
THE SPANISH UNIVERSITY SYSTEM WITHIN ITS EUROPEAN CONTEXT

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To my little Luna, hoping that, should she wish to study in Spain in 15 years, it would be an excellent choice

Introduction

One wonders if it makes sense to write yet another essay on the Spanish university, given the abundance of literature on the subject and the fact that its influence on the politicians who make decisions and on society in general is asymptotically zero. For someone like me, who has been writing on the subject with some frequency for more than thirty years, the doubts about the purpose of this task are even more pressing, and my only excuse for putting them aside, *i.e.* the conviction that there is no worthy future for Spain without a better university, remains valid, so, following what our northern neighbors call the Coué method,¹ I forget the more than probable uselessness of the text and throw myself into writing it, which, to add insult to injury, I am doing with great pleasure.

Of course, this task would be superfluous if I thought that the LOSU, the Spanish Law for the Regulation of the University System, passed last spring, was a good enough law which responded to the challenges facing the Spanish university. But it is not, although this opinion is perhaps more subjective than objective, as it is the case with most opinions on complex social issues, and the university is part of this category. In fact, this short essay is not about university legislation in Spain, which, like almost all politics in Spain, suffers from “consensusphobia”, in the sense that, very much like Penelope, it weaves in one law and unravels in another, trusting that fate or the gods will sort it out; but this essay is rather about certain aspects that, seen from the outside, could be improved if politics and society wanted to.

Since I know the university systems of different European countries quite well, from my experience as President of the European University Association

* This text has been written exclusively with natural intelligence. The comments kindly sent to me by Manuel Atienza, Domènec Espriu, Andreu Mas-Colell and Pablo Salvador have allowed me to improve it; the errors it still contains are the sole responsibility of the author. I owe to Max Lacruz the substantial improvement of my poor syntax and inelegant style, which give away the multilingual theoretical physicist in me.

¹ It is a technique of conscious self-persuasion based on persuasion by repetition.

(EUA) and from my experience as an evaluator and advisor to several European universities, I would like to make it clear from the outset that the Spanish system is not one of the worst ones, and if measured correctly, that is, in relation to its funding, it holds a relatively correct position.² If my opinion was more radical in the past, it is because circumstances have changed, and also because I have learned or changed, perhaps partly for biological reasons or for reasons of perspective.

Nor will I address very serious current issues, such as the role of artificial intelligence in higher education; partly because I have little to add to what has been written on a subject where the number of experts is close to the number of people living on our *pale blue dot*, as Carl Sagan would have said. Nor will I dwell on classic topics, such as the “two cultures” of another physicist, C. P. Snow, *i.e.* the empirical-scientific-technological culture and the humanistic-social culture, because even though it is important for its implications on the funding and evaluation of research –which must take into account this dichotomy of objectives and methods– I do not think that the European perspective contributes anything new.

I have often spoken publicly about rankings, university rankings or university system rankings, but I have little to add to what is already known:

- They are getting better and better.
- Despite this, they are always subjective, due to the choice of indicators and the weight allocated to them.
- They are very popular, both among university policymakers, students, families and employers, and they should therefore be taken into account, albeit in moderation.

I would like to mention, however, how surprising it is that university authors produce and use meaningless comparative statistics. For example, I recently read a paper stating that Spain ranks third in Europe in terms of the quality of its university system. The criterion used was the number of Spanish universities in the top 500 of some European ranking. This criterion excludes most countries, especially those with few but excellent universities, such as the Netherlands.

² The Spanish university is also a system active in European programs, as evidenced by the significant presence of Spanish universities in absolute figures (but modest in relative figures, with respect to the student population) in the European University Initiatives program, financed by ERASMUS+, which was launched on the occasion of a conference held by the French President Macron at the Sorbonne. When will a Spanish president present his ideas for the future at a university?

To state that Spain has a better university system than the Netherlands one has to be very ignorant, plus the fact that these studies are made by university authors is rather worrying. I seem to recall that Spain was also in a better position than France, and although the French system is far from exemplary, it is overall better than the Spanish system. Perhaps the authors were not aware of the results of the policy of university mergers promoted by the various French governments, which has dramatically reduced the number of universities. Do tell me which country you want to be first in Europe, and I will tell you which indicators and weightings should be used to make it so. But relatively meaningful and informative comparisons can also be made using the right type of knowledge and the criteria of scientific methodology applied to comparative studies, which is almost never the case.

I have also spoken and published a number of times about the gender/sex imbalance in the university world. I will not do so here for several reasons, first of all because of its almost unmanageable complexity, which would require an analysis too long for this text. This complexity has increased in this century with the confusion of the very concepts of sex and gender, the multiplication of these genders to astonishing numbers, the combativeness of those who consider biology to be something marginal, and the fact that it has become what English speakers call a red herring, a fallacy that diverts attention from the central issue, which is the presence of women in universities, in leadership positions. In this way, the interest in certain minorities has replaced the interest in a majority: women.

Issues such as the citations received by the scientific work of colleagues, the impact parameters of scientific journals, the millions of publications that no one reads, the "ghost" authors, or the journals that behave like a pop-up shop, will also not be addressed here, since they are global in nature, with no specifically Spanish components. However, it is worth recalling the work of the Coalition for Advancing Research Assessment (CoARA) and the San Francisco Declaration on Research Assessment (DORA) and learning about their recommendations.

The precariousness of a large part of the PhDs employed in universities (postdocs, junior researchers, even assistant professors and tenure-track faculty) is not a typically Spanish problem, so it will not be considered here either, except in a more specifically Spanish aspect, despite its great importance. It is more of a problem of supply and demand, insufficient funding, the relative appeal of academic work, the large number of PhDs graduating from universities and whether one has an elitist or a populist vision of the university.

As I said at the beginning, this essay is based on my opinions, which I believe to be justified, but it is not a study. Therefore, I will only mention a few books and papers that have nourished my thoughts,³ but almost everything I know about this subject has its origin in a large number of diverse and sporadic readings, conversations and discussions, only some of them formal, that have accompanied my long academic life. These sources will not be acknowledged,⁴ I could not do so even if I wanted to. Many Spanish rectors have written on this subject at the end of their tenure; the variety of points of view gives an idea of the complexity of the matter.⁵

Conflict of interest is also a fairly common problem in academia, and I think it is rather serious. The biases that characterize us all to a greater or lesser degree can only be mitigated by applying scientific methodology to the fullest. I would like to believe that I am doing this where possible. In my case, these conflicts or biases come from my capacity as professor and vice-rector of the University of Barcelona, president of the CSIC in Madrid, rector of the University of Luxembourg, president of the commission of international experts that prepared a report on universities for the Spanish government (Tarrach, 2011), president of the European University Association in Brussels, member of the Governing Board of the Nebrija University in Madrid, and president of the Advisory Board of the University of Lorraine in Nancy.

It is to be expected that after almost 20 years living in Luxembourg, my knowledge of Spanish universities has become somewhat blurred, and that despite a hundred or so trips⁶ to Spain, I am not familiar with some recent developments. I ask for your understanding and indulgence for these shortcomings.

The University and Research System in Spain: Some General Problematic Aspects

I would like to begin by recalling the importance of primary and secondary education. In fact, they are more important than tertiary education because

³ Boulton and Douglas (2008); Elkana and Klöpffer (2012) and Weber (2015) are examples of interesting readings. (Aghion *et al.*, 2008) is a pertinent reading. (Salmi, 2009) is for the ambitious reader.

⁴ With two exceptions: during my time in Spain, which I enjoyed very much, I learned a lot from Josep Maria Bricall and Andreu Mas-Colell, both economists.

⁵ I must also admit that I could not resist this impulse (see Tarrach, 2020), although my text is more anecdotal-humoristic. Academia, because of its peculiarities, lends itself to humor, even to satire: remember the great books by David Lodge or *El virus de la gloria* by Marià Alemany.

⁶ I must be contributing with them to the increase of the atmospheric temperature, between a pico and a nanodegree, less so to oceanic one; it seems not much, but it is since I am just an individual.

students are captive there, whereas university students can easily dodge bad teachers by not attending class or by replacing them with excellent courses available online or great books. The increased probability of failure and dissatisfaction caused by incompetent primary and secondary school teachers must have enormous social and individual costs, although I do not know about any serious studies on the subject. A bad math teacher can take away a student's desire to learn or drastically reduce the likelihood of pursuing many of the degrees on offer by poisoning the student's relationship with calculus, statistics, probability, quantification, and understanding of orders of magnitude. In the course of their careers, a thousand students may pass through their hands, causing a real social disaster. In fact, something similar happens with foreign languages. There is knowledge, such as languages, *i.e.* mathematics and foreign languages, that must be acquired in childhood and adolescence because by the time one reaches university, it is too late, as this type of learning is ineffective, even impossible for some, in adulthood. There is a bias in the perception of the importance of an activity, which negatively correlates the number of people who do it with its importance and, therefore, with its remuneration. For financial reasons, it is difficult to do otherwise, but a serious analysis would recommend paying primary and secondary school teachers more than university lecturers, except for a minority of the latter: on the whole, society would benefit. Due to its utopian and outdated nature, I will leave this subject here, although I would like to point out that some of the problems of Spanish universities have been inherited from pre-university education.

The massification that characterized the Spanish university decades ago, and which reached its peak in this century, has meant universal access to higher education and, therefore, added value for society, although it has some less positive characteristics that should be taken into account by policymakers:

- The number of students depends excessively on the job offer at the time: when young people can readily secure remunerative employment, many decide to dropout, a decision that can have significant personal, social, and economic consequences in the long term. This behavior reflects a lack of genuine motivation to pursue higher education. However, it can also be interpreted in a positive light, assuming that those who drop out are primarily individuals who are not interested in pursuing a university degree, who would be happier with an activity that does not require a university degree, and who are correcting a wrong decision that would waste more of their time. Those who dropout would therefore be those who decided to study only "because I have to do something."

- The recent and foreseeable demographic evolution, the cheerful and somewhat erratic, overly localistic university founding policies of the past, as well as the rise of hybrid and online teaching, have left classrooms empty. In a state of autonomies, it is unlikely that this problem will be solved by going to the root cause. Therefore, it is necessary to look for the opportunities presented by this situation, such as the implementation of a serious policy of internationalization of the student body. Given the international appeal of Spanish university cities, the climate (although this can change, in fact it already seems to be changing), the *savoir vivre* and the Spanish language, success is almost guaranteed. For the Spanish economy it can mean access to much-needed and welcome international talent.
- The massification of universities logically led to a correlated increase in the number of university teachers and researchers, and inevitably, for statistical reasons (assuming they were always the best possible), to a decrease in their average level. I do not know whether the nonsensical and wokist views of some university lecturers reflect this trend, if they are due to social media, or if they are simply more visible today than in the past, but I cannot help but express my concern about the deterioration of the average level of university lecturers, even if I am considered to be elitist, arrogant, or even worse. Again, one of the corrective measures would be to increase the international appeal of university employment; the benefits to the university and to Spain would be many and too obvious to list them here. The retirement of a large part of the university faculty in the coming years would provide a unique opportunity in this regard.
- Dignifying and strengthening dual vocational training, bringing us closer to the situation in German-speaking countries, the Netherlands, the Czech Republic, Hungary and the Scandinavian countries, where it is not considered a disgrace to have children who follow this type of training, would also solve the problem of unmotivated students but it could increase the problem of empty university classrooms. However, it would be very beneficial for the Spanish economy if the business community were willing to play its part. I suspect that one of the reasons why the attempts of successive governments in this direction have not been sufficient is cultural, and therefore difficult to change. Nevertheless, social acceptance of and interest in vocational training seems to have increased recently.

- I would like to end this section with a warning. It is statistically well known that educational attainment is positively correlated with income and health, but this should not be a reason to push young people to study beyond what they really want or can, because the direct causality is likely to be modest; it is the indirect causality, *the confounding factors* (see Pearl and Mackenzie, 2018), that predominates, and this has little to do with the young person's education.

Thirdly, I would like to address the issue of the mismatch between the supply and demand of university researchers. Two distinct perspectives can be identified: researchers in general and those who stand out for their quality, as measured by some reasonable indicator, such as being in the most cited percentile in their discipline or having benefited from a European Research Council (ERC) contract. The first perspective, although a significant issue, is not the focus of this discussion because it is a universal phenomenon, affecting all developed countries and its origin is mathematically trivial: in a stationary situation, if each senior researcher supervises an average of six doctoral theses during their lifetime, and half of them wish to pursue an academic career, we will have an average of three candidates for each position offered. We are not going to discuss here whether this situation is good, reasonable, acceptable or none of the above.

The second perspective is that of outstanding researchers, a group that is of interest to Spain. Spain is one of the countries experiencing a brain drain, as it generously invests significant resources in training and preparing good researchers. However, a substantial proportion of these researchers will subsequently emigrate to countries with more advanced scientific capabilities, which will benefit from their expertise. This phenomenon represents a form of brain gain that internationalization facilitates. The inability of Spanish universities to retain their most promising scholars is a significant concern. There are a number of reasons for this phenomenon, including union-related issues, corporate concerns, a lack of leadership, a fear of responsibility, and even an extreme endogamic factor. It is notable that almost all of the most outstanding researchers spend years abroad and once they are gone, they are gone for good. There are indeed solutions to this problem. One obvious solution is to select the best candidate for the position in question. Other, more nuanced solutions, can be found in the numerous reports published over the last 20 years on the state of Spanish universities. Of course, this imbalance could be compensated by attracting outstanding foreign researchers, but if we are unable to retain our own, how can we attract those from abroad?⁷

⁷ Only in the Max Planck Society, and only in my discipline, physics, have I met three Spanish directors: Manuel Cardona (Stuttgart), Ignacio Cirac (Munich) and Ángel Rubio (Hamburg).

This unbalanced emigration, which does not bode well for the future of economic and social well-being that we wish for future generations, does not seem to be a cause for concern in society, or even among politicians. The value of high-quality research to society is better understood in more advanced societies, which promote it with foresight. Thus, a few years ago, the German government, with its passion for *Planungssicherheit* or planning security and reliability in the medium and long term, included in a law the annual percentage increase in funding until 2030 for the four basic and applied research societies or associations, Max Planck, Fraunhofer, Leibniz, and Helmholtz, each of which already had an annual budget of more than 2 billion euros. Laws can be changed or not enforced, but the symbolic value of this decision, which is a statement of faith in scientific knowledge, is immense. We could learn from it.

The next exercise is difficult to carry out with a sufficiently proven scientific approach, but we will still learn something: the comparison with other European university systems. The reason for this difficulty is the almost impossible *ceteris paribus*, i.e. to ensure that all the other variables relevant to the development of universities, such as primary and secondary education, university spending, the legal framework for universities, centralized state or regional distribution of power, social acceptance of alternative studies, the non-university public research system, business R&D activity, technological innovation activity and the presence of foundations active in education and research, are equal or can be weighted in order to quantify and separate their impact on university development. This diversity, on the other hand, is often what allows us to learn from other countries, and in Europe, for every university problem, it is easy to find a country that has also suffered from it and has tried solutions from which we can learn some lessons.

Before turning to Europe, I would like to say a few words about the United States and explain why it is more difficult to learn from a comparison with the United States than with Europe. Simplifying, there are four levels of American⁸ universities: community colleges, four-year (liberal arts) colleges, comprehensive universities, and research-intensive universities. The first have no equivalent in Europe and compensate for the lower level of American secondary education compared to Europe. The second type had some equivalent, but these types of schools or institutes have been transformed in Europe by the incorporation of research activities into universities. The third and fourth categories correspond to European universities, but in the US comprehensive universities put more emphasis on teaching, while the last category puts more emphasis on research. Consequently, it makes no sense to compare the research

⁸ I don't think the term "American" that I am using will cause any confusion: It refers to the United States.

carried out in an American university with a European university, since in the US it is concentrated in some 100 to 200 institutions, whereas in Europe it is concentrated in some 1,000 to 2,000 institutions. If we in Europe concentrated our research in a number of universities comparable to the number of research-intensive universities in the United States, we would be in a much better position in the international rankings. Other reasons that make a meaningful comparison impossible are the very important role of private universities and the role played by the Land-grant Act of the 19th century, which allowed colleges (later universities) to sell federal land⁹ and use the proceeds. That said, there is no doubt that many of the best universities in the world are in the U.S., so we have a lot to learn from them, closing our eyes, of course, to the nonsense like trigger warnings, safe spaces, cancellation culture, and sensitivity reading that have been all the rage across the Atlantic lately and should be respectfully ignored, though I doubt that respect is deserved.

In Europe, the prevailing university model is Wilhelm von Humboldt's,¹⁰ which holistically combines teaching and research and cultivates all disciplines as well as *Bildung*, culture, and general enlightenment. Sociologically, it was based on the strong development of a flourishing middle class that was more open to the world, and it partially replaced the Napoleonic model, which aimed to train the elites who would run the administration of a powerful and omnipresent centralized state. The variety of university systems in Europe is extraordinary, since not only do we have about 50 different countries, with different state organizations, but also some of them, those that are federal, confederal or autonomous, have different university systems within the country itself, even having, as in the case of Belgium, two different Rectors' Conferences, namely the Flemish and the Walloon. We will now explore certain characteristics of the university systems of some of the more advanced countries.

Switzerland has a system made up of cantonal universities, some of which are excellent, and two (con)federal polytechnics, ETH Zurich and EPF Lausanne, both of which are world-renowned. One wonders why such a successful system has not been copied in other countries. The case of Germany is paradigmatic: the constitution does not allow the federal government to finance education, which is an exclusive competence of the *Länder*. Ergo, there can be no federal universities. It is a clear example of how the passion

⁹ That land was often taken from indigenous people, which would not have been possible in Europe.

¹⁰ His brother, Alexander, is considered one of the last global scientists and has given his name to one of the most important foundations in Europe dedicated to the promotion of research. Ortega y Gasset reminds us in "The Revolt of the Masses" of the dangers of the barbarism of "specialization", the substitution of encyclopedic knowledge, like Alexander's, for specialized knowledge, that of the scientist who knew Kant, like Einstein, for the mediocre specialist, the Fachidiot. Perhaps that is why there are no more Einsteins.

for over-legislation prevents us from doing what would benefit the country.¹¹ Switzerland has also benefited from its multilingualism and respect for universities, combined with its ability to welcome¹² students from all over the world, including many highly competent Spanish researchers.

German universities, like almost everything else in Germany, are still suffering from the psychological consequences of the last world war and the incredible brain drain it caused. Because of the aforementioned difficulty of the federal government, which has more resources for financing the universities, they have to make do with what their states decide to allocate to them, a situation similar to what happens in Spain and the Autonomous Communities. But since the federal government was aware that the economic development and well-being of the country depended to a large extent on the quality of the university system, it designed the *Exzellenzinitiativen* or Excellence Initiative, which made it possible to provide exceptional funding to a few universities based on criteria of research quality and international appeal in the initial phases, and later on broader criteria. To a certain extent, the strict selection has given way to “coffee for all”, due to political pressure from the *Länder*, as well as due to the idea of equality that characterizes a public system like the German one, so that selective federal funding has gradually become more global, changing the criteria to benefit more and more universities. In any case, when applying the right criteria, a few universities have stood out and are now better placed in international rankings.¹³ Incidentally, the fact that no Berlin university was successful in the first round did not cause any problems; on the contrary, it was an incentive for the three large universities in the capital.

The French case is not very different from the German one, except that it also has the *Grandes Écoles* and certain engineering schools, which depend on other ministries and have a more top-down governance. It also introduced the *Initiatives d'Excellence* and had no problem accepting that no Parisian university was in the first round.¹⁴ These initiatives almost coincided with a policy of university mergers which, with a few exceptions, reversed the notoriously inadequate disciplinary division of the universities in the large French cities,

¹¹ I am informed that the current legislation would allow it in Spain.

¹² Selective welcome, as the solidarity reasons apply only partially.

¹³ In particular the two large Munich universities. From a university point of view, Bavaria in Germany can be compared to Catalonia in Spain. I participated in the creation of a new Bavarian polytechnic university in Nuremberg, which was supposed to be a revulsive against university stagnation, but it was not; a piece of ice in a bathtub does not change the temperature much. It reminded me of the creation of the Autonomous Universities in Spain, and later of *Pompeu Fabra* and *Carlos III*, but they have meant some progress.

¹⁴ As a member of the international committee that made the evaluations and classifications, I asked if our recommendations could be changed by the government. The answer was: only the President of the Republic could do it. He did not do it.

Strasbourg I, II and III, Bordeaux I, II and III, Lyon I, II and III, etc. As in Germany, and even more so given the higher level of unionization, the money ended up reaching almost all the universities, albeit with quantitative differences. All this has contributed to making the French system extraordinarily complicated, even for the French,¹⁵ given the Gaulish tendency to somehow maintain previous structures with their multiple councils.¹⁶

Spain also tried to introduce a system of university excellence, but encountered some problems,¹⁷ and rightly replaced it with measures to support institutions and outstanding researchers,¹⁸ which seem to be well managed and should be further strengthened. What we could learn from France and Germany, which, like Spain, have a system predominantly based on the civil service, is the flexibility that makes it possible to appoint the best university lecturers as professors, wherever they come from, with much greater ease than south of the Pyrenees. Let us not forget that the most effective instrument for achieving university excellence is the ability to attract the best talent, from anywhere in the world, to serve society through knowledge, and that the civil service system was created with very different objectives, namely, to serve the state so that it can function efficiently and competently. The civil service system is not suitable for achieving academic excellence, unless it is adapted to the quality requirements of research activities and university teaching.

Among the other characteristics of Germany and France that deserve our attention, there is one that is essential but for which the universities are only partly responsible: the lack of interest that society and politics have in the university world, beyond paying lip service.¹⁹ It is true that the French and German academic tradition is more solid, it is true that they are richer and more industrialized countries, but Spain today should not be satisfied with Unamuno's "let the others invent", but rather should follow Ramón y Cajal when he said: "The cart of Spanish culture lacks the wheel of science". But the universities also bear some responsibility for this lack of interest; in any case, they have an obligation, if only out of self-interest, to do what they can, and they can do a great deal, to bring the academic world closer to society and to the attention of Spanish politics. In this sense, the public sector can learn something from the private sector.

¹⁵ The case of Paris is unbeatable, I think that not even the Parisians understand it.

¹⁶ They call it *structure en oignon*, onion structure, an expression that I believe Hannah Arendt introduced in another context.

¹⁷ Someone told me that the non-inclusion of Madrid universities in the first round caused a great stir, but it seems that there were other difficulties as well.

¹⁸ The *Severo Ochoa-María de Maeztu* and the *Ramón y Cajal* excellence programs, respectively.

¹⁹ In the countries north of the Pyrenees and Alps, the percentage of presidents and CEOs of large companies with second and third level academic degrees is considerably higher than in Spain.

The Netherlands and the Scandinavian countries have excellent university systems, but I think it is unrealistic to think that Spain can learn from them in general; they are too different from Spain demographically, culturally and economically. But some concrete measures could be of interest to us, such as giving new teachers a few years' moratorium before requiring them to be trained to teach courses in the national language. Other measures, such as the use of English on an equal footing with the national language,²⁰ do not seem to be transferable to Spain, at least at present.

Something similar happens with the excellent British university system: it is so far removed from ours, closer to the American,²¹ that we would have to adapt much more than the university system in order to learn from them. Besides, they also have the undeniable advantage of being fluent in English, the lingua franca of research. It remains to be seen how the United Kingdom will manage its last imperial dreams in the coming decades and what consequences this will have for its universities, which are in no way responsible for the recent political delusions. But make no mistake: Europe would lose a great deal if British universities were to deteriorate; the *schadenfreude*, or the delight in the misfortunes of others, has no place here.

I would like to end this little journey through Western European universities with a few words about four singular countries: Belgium, Austria, Portugal, and Italy. Belgium, in its Flemish part, has excellent universities, but its state structure is incomprehensible to the rational mind, and the European institutions have a strong influence on the Belgium of today. Austria proved a decade ago that, if the political will is there, the university system can be revolutionized without the world sinking. Thus, universities can now choose between a civil-servant and a private employment system, and medical schools have become independent. We can also learn from Portugal, which at the same time also radically changed its system, and so universities can decide to become foundations.²² It should be added that the credit for this belongs to Mariano Gago, when he was minister, as not being a politician but a physicist, he did not think about votes and did what he thought he had to do for the good of his country. Of course, the thermalization mentioned for Germany also worked in Portugal, but undoubtedly the system has improved. Unfortunately, we can learn almost nothing from the current Italian system, which is a shadow of its former self, abandoned by many of the best who have emigrated.

²⁰ Recently contested, as is to be expected in times of more nationalistic passions, but with a certain reason, for fear of the impoverishment of the national language.

²¹ Their legal structures are hardly comparable, and the most prestigious have *endowments* of 10 digits, a few American ones of 11. Tuition fees in England are high, but Scottish universities are free; however, they are all in the same vice-chancellors' conference, which is *Great-British*.

²² I believe that four, particularly in the north, chose this path.

We will now briefly discuss certain aspects of the private university system, which is developing strongly in Spain, especially in certain autonomous regions.²³ Something similar is happening in Germany and Italy, but not in the United Kingdom, where for legal reasons British universities already operate partly according to private criteria, nor in France, where for ideological reasons the private sector is frowned upon.²⁴ To simplify matters, private universities can be divided into those that are religious, those that are purely commercial, often owned by international funds, and those that are non-profit. Religious universities have a strong tradition of implantation and education, which explains their success in society, not only among believers, especially their business schools and certain disciplines such as medicine. As for the universities that are only a business, their social-educational value could be considered doubtful. The private non-profit ones deserve a closer look.

We understand non-profit as the will to reinvest profits in its own growth and improvement. This private university generates an undeniable benefit to society at no public cost, and therefore has a moral and economic obligation to maximize that benefit for the good of society. The individuals or institutions that own them often show a genuine interest in education, training and their value to society, and consider employability at an appropriate level as one of their main objectives, to a greater extent than the public university, which tends to prioritize research and the generation of new knowledge. These priority profiles, which distinguish the private not-for-profit universities from the public ones, make them in fact quite complementary, to the extent that politicians should support both, *i.e.* they should provide adequate funding to the public universities and avoid placing administrative or fiscal obstacles in the way of the private not-for-profit ones. Unfortunately, and perhaps for ideological reasons, this happens only in exceptional cases, and it is society that suffers, as competition between the two models would improve the quality of both.

Certainly, in a system with a high degree of university autonomy, the way an academic institution is evaluated should take into account its profile and objectives. Classifications that rank both public and private institutions, using the same indicators for both, follow a methodology that is questionable at best. In fact, evaluating public and private institutions with identical criteria

²³ The number of students in private universities has increased dramatically in recent years, while public universities have seen a decline, only partly caused by demographics. The CyD Foundation has been providing increasingly relevant data on the Spanish university system for 20 years.

²⁴ When I was rector in Luxembourg, the president of a private international university based in France suggested that we merge our universities, which I found rather bizarre. When I asked him why, he told me that private universities were frowned upon and that it was very difficult to cooperate with public institutions. Since the region where his institution is located is one of the most advanced in France, the problem disappeared when it realized that its international prestige would suffer if the university moved to another country.

promotes the convergence of institutional profiles, so that complementarity and diversity tend to disappear. This policy is wrong. The data from the intensive indicators²⁵ show that, in general, public universities are stronger in research, while private universities are stronger in the employability of their graduates. Since both research and employability-oriented teaching are essential for the future of the country, its companies and its citizens, it is much better to have institutions that excel in one or the other priority than to push all of them to excel in both, possibly leading to a certain mediocrity in both priorities, which is of little value. Research in the private sector should primarily play the role of strengthening and updating teaching and teachers, while employability in the public sector should play the role of bringing research and researchers closer to industry and business.

We will briefly mention some threats and opportunities, starting with the growing politicization observed in some universities. What is academically correct is and should be different from what is politically correct, the rhythms of university activities should not be marked by elections and re-elections. The goal of the university coincides with the goal of politics only insofar as both serve society, but not in how to do so, which in the case of universities is the creation, transmission, analysis, verification, interpretation, explanation, development and use of knowledge.²⁶ This politicization is further encouraged by the electoral systems used in public universities, which are similar to those in politics and inappropriate for a modern, international university. The prevalence of egalitarianism, instead of a meritocratic, epistocratic and equitable policy, is partly due to the influence of political and social currents that are alien to the quest for university excellence and also to the fact that it defends the university staff more than the institution itself.

But there are also opportunities in Spain, a country that is going through turbulent times that often facilitate unexpected policies. Given the uncertainty of the unexpected, it is best to mention what we can be sure of: the demographic evolution of the university teaching staff, whose average age is now advanced, will lead to the renewal of about half of the teaching and research staff at the highest level in the next decade. This is an opportunity with capital letters, but without a clear will to improve, which is currently not perceived as such, it will be wasted with endogamic measures.

²⁵ I will never tire of reminding that extensive indicators measure size rather than quality. To say that the US has more Nobel Prizes than any other country does not mean much: it is mainly due to its 340 million inhabitants; to say that Switzerland, Austria, Ireland, the UK, Hungary, Israel and Germany have more Nobel Prizes per capita than the US means quite a lot. I have not included other countries in this "better than the US" list because of statistical fluctuations and proximity bias.

²⁶ And as far as possible, understanding. Knowing does not imply understanding.

Spain, like France, Germany and Italy, has a research system carried out in public organizations which runs in parallel to university research. In these public research organizations (OPIs, in Spanish), governments have a greater influence in setting priorities than for universities, which cannot that easily be influenced by governments because they have autonomy, academic freedom and their own corporate governance. The OPIs, however, have a more hierarchical governance, the president is normally appointed by the government of the nation, and can also be easily dismissed. The largest Spanish OPI is the CSIC (Spanish National Research Council), the equivalent bodies are the CNRS in France, the MPG and the Leibniz in Germany and the CNR in Italy. All of them, in different ways, collaborate with universities, as is to be expected, being an example of *win-win*; in Spain this collaboration should be strengthened, since it gives excellent results. Other countries, such as the United Kingdom, Switzerland, Scandinavian countries and the Netherlands do not have a system of OPIs, so their universities excel more in research,²⁷ and governments influence their priorities through complementary funding, through agreements to carry out the tasks and research that the national government deems important. This model requires a university governance that is more hierarchical, more entrepreneurial as well as less collective and unionized. It is interesting to observe this positive and very strong correlation between the existence of public research organizations and collective university governments, or, equivalently, between the absence these organizations and a university government with a greater concentration of executive power. This very interesting topic is beyond the scope of this essay, but it is worth remembering that the existence of OPIs has a consequence that is difficult to avoid, namely the more or less chronic lack of adequate funding for public universities. This is due to the fact that finance ministers tend to consider the budget of public research organizations and universities as a constant sum.²⁸ If it seems difficult to carry out a profound reform of the university system (to improve its financing), it would be even more difficult if it were accompanied by a reduction of the OPI system. Here we would be entering the realm of unrealistic speculation; it would be better to concentrate on what is feasible.

I would like to end this long section dedicated to general aspects by commenting on an unexpected and positive development that has occurred in Catalonia in the last decades regarding the creation of research structures that combine the private and the public sector. These research institutes, thanks to other complementary measures implemented by the Generalitat (its regional

²⁷ This should be taken into account in the rankings, although, due to its difficulty, it is not.

²⁸ The case of Germany is somewhat different because of its greater wealth, the strong participatory role of the states, and the interest of industry in research.

government),²⁹ have managed to develop research at an average high level by successfully attracting excellent researchers from all horizons,³⁰ raising private funds, and reducing bureaucracy to the minimum allowed. These original and creative developments may not be a panacea, and there may even be doubts about their impact on the university system, but they were the best that the legislation allowed. It is worth remembering that this process would not have been necessary if the universities had done, or could have done, something similar. This brings us directly to the following, more specific sections.

On autonomy and accountability

As far as we know, there are no universities, at least in the Western world, that are in the first percentile and do not enjoy a relatively high degree of autonomy. One justification for autonomy is that an institution dedicated at the highest level to the various aspects of knowledge is unlikely to find structures that are even more expert than itself. It is therefore best placed to manage and define in detail its own strategy, which must in any case be integrated into its overall objective of serving society. There is, however, a risk of bias due to self-evaluation and self-judgment, but this is controlled by accountability. The thesis that a ministry can best direct a university's strategy may be defensible where universities do not excel, but it is considered quite nonsensical for good universities. However, university autonomy is a multifaceted concept, as can easily be seen by reading the University Autonomy Scorecards (Pru, 2017) published by the EUA every 3 to 6 years, despite numerous difficulties and with a high level of professionalism. Spanish universities remain, in the 2017 edition, within the four categories of autonomy, in the medium/low group of the 29 countries that participated. We will now explore some of the less discussed difficulties.

A very pervasive but under-discussed problem is the reluctance of some, or perhaps quite a few, rectors to use the discretionary power granted by autonomy. The legislation allows the rector to decide to offer a professor up to double his or her nominal salary in order to ensure quality, to retain or attract a distinguished researcher, to develop a discipline that enjoys high salaries in industry, and so on. Well, almost no one does. Why not? Well, because a rector who is elected on the basis of a program, by vote and by bodies, and who is offered only a modest salary increase, will have little motivation to take

²⁹ The credit goes to Andreu Mas-Colell (see, for example, Mas-Colell, 2001 and 2002). Like the Portuguese case of Mariano Gago, it is an example of how real improvements come about when knowledge, ideas, will, cold blood, international experience, excellence, a sense of opportunity, and political-scientific savoir faire converge in one individual.

³⁰ Many of them have received the prestigious ERC contracts.

measures that many will consider elitist,³¹ and, therefore, thanks to a fallacious populist *non sequitur*, “antidemocratic”, which implies that the statistical distributions applied to society are wrong when they show the *outliers*, the black swans, and that what is democratic is uniformity, the absence of individuals who stand out.

In countries where the university system is predominantly based on civil service, candidates are asked years after the doctorate to present a habilitation, if it is the responsibility of the university, or an accreditation, if it is the responsibility of the state³² in order to be eligible for a permanent position as a professor or researcher. In the countries with the best university systems, this kind of quality filter after the doctoral degree does not usually exist. There is a fairly broad consensus among academics of a certain level in the countries that suffer or enjoy this control that it is an inevitably bureaucratized step that in the 21st century does not serve the purpose for which it was introduced and that it effectively implies a waste of time in what are usually the most creative years. Excessive *ex ante* control tends to replace creativity with boredom. Seizing the tools that allow the university to compete, to try to be the best, is a bad policy for improving the university system. Imposing controls to prevent it from making mistakes, *i.e.* tutelage, is also a policy that does not encourage the development of university excellence. Universities should be able to make mistakes, that is how they learn and improve, they should follow Schumpeter, even if this leads to better universities and others that are less good.

University autonomy must be accompanied by *ex post* accountability to society,³³ the university’s main stakeholder. Society is represented by the government, which must then exercise this control and ultimately take whatever corrective action it deems appropriate.

On university governance³⁴

For a university that has sufficient legal autonomy to be able to develop it effectively, it needs an adequate system of governance, which the Spanish university does not currently have. I have first-hand experience of the two extremes of university governance: as Vice-Rector of the University of Barcelona in the early 1990s and as Rector of the University of Luxembourg since 2005. In the former case, the governing board was made up of about a hundred people, all of

³¹ And run the risk of having to end his term of office hastily.

³² In Spain, ANECA is the agency in charge of evaluations and accreditations.

³³ Some would talk about tax payers (Krüger *et al.*, 2018) is a pertinent reading.

³⁴ (Krüger *et al.*, 2018) is a pertinent reading.

them from the university itself, representing various academic or administrative bodies or positions. With the exception, in principle, of the Rector's team, all of them defended the department or unit they represented or headed. Thus, the defense of the institution was supposed to be carried out, wishful thinking, from the confluence of this large number of supposedly concurrent forces. That such a body, of such size and composition and so subject to corporate interests, would hardly lead to excellence seems so obvious as to require no further discussion. This type of body encourages, even if unintentionally, inbreeding and is inadequate to create the conditions that make the institution attractive to international professors or researchers, or to those who contribute most to the university. It also suffers from another serious flaw: it has no representatives from society outside the university. The Social Council is supposed to make up for this last deficiency, but it is well known that it does not do so, that it cannot do so.³⁵

At the University of Luxembourg, the Governing Council was made up of seven people, all from outside the university, three local executives and four academics from abroad, prestigious researchers or university leaders,³⁶ appointed by the government. A representative of the students, a representative of the faculties, a high official of the Ministry of Trusteeship and the Rector also attended the meetings. The representatives of the faculties and certain academic and administrative positions met in the University Council, whose recommendations were forwarded to the Governing Council, which was sovereign, although its autonomy was relative due to the appointment procedure. The Rector is sought internationally with the help of an academic³⁷ headhunter and a search committee, and is selected from a short list by the Governing Council and proposed to the Grand Ducal Government, which appoints him or her. The Governing Council can dismiss him or her, as it happened to my successor. The Governing Council also appoints all the lecturers, on the proposal of the Rector. Eighty percent of the academic and research staff under contract³⁸ are foreigners.³⁹

³⁵ I recommend the articles published in recent years by Antonio Abril.

³⁶ Not long ago, its composition was reformed to introduce four representatives in the Council, which now has 13 members.

³⁷ The same procedure is used by the *Universitat Oberta de Catalunya*, at least when I participated in it. The return on investment on a procedure of this type is very obvious: a mediocre rector has a much higher cost

³⁸ The University, being legally a public institution under private law, does not have civil servants, only employees. I do not understand why this legal framework has hardly been explored or proposed in Spain, when the PPP, the public-private partnership, has been praised so much, and rightly so. I guess it's for ideological reasons.

³⁹ I am aware that, in a country the size of Luxembourg, and with no academic tradition, this figure is not as significant as it may seem at first sight; but when I started in Luxembourg, the Prime Minister, Jean-Claude Juncker, who had strong doubts about the goodness of the decision to create a university, spoke to me among others about the danger of inbreeding, "of appointing the sons and daughters of my ministers as professors". This did not happen.

In Spain, there are private universities that have governing boards or rectorates that are not very different from those in Luxembourg. The issue of university governance has been dealt with extensively in the many reports that have been carried out in Spain since Bricall (2000), and in particular, Tarrach *et al.* (2011) and Miras *et al.* (2013). In an ideal world, it should be the university itself, by virtue of its autonomy, that decides, together with the regional government, the governance structure that best suits its vision and mission.

About financing

Given the above comments on the simultaneous financing of the Public Research Organizations (OPs), and the public university system, and considering the high cost of the Spanish State's debt, it is unlikely that the financing of the university system will increase significantly in the foreseeable future without a previous fundamental change.⁴⁰ What non-incremental, *i.e.* radical, changes can we imagine?

- A president with genuine interest in research and universities,⁴¹ or at least a minister of universities and science with decision-making power and priority support from the president.
- The decision of the business sector, of the companies, of the industry and of the most important foundations associated with it, to strongly support the university sector with material, human and financial⁴² resources, because they have come to the conclusion that a prestigious university will have a positive impact on the economic, industrial and business development of the country. From my point of view, this will not happen without first reforming the governance of the universities and making it more similar to the governance of companies, with decision-making procedures and responsibilities that are more understandable to the productive world.
- A European Commission that decides to impose on the Member States, perhaps indirectly, adequate funding for research and universities,

⁴⁰ There can always be surprises. Thus, the transfer of students from the public to the private sector could continue and the government could decide not to reduce the university budget, that is, to decouple it from the number of students, and instead make it depend on the other two academic activities: research and the third mission, transfer.

⁴¹ That should have ordered, in the first month of his mandate, a report equivalent to (Bush, 1945) or that should have consulted those produced in Spain in recent years.

⁴² Chairs financed by companies, foundations, municipalities or other institutions are an instrument of cooperation with the university that is convenient for both parties. Why don't we have many more?

although it is difficult to imagine that the European Council would allow this, since the Member States could consider it an encroachment on their competences.

- A Conference of Rectors of Spanish Universities (CRUE, in Spanish) that proposes to the government a radical reform of the university system in exchange for a substantial increase in funding. Having a body that wants to reform the system that has allowed it to become the highest university authority is neither obvious nor common, although individually many rectors, at least in the past, thought that a profound reform was necessary. But perhaps one day circumstances will allow the CRUE to overcome what psychologists call groupthink, which results from each member's attempt to approach what he or she believes to be the consensus of the collective, but with a final result with which no one is usually satisfied.
- An agreement among the governments of the Autonomous Communities, at least those that believe more in the role of the universities, to press the central government for a profound reform, accompanied by a substantial increase in funding, in exchange for greater coordination among them.

Looking ahead: Conclusions and final recommendations

Although concern for the *quality of teaching* is, to a greater or lesser degree, common to all of Europe, it seems to me that in Spain the imbalance in favor of research activity is even more marked than in other countries.⁴³ Quality is the *sine qua non* of university activity and university teaching is the most exclusive of the three university missions. It follows that a university cannot claim to be excellent unless the quality of its teaching is excellent. By extension, the procedure for electing or appointing the rector must be such as to maximize the likelihood of electing or appointing the most competent person for the position and who has shown a high level of quality in his or her academic activities.⁴⁴

⁴³ As an anecdote, when I was dean, I questioned a professor whose teaching had received the worst evaluation in the school. He was a peculiar man, and with a certain sense of humor, he showed me a letter he had received from the vice rector in charge of teaching quality, saying that since he had passed the evaluation for the last five years, he was pleased to inform him that he had been granted a new teaching salary supplement. For various reasons, one of which was the system of electing the rector, the universities had decided to follow a procedure so that everyone would receive this salary increase. I threw in the towel. The evaluation of research, on which the granting of *sexenios* (6-year salary complements) was based, was, at least in those years, correctly done in a centralized way, for the entire Spanish university system, although perhaps with some discipline bias.

⁴⁴ It was said, years ago, that in too many universities, the ratio between granted and possible six-year periods awarded to the rector was lower than the average for his or her university.

There has been a lot of talk about *innovation* in the university context for a long time. Obviously, a university that wants to maintain its good level must innovate in all its activities. But when it is suggested that innovation should be as important as research, it is forgotten that a university is not a business. It is often said that research converts money into new knowledge,⁴⁵ while innovation transforms new knowledge into money, and this should be done by companies. Universities should ensure that an important part of the new knowledge they generate feeds into business innovation, perhaps through the creation of spin-offs and start-ups; that there is no contradiction between achieving a high level of quality in both basic research and applied research,⁴⁶ and in research closer to the economy is shown by the excellent polytechnic and technical universities that we have in Europe⁴⁷ and also in Spain.

One threat that hangs over the university world, indeed the world at large, is the growth of bureaucracy⁴⁸ due to the need for reports to be written, data to be provided, privacy to be respected, projects to be prepared, evaluations to be submitted, committees to be served on, departmental and faculty meetings to be attended, and so on. All of which has the consequence that the time left for the three university missions is substantially reduced.⁴⁹ Interestingly enough, few seem to be interested in quantifying this time⁵⁰ and evaluating the return on these hours, but if this were to happen, it would show a wasteful, irresponsible squandering of public resources. One of the causes of these obligations is the fact that the lack of trust, and therefore the passion for *ex ante* control, is an administrative principle that, in my opinion, is ineffective and unnecessary⁵¹ and that feeds back in a loop. Controlling, with its evaluations, should be done *ex post*, which, of course, must have, in case of non-compliance, peremptory

⁴⁵ Thus, mathematicians say of themselves that they are machines for transforming coffee into theorems.

⁴⁶ The effects on time of Einstein's special (1905) and general (1915) relativity theories, which were considered to be of no practical interest, took a century to make possible the current accuracy of GPS through the corrections in the four atomic clocks of the satellites necessary for localization. No one can foresee what a fundamental research result can be used for 50 years later (see Flexner [1939], which is still worth reading).

⁴⁷ Such as the ETH in Zurich, the EPF in Lausanne, the KTH in Stockholm, the TUM in Munich, the TUDelft in the Netherlands or the Imperial College in London.

⁴⁸ Which follows a Keeling-like curve for atmospheric CO₂.

⁴⁹ I am told that these activities count towards being a professor, something like a professor "for points". It blows my mind; it is no longer necessary to read Kafka or Beckett.

⁵⁰ Not long ago, while evaluating a French university, I asked for a quantification of this time devoted to administration. They could not give it to me, but I also understood that they were not interested in the subject.

⁵¹ When I was at a university in California, I needed a social security document. The clerk asked me for a lot of information without asking for a certificate. When I asked her if she trusted everything I told her, she replied: "We will do some checking, and if we find that you lied to us, we will deport you from the U.S.". This is the "trust but verify" philosophy that we could learn a lot from.

consequences. The time thus recovered for academic activities would allow a substantial improvement of our universities, at zero cost. There are other causes, such as fear of responsibility or control of and by colleagues.

The decentralized structure of the Spanish administration has advantages and disadvantages for the university system. The advantages would predominate if there were effective coordination within the State, based on mutual trust between the stakeholders. It is nonsense for all the Autonomous Communities of Spain to carry out research on the subjects that are currently in vogue and at a high level. It is a sign of narrow-mindedness to erect barriers to enrollment in universities located in another region. All the problems that arise are solvable if there is a willingness to coordinate and cooperate. And the system would be greatly improved, at no public cost.

I would like to end with a reflection, perhaps obsessive, on something that never ceases to surprise me: in the academia, scientific methodology is not used correctly when the object of study is the university system itself and when we try to understand the causes that have led to the situation under study⁵². Too often, analyses are based on inadequate and non-significant statistics; statistical and systematic errors are not taken into account; uncorrelated causes are assumed; single causes are sought when mono-causality almost never exists; errors of deduction such as non sequiturs are made; inference is applied with excessive generosity, using singular, anecdotal cases to make unwarranted generalizations; Occam's razor is misapplied; too much passion is given to irrelevant indicators and surveys; in the end, we work in a supposedly scientific but actually unscientific way. Therefore, the opinion, ideology, bias, *i.e.* the characteristics of the person conducting the study, determine the result of the study to an excessive extent. It is difficult to get it right,⁵³ but to get it wrong while pretending to get it right is detrimental to all of us: it is better to do the best we can while mentioning the limitations or honestly stating that it is just an opinion.

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⁵² In the case of economics (Angrist and Pischke, 2015) explains how to study causality correctly.

⁵³ The fact that we do not know of studies that have been properly conducted with the full power of scientific methodology may indicate that the complexity of the object of study does not currently allow this to be done.

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