio, Quaglione, & Vallanti, 2013; Pestre, 2003). These changes prepared what Gibbon's (1998) called the Mode 2 of knowledge creation, in which there is no gap between discovery and application.

In our taxonomy, both the Technological and the Enhanced Universities commoditize knowledge. They can sell their research capacity, become enterprises that sell products that result from their research (spin-offs and university-run enterprises) and/or patent and license their outcomes. However, as well as the enhanced capital enterprise, we suggest that only the Enhanced University dominates innovation circuits. It keeps a significant part of its innovation's economic benefit. On the contrary, the Technological University loses that economic profit, which is gathered by the enhanced capital enterprises that dominate the innovation circuits in which it participates. Thus, the Enhanced University should also be capable of limiting private appropriation of its partial results by using strong standardised mechanisms that transform those results into patentable and marketable products.

By contrast, the Single Purpose University, in line with simple capital enterprises, does not participate in innovation circuits, but only in commodity exchanges with private enterprises in a subordinated position. These universities have either lost their research capacity or never had it. A third possibility would be to have a non-commodified research activity.[4] The Single Purpose University's goal is the professional qualification of labour power. To do so,

they orient teaching towards enterprises' interests, while the share of tuition fees in total budget increases. From the Enlightenment University's stand point we could argue that when faculty does not investigate, teaching loses a complementary source of creativity as they will not be exploring and trying to deal with the unsolved problems of the taught results.

In line with simple capital enterprises, we suggest that in universities where scholars are not civil servants, the Single Purpose University should be the type where faculty has the worst labour conditions. As an example, private universities in Tunisia are for profit and focus on teaching. All these institutions hire a huge majority of their faculty as temporary faculty (Boughzala, Ghazouani, Hafaiedh, & others, 2016).

Without differentiating among types of universities, various authors have shown that faculty working conditions are deteriorating, attending to increasingly flexible or precarious contracting forms (Hendricks, 2005; Schapper & Mayson, 2005). Our typology contributes to explain why worse labour conditions are not a universal trend. Top world ranking universities still assure traditional benefits, or at least they do so in a significant major percentage. For instance, Harvard Medical School has 76% full-time faculty and all faculty contracts last, at least, five years (Harvard Medical School, 2012).

The Single Purpose University could also be a useful type for analysing market-universities that still do research, but not as a core activity. In these cases, when they develop collaborations with private enterprises, we may expect a prevalence of mainly routine activities, such as technical assistances or high complexity advices, and even renting facilities, as the other types of universities will be preferred for challenging (and expensive) new investigations.

It could be said that in the Technological and the Enhanced University the Enlightenment University's idea of teaching and research as a joint activity survives. Nevertheless, market-universities of any kind, in particular when they sell higher education, will tend to reorient courses of study especially considering the demands of enterprises that will then hire their graduates. Anyway, the Enhanced University has the resources, for instance using their endowments, to sustain non-profitable (or not so profitable) fields. Taylor et al (2013) observed that top elite universities in the United States follow that path to fund humanities. Enhanced Universities also train their own future researchers and have resources to orient their paths according to their top management's priorities.

The consequences of the Differentiated Market-University for university's autonomy are explored next, by considering the three dimensions formerly identified in our historical reconstruction.

3.3. Can we consider different Market-Universities as autonomous institutions?

In a context of falling block-grants and rising costs (Altbach, 2006; Johnstone, 2009; Michael, 2005; Slaughter & Leslie, 1997), a major concern for the three proposed university types is to assure financial autonomy. Although they influence research lines, private funding and competitive public grants appear as alternatives to avoid budget constraints (Castro-Martínez & Sutz, 2011; B. Clark, 2004; Michael, 2005).

Therefore, we suggest that only Enhanced Universities are financially autonomous because they enjoy enough resources. They keep their research results' associated profits and dominate innovation circuits, assuring funding from different private enterprises. We could say that neither the Single Purpose, nor the Technological University are financially autonomous because their

budgets per student are smaller and struggle against shortcuts. Furthermore, in order to get resources to teach and, in the latter, to do research, they subordinate themselves to enhanced capital enterprises.

Concerning autonomy of reason (or academic freedom), different scholars insist that universities' autonomy to orient research is eroded when actors from outside influence their agenda. Private companies provide resources according to their own interests, and the state decides its support in line with its own priorities (Arocena, Göransson, & Sutz, 2015; Castro-Martínez & Sutz, 2011; Furstenbach, 1993; Kleinman & Vallas, 2001; Slaughter & Leslie, 1997). Consequently, disciplines with potential commercial value are prioritised (Altbach, 2013, Chapter 32; Kleinman & Vallas, 2001; Mowery, 2005; Sutz, 2005). In this context, fundamental or general questions that do not capture those enterprises' attention, but maybe scientifically relevant, could be set aside or postponed. Summing up, academic freedom is in danger because privately funded researchers address the interests and requirements of their financiers (Bok, 2003; B. Clark, 2004; Kleinman & Vallas, 2001; Lee & Miozzo, 2015).

Are these restrictions to academic freedom equal for all our proposed types? As we have said, reason's autonomy was understood in the Enlightenment University as the capacity to freely teach, learn and do research. Therefore, in the Single Purpose University, where research is not a central activity, academic freedom is constraint since the teaching-research activity was split. Furthermore, even if pedagogical innovations and other forms of creativity can still be incorporated in the Single Purpose University, academic freedom to teach is also in danger as degrees are increasingly oriented to fulfil specific labour market needs, limited due to budget constraints and specially compromised by precarious labour conditions (Metzger, 1990). However, when there is still a research activity (even if in terms of budget and quantity of

researchers engaged it is comparatively minor), it may be freer since enhanced capital enterprises will be less interested in it.

In the Technological University scholars do both teaching and research. However, autonomy of reason is jeopardised when they fulfil private enterprises' needs and also due to budget constraints. Autonomy of reason is also constraint in the Enhanced University. Being financially autonomous is not enough to assure scholars' academic freedom. In accordance with the decision-making structure of enhanced capital enterprises, we suggest that in the Enhanced University research lines are defined by top senior managers, either professional staff or academics that will not be then performing the research. Moreover, they will probably tend to guide research towards the satisfaction of external needs in order to maintain their leading position. Thus, even though researchers may enjoy enough resources, it is likely to say that they constrain their investigations to comply with those underlying requirements.

Regarding corporate autonomy, states have assumed an evaluative role towards universities, which questions the ideal of a self-governing institution (Neave, 1988, 1998, 2012). Furthermore, in Latin America states are influenced by general guidelines and criteria established by international organisations such as the International Development Bank, the World Bank and the UNESCO (Buchbinder & Marquina, 2008). States can also play a market-accelerationist role, such is the case in Singapore (Mok, 2011). Thus, corporate autonomy is also at risk.

An open question is whether the evaluative state influences differently universities, and whether our proposed typology is useful for identifying those differences. We may anticipate that, as Single Purpose Universities are not elite or top institutions, they will probably have a greater self-governing capacity. On

the contrary, Technological Universities whose national governments aim to transform them into top institutions may be subjected to more accreditation and quality controls, reducing their self-governing capacity. Finally, in the Technological, but especially in the Enhanced Universities it is possible to consider that self-government has been challenged by the presence of leader companies' CEOs and managers in their administrative boards or councils. Contrary to the Medieval and the Enlightenment Universities, where internal government bodies were only integrated by university members, there is a tendency towards inviting leader companies' representatives.[5] It is less probable that these enterprises will accept such an invitation from Single Purpose Universities.

Overall, can we keep talking about university's autonomy? In our taxonomy, the Single Purpose and the Technological Universities are subordinated to enhanced capital enterprises. Furthermore, only the Enhanced University is financially autonomous. However, this is not enough to guarantee its academic freedom. On the contrary, being successful in the market could lead to a quicker transformation into a private *academic enterprise* (Larsen, 2011).

In order to further explore the explanatory capacity of our typology, next we briefly point out a possible example of each of the Differentiated Market-University types.

3.4. Insights on the fruitfulness of the Differentiated Market-University for particular analyses

It is possible to think of the University of Buenos Aires (UBA), Argentina's flagship university, as a Single Purpose University. As explained by Buchbinder (2005), the UBA has been historically influenced both by the Enlightenment and the Imperial Universities. Following the former, it broke the ties with the

state after the 1918's University Reform, which granted corporate autonomy to national universities. Since then, the UBA is governed by bodies of representatives integrated by faculty, undergraduates and graduates. That corporate autonomy also encouraged the UBA to defend and battle for its academic freedom throughout the XX century. Nevertheless, it remained mainly as a teaching institution.

Since the end of the 1980s it was allowed to fund itself with own resources. While its research faculties, in particular the Sciences and the Social Sciences faculties, for the most part refused to do research in collaboration with industry or provided mainly technical assistances and other routine activities, the predominantly teaching faculties headed the commodification process. The UBA's most important own funding sources are not linked to its creative research activity. In 2012, training agreements represented 37% of total own resources, followed by tuition and fees (25.7%), and hospital fees (14.6%). Meanwhile, technology transfer agreements only represented 3.8% of total own resources (Rikap, 2017). Additionally, according to the CWTS Leiden University Ranking, between 2009 and 2012, among the UBA's articles that were co-published with other organizations, just 1.9% included business enterprises, reinforcing the conclusion of a weak research link with private enterprises. Thus, the UBA can be considered as a Single Purpose University, where teaching and associated services are leading the commodification process.

While the UBA is a good example of how history contributes to determine the type of market-university adopted, the experience of the National University of Singapore (NUS) shows how a strong public budget can overcome heritage, transforming a historically teaching only institution into a research market-university (Wong, Ho, & Singh, 2007). However, the type of market-university

achieved seems to be the dominated Technological University. As shown by Rikap et al (2017), the NUS is facing serious problems concerning research results' commercialization. Patents shared with enterprises are not appealing for other private producers as the enterprise that co-owns the patent enjoys it for free, without the obligation of sharing the profits with the NUS. Thus, even if formally those patents are shared, only enterprises co-owning them enjoy the economic profits. In fact, the Singaporean government's "Research, Innovation and Enterprise 2020" plan focuses on the valorisation of research acknowledging that their increasing public R&D investments are not reporting the expected economic returns to public universities, nor to the public government.

In general, concerning Singapore, commodification was fostered by the government, aiming to transform higher education into a business. The focus on offering different kinds of teaching commodities (E-learning, executive education, traditional undergraduate and graduate degrees, etc.) shows how the government encouraged a differentiated market-university strategy where only some universities (mainly the NUS and the Nanyang Technological University) are devoted to commodified-research, while most institutions focus on selling higher education, particularly to foreign students who pay full-tuition (Ministry of Trade and Industry, 2002), more in line with the Single Purpose University type.

Finally, according to Rikap (2016), the University of Harvard, in particular Harvard's Medical School is an example of a market-university that is capable of keeping the economic profits of the research it performs, even when research has been significantly funded by private sources. Its strong intellectual property rights guarantee that the university will always be the sole owner of potential results. Harvard is also financially autonomous. It succeeds both in terms of

private sponsorship and public competitive funds for research, and has the biggest university endowment fund. The latter allows Harvard to orient teaching and research according to the priorities decided by its top-down decision-making processes, even if multinational corporations are part of its boards.[6] All these characteristics correspond to the Enhanced University. Moreover, it can be said that Harvard's historical leadership was a better starting point to plan and organize innovation circuits.

Having developed the main features of our proposed typology and after briefly showing how it contributes to study empirical cases, we address below how it complements academic literature.

3.5. Complementing the existing literature on universities segmentations in the present.

The academic literature has conceived different models for studying universities in the present, such as the entrepreneurial university (B. Clark, 2015; B. R. Clark, 1998; Etzkowitz, 2008; Etzkowitz, Webster, & Healey, 1998), the academic enterprise (Larsen, 2011) or the market-university (Berman, 2011). The general process embracing universities' recent transformations was called the commodification of teaching and research (Harari-Kermadec, 2013; Harvie, 2000; Nowotny, 2005; Pestre, 2003; Sotiris, 2012, 2014). Furthermore, the broad context in which university's transformations take place was called academic capitalism (Slaughter & Leslie, 1997; Slaughter & Rhoades, 2004). One thing all these approaches have in common is that they consider market or entrepreneurial transformations as a global or general trend.

Currie et al (2003) share this view. They considered globalization (understood as the adoption of neoliberal policies) as a homogenizing tendency impacting on pre-existing different higher education institutions. As they were already

heterogeneous, that homogenizing process had heterogeneous consequences at institutional and country level. The survival of different national higher education systems, in spite of homogenizing pressures (such as the Bologna Process in Europe or the general trend of globalization), was studied by other authors too (Guri-Rosenblit & Sebkova, 2004; Slaughter & Cantwell, 2012).

Considering internal mechanisms of stratification impacting on higher education institutions, Bleiklie (2011) distinguishes between horizontal and vertical differentiations. The former is used to distinguish between the different subjects being taught, which is not a new phenomenon. In the Medieval University, the Philosophy Faculty was considered as the inferior faculty. It was supposed to be subordinated to the demands of the superior faculties (Medicine, Law and Theology, especially the latter) (Verger & Charle, 2012).

Vertical differentiation identifies different degrees and institutions' quality and status. It focuses on the spread of internal polarisations between top universities (defined after accreditation, ranking and/or competitive funding mechanisms) and the rest of the system, in particular with non-university institutions such as vocational and liberal colleges (Bleiklie, 2011). In the United States, according to Taylor (2016), government's R&D policy is strongly linked with universities' stratification because winning competitive research grants and contracts confers status and revenues.

Paradeise and Thoeing (2016) developed a typology based on how universities (and *Grandes Écoles*) produce quality responding to reputation and excellence criteria, regardless of the market mechanisms or enterprise's characteristics adopted. Similarly, looking at differences among universities' status or reputation, Marginson (2006) elaborated a segmentation inside higher education systems. He suggested three segments for national systems and five for the

global system. Elite research institutions are on top of both segmentations. Indeed, there has been a growing interest in this top universities, called Top of the Pile (Paradeise & Thoenig, 2016), World-Class Universities (Marginson, 2016; Salmi, 2009; Salmi & Liu, 2011) and World Class Global Research Universities (Marginson, Kaur, & Sawir, 2011).

Still, vertical differentiations are not a new phenomenon. Norms, traditions and cultures have differentiated higher education institutions, including universities, since they were created. For instance, among Medieval Universities, the University of Bologna was a student corporation, while the universities of Paris and Oxford were master corporations. Moreover, since nation-states were created, they adopted dominant university models shaping them with specific traits, such as the previously mentioned case of the Enlightenment University in the United States. It was precisely in this country where research universities versus mass teaching institutions conformed, with other institutions, a hierarchical systems put in place since the 1960s (Taylor, 2016, p. 69), while the policies that triggered the development of a market-university in this country arrived, at least, a decade later (Berman, 2011; Mowery, 2005).

Nevertheless, though horizontal and vertical stratifications have historically characterised universities, Marginson (2006, 2016) shows that differences in status or prestige increase responding to a fiercer national and global competition. In fact, the emphasis on competition between universities and the move from block-grants to competitive grants encouraged a further development of that pre-existent stratification (Marginson, 2016; Rosinger et al., 2016; Slaughter & Cantwell, 2012; Taylor, 2016). Meanwhile, world rankings foster universities' stratification globally (Harari-Kermadec, 2016; Hazelkorn, 2015; Marginson, 2016). Yet, the universities in the top places of world rankings already had a reputation of top elite institutions before world

university rankings were put in place (Paradeise & Thoenig, 2016; Salmi & Liu, 2011).

Hence, we believe that horizontal and vertical stratifications can be complemented with our typology which aims to study the development of a new form of university differentiation. Our emphasis is not on competition and subordination among universities themselves, like Marginson (2006, 2016), but mainly between universities and capital enterprises.

Summing up, authors have overlooked commodification as a differentiating process in itself. We consider that universities' adoption of enterprise characteristics, even if it is a general trend, it is not a homogeneous process. Different universities are copying different types of enterprises, adopting dominant or dominated market places. In simple words, some universities are market leaders and can impose conditions when they sell higher education and research. Meanwhile, others have no other market choice but to accept enhanced capital enterprises' conditions (directly or indirectly) reducing profits, but also compromising their autonomy. This is the case of the Single Purpose and of the Technological Universities. In the case of the Enhanced University, its financial autonomy is similar to the enhanced capital enterprise's autonomy. It has the financial freedom to impose transaction conditions and to plan innovation circuits, being less and less a university and becoming more and more a private enterprise.

4. Concluding remarks

In this article we developed a university typology that results from studying university's autonomy throughout western history and from acknowledging capital enterprises' differentiation. We suggested that higher education and knowledge commodification have not equally impacted on every university. We

proposed a differentiated model composed of the Single Purpose, the Technological and the Enhanced University, and we analysed universities' autonomy in this scenario.

In the Single Purpose University, commodification is focused on its teaching function, both by increasing or developing tuition and fees, and by reorienting courses of study according to private enterprises' needs. The Technological and the Enhanced Universities also orient teaching towards market demands, but they additionally experience, differently, the consequences of knowledge commodification. The Enhanced University dominates innovation circuits, keeping a significant part of its innovation's economic profits. On the contrary, the Technological University loses its innovation's economic profits, which are gathered by enhanced capital enterprises.

We reconstructed universities' western history to contribute to explain these transformations and their impact on university's autonomy. To begin with, we may say that the Medieval and the Enlightenment Universities were not considered as part of each of their societies' economic spheres, as it is the case of the Differentiated Market-University. The former models did contribute to their respective economic spheres but as exogenous providers of professionals and fundamental knowledge. As Slaughter and Leslie (1997) pointed out, under academic capitalism universities' frontiers were blurred by the market.

Furthermore, it is possible to say that the Enlightenment University's main characteristics were set aside in the Differentiated Market-University. In the Single Purpose University, reason's autonomy is mutilated because it lacks a central research function. Unstable labour conditions and budget constraints also contribute to diminish academic freedom. Nevertheless, the lack of private interest in Single Purpose Universities' research activity gives them some

degrees of academic freedom if they manage to keep doing research. Moreover, opposing to the Enlightenment University, the Technological and Enhanced Universities are not primarily dedicated to fundamental research. They are increasingly motivated to follow commercially attractive research lines. Concerning the Technological University, autonomy of reason is not only jeopardised when they fulfil private enterprises' needs, but also due to budget constraints. We also argued that in the Enhanced University research lines are defined by top managers in a hierarchical decision-making structure. They will probably tend to guide research towards the satisfaction of external requirements to maintain their leading position. Hence, it is likely to say that they also constrain their investigations in order to satisfy private needs, risking academic freedom.

Until here we have stressed on history's discontinuities. Still, our reconstruction of university's western history illustrates that this institution has always struggled for its autonomy and that, more often than not, university's autonomy was an ideal, the horizon that guided scholars and students. Under the influences of the three models scholars and students have fought against superior powers' impositions: first the Catholic Church (and also civil authorities of the middle age), later national governments that wanted to influence the universities they were funding, including nowadays capital enterprises (particularly enhanced capital enterprises and states acting as such). For all of them, universities have been a threat and a feast. Controlling universities is a way of controlling how a central part of human culture is produced and transmitted.

The Differentiated Market-University adds an extra flavour to the university feast because the Technological and the Enhanced Universities are key producers of innovations triggering greater economic profits. University results

in our model are not deployed to the whole branch, as was the case for instance of the Wisconsin University and the institutions that followed its lead in the past. In this latter case, universities helped all the producers of a particular commodity to improve production technics, thus all the producers benefited from the result (Cummings, Fisher, & Locke, 2011; J. Stark, 1995). On the contrary, when the technological universities participate in innovation circuits, resulting profits are appropriated by enhanced capital enterprises, or shared with them in the case of the enhanced university.

Finally, recognizing a tendency towards the Differentiated Market-University does not mean that every single activity, in every university will be dominated by commodification. In fact, universities' history also shows us that universities left aside part of their corporative heritage and became involved not only with capital enterprises' requirements, but also in counterhegemonic initiatives. The battle for universities' autonomy is not a battle against everything outside their walls. There are and have been plenty of examples of scholars and students strongly committed to produce a better society, using universities as one of the institutions capable of contributing to accomplish it. For instance, the University of Buenos Aires, in spite of being a Single Purpose University in many respects, also has an important extension activity. We thus suggest that the survivals of the quest for autonomy of reason and community service can be considered as countertendencies to commodification that should be encouraged by students, faculty and by those governments recognizing the need to go against the current.

All in all, our ambitious and bold scope may have been a disadvantage for deepening in all the mentioned transformations. However, papers on these matters tend to focus too much on particular or specific phenomena. Thus, their risk is the opposite: not been able to suggest interpretations for studying the

whole picture. Anyway, there is no doubt that the Differentiated Market-University needs to be further developed. It also needs to be widely empirically tested. Ours is just a preliminary analysis that we expect to rework in the near future.

Notes

[1] The Translation Movement, which translated Ancient Greek authors and their Arabic commentators to Latin, began in the tenth century. However, the translations of the texts that were introduced to the Medieval University, particularly the works of Aristotle, date from the twelfth and thirteenth centuries.

[2] We will ignore each university's particular traits as well as national system's specificities (Marginson, 2014a), including differences in the degrees in which particular institutions or national systems adopt these transformations.

[3] A more detailed presentation of this typology can be found in Author (2017).

[4] In Latin America, this could be the case of the Facultad Latinoamericana de Ciencias Sociales which charges tuitions and is aware of labor market needs when training graduates but, at the same time, does not foster university-industry collaborations.

[5] Airbus top representatives integrate the administrative council of the Université Paris Saclay. Moreover, Barringer and Slaughter (2016) analyze the presence of leader enterprises in United States' top universities' boards.

[6] For instance, Kenneth I. Chenault, who has been the president and CEO of American Express since 2001, is a member of Harvard's board of overseers since 2014.

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