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France: Long Waiting Lists Despite Poorly Attractive Academic Positions

Christine Musselin

As in many other countries, the situation of French PhDs is not flourishing. In contrast with many other countries, permanent positions are accessible just after completing a dissertation. However, the number of positions opened is decreasing while the number of applicants is not. With the development of project-based research, the number of temporary positions increased and doing a post-doc before getting a permanent position has become more frequent, when not compulsory in some disciplines. As a result, many PhD holders are going from one post-doc to another and still wait to become a permanent faculty member.

This lack of available positions and the rather low salary offered to the lucky ones able to enter the permanent faculty staff of French universities lead many observers¹ to even more pessimistic views. They in particular question the future capacity of French academia to attract the best graduates into doctoral programs.

In order to examine more thoroughly the French situation, the issues at stake and the future trends, this chapter is organized as follows. First, some information will be provided on the French higher education system and its main characteristics. In the second section, hiring procedures and their recent evolutions will be described. In the third section, the French labor market for young academics will be discussed: prospects for jobs in academia and outside academia will be described, as well as the profiles of the newly recruited candidates and their evolution, and the underlying dynamics of this labor market will be highlighted. The next section is dedicated to the insertion of the newcomers into their departments and focuses on material, institutional and relational conditions, while the following section provides some insights about what French

young researchers themselves think about their prospects and experiences. Finally, reflections on the main issues at hand and future trends are identified.

General characteristics of the French higher education system

This chapter will focus on universities but one must first acknowledge that France is probably the only country where universities are not the most prestigious institutions and generally do not train the elites. For historical reasons (Musselin 2004 [2001]; Verger and Charle 2012), vocational higher education institutions, called *grandes écoles*, train the industrial, commercial, and administrative elites. Until rather recently, many of the permanent faculty members of these schools were former students of these same schools, in some cases holding no PhD degree, not committed to research, and focused on providing vocational knowledge. Moreover, and also for historical reasons, French universities have for a long time not been the main place for scientific production. The Napoleonic university, created at the beginning of the 19th century, was primarily teaching oriented. This was still the case in the 1930s, so the French government decided to create a national research institution called the CNRS (Centre National de la Recherche Scientifique) to create research capacity. The CNRS covers all disciplines and is mostly oriented towards fundamental research. In the 1950s and 1960s, more research institutions were introduced; they are not as large as the CNRS and are more topic-based. For example, there is one for spatial research (CNES), one for atomic research (CEA), one for life sciences (INSERM), etc. Today, this institutional divide between the *grandes écoles*, the universities and the research institutions, stressed by all publications on the French system, is blurred. On the one hand, some of the *grandes écoles* (mainly among the engineering *grandes écoles* and often not the most prestigious ones) now are situated within universities; they are run like a *grande école* and are part of the *grande*

école sector yet they are, at the same time, considered to be a unit within a university. Meanwhile, the divide is also blurred because research units within universities are often affiliated both to their university and simultaneously to one or more national research institutions. As a result, the staff working in these units might be either an employee of a research institution or a faculty member of the university. Fewer and fewer employees of research institutions are working in units exclusively affiliated to the research institution. For instance, 80 percent of the CNRS permanent researchers are located in universities.

Nevertheless, university faculty members are only one part—even if the larger one—of the French higher education and research system. The approximately 60,000 permanent university faculty members are, for instance, to be compared to the 11,450 CNRS permanent researchers. In order to simplify and to make this chapter comparable with others, there will be a focus on faculty members in universities but the reader must be aware that every new PhD holder may apply for a university position, a position in a research institution or, if her discipline is taught in the *grandes écoles*, for a position in a *grande école*. The hiring procedures in each institutional sector are different and they may stress different competences—the quality of research is, of course, the main criteria for the CNRS, for instance, while research is one among several criteria of interest for universities (Musselin 2009 [2005]). The career development issues will also be specific to each sector, and the mobility between the sectors remains rather low. The attractiveness of the different sectors also varies; in management, for instance, *grandes écoles* increasingly recruit PhD holders and offer them better salaries and conditions, leading many young doctors in management studies to go for positions at the *grandes écoles* rather than at the university. In biology, the INSERM or the CNRS will be more attractive than universities or engineering schools for young doctors who are strongly

research-oriented. The chance of getting a position is also different across the sectors, and generally higher at universities than at research institutions², or at *grandes écoles*, where the ratio of permanent teachers to students is generally much lower than in universities because the *grandes écoles* more often employ part-time faculty or practitioners in their teaching programs.

As a matter of fact, even if the share of university students in the overall student population tends to decline, it remains the larger share because access to undergraduate studies at universities is guaranteed to all *baccalauréat* holders, while access to *grandes écoles*—and among them to the most prestigious ones—remains very selective. Therefore, the first wave of massification (that occurred from the end of the 1950s to the end of the 1960s) and the second wave (from the second half of the 1980s to mid 1990s) were first of all confronted and absorbed by universities. To face this challenge, the number of university faculty members has increased substantially since the 1960s, but always with some delay and often less rapidly than the increase in student numbers³. It also stagnated each time the increase in students slowed down, thus adopting a stop-and-go dynamic. For this reason, French universities have seen periods of job opportunities followed by periods of scarcity, coinciding with the retirements of those who had the chance to enter the academic career or a new increase in the student population. For some years now, the main drivers for vacancies have been retirements (baby-boomers are going into pension) and the last decade has been especially difficult for early career researchers. The stagnation in student numbers and the financial crisis led to a decrease in the number of open positions within the last five years (discussed further along in this chapter), while the training of doctorates progressed both qualitatively—with the introduction of doctoral schools and doctoral programs—and quantitatively (up 9 percent from 2000 to 2009, according to the ministry⁴). Parallel to

this evolution, the trend toward project-based funding favored the expansion of post-doctoral positions and the constitution of a population of casual research staff working on time-limited contracts. Unfortunately, there are no general figures about this population.

Another French characteristic worth noting is the composition of the university faculty staff and the specific career trajectory of French academics. As stated by Enders and Musselin (2008), the French approach is different from both the tenure track system of the United States (consisting of two time-limited contracts of three years followed by an extensive evaluation to decide whether or not an academic becomes tenured) and the “survivor” process that is typical in Germany, for instance (involving a long period of time-limited contracts that may finally culminate in securing a professor position, mostly after age 40). France is characterized by a pyramidal system in which access to a permanent position—with the title *maître de conférences*—is supposed to occur just after receipt of the PhD and happens rather young (at age 33, on average, in 2011).

After writing a second thesis (called the *habilitation à diriger des recherches* or HDR) or, for some disciplines (law, management, economics, political science), after successfully passing a national selective exam called the *agrégation du supérieur*, some *maîtres de conférences* enter the corps of the *professeurs* (equivalent to associate or full professors in the United States). However, some never make it to this level, either because they decide not to write an HDR or prepare the *agrégation du supérieur*, or because they try but fail. Because there is no “up or out” mechanism, those that do not achieve the level of *professeur* remain in a position of *maître de conférences* until they retire. The proportion between the two corps is about one third professors (36 percent) and two-thirds (64 percent) *maîtres de conférences*. This means a heavy bottom and a rather narrow summit. The group formed by these two populations is collectively called

the “*enseignants-chercheurs*” and they are civil servants. But there exist other categories of permanent (civil servant) faculty members teaching at French universities, namely the high school teachers assigned to universities⁵. These individuals might have a PhD but most of them do not, given that once they have their PhD they generally apply for a *maîtres de conférences* position. They are called PRAG (*professeurs agrégés*) or PRCE (*professeurs certifiés*) depending on the name of the exam they passed to become high school teachers. They teach twice as much as *maîtres de conférences* and are not expected to do research. They mostly teach undergraduates.

All other members of the university faculty staff (a little more than 25 percent) are working on time-limited contracts. Some are “PAST” (*professeurs associés* or affiliated staff)—they work part-time outside academia (within a firm, for instance) and the other half as *maîtres de conférences* or professors at the university. Another important group consists of the ATER (*attachés temporaires d’enseignement et de recherche*); most of the time, these positions consist of a two-year, non-renewable contract for doctoral candidates close to the end of their PhD, or new PhD holders. The teaching duties are the same as for a *maître de conférences*. The ATER option was created in the mid-1980s as a “waiting-position,” enabling a young doctor to wait before getting a permanent job and at the same time preparing him for his future professional life. A final group consists of PhD candidates with a doctoral contract (which provides a salary paid for a three-year period in order to prepare a PhD).⁶ These individuals get a higher wage if they teach 64 hours a year at their university. In terms of numbers for the different groups of faculty teaching at French universities, Table 1 provides the most recent figures.

INCLUDE TABLE 1

In recent years, a new population has developed in French academia. They are called “post-docs.” This term designates all kinds of time-limited contracts for PhD holders. Two groups should be distinguished here: the post-docs working on a research project directed by one professor or a group of permanent staff, and the post-docs opened for one or two years where the position holder independently decides the topic on which she will work. In the former case, the content of the research led by the post-doc is determined by the research project of permanent members and might be quite different from what he did during his PhD or would like to work on. In the latter, which is rarer, the post-doc can better develop her own research agenda and spend time writing publications based on her doctoral work and enriching her résumé. Both types of positions existed before (even from the early 1980s) but they were not all called post-docs and, more important, they were less numerous in the past. Since the creation of the ANR (*Agence Nationale de la Recherche*, a national research council) in 2005, project-based research has flourished and the number of post-doc positions has increased. It is nevertheless very difficult to say by how much and also how many there are today. There is no central tracking of this fluid population, so we do not know precisely their number, what they do, or what they go on to become. We just see their share growing in the yearly social report of the French national research institutions.⁷

Ways to enter the university job market

The general description provided above sets the frame in which academic trajectories develop in France and we can now look at how one enters the university job market.

In the 1970s and 1980s, access to academic careers mainly relied on interpersonal relationships. Most of the people interviewed for a study on academic trajectories (Musselin, Pigeyre, Sabatier 2011), who had been recruited to permanent positions at

that time, explained that they had been asked “by chance” by one of their professors if they would like to become an assistant. This might still exist today, but most of the time more collective, competitive, and strategic processes are observed. As a matter of fact, the path leading from a master’s to a PhD is more organized than before.

In the mid 1990s the Ministry pushed for the creation of doctoral schools⁸ and this led to the introduction of procedures, rules, and criteria in decisions pertaining to PhD candidates. The idea was to create specific structures in charge of PhD programs, most of the time for a group of disciplines. With the Bologna Process, the idea that PhD candidates should be taught has spread and such candidates are now required to attend 90 hours of taught coursework in three years. Before, PhD candidates had no classes and their training only occurred through the—sometimes very loose and intermittent—relationship with their supervisor. The main objective of the new doctoral schools is to reduce the number of years spent on PhDs, to diminish the drop-out rates, to improve the quality of the PhDs produced and the quality of the supervision, and also to revise the master-disciple relationships prevailing between a PhD candidate and his *directeur de thèse* (PhD supervisor, only one person most of the time in France). Today, the allocation of PhD fellowships (now called “doctoral contracts”) is no more in the hands of the person in charge of a master’s program as it was in the past, but is more and more collectively decided upon by a committee.⁹ In some cases, calls for proposals are issued in order to encourage candidates trained in master’s programs from other universities to also apply, thus increasing the level of competition and the formalization of the process, as selection procedures are explicitly designed (including selection on dossiers and interviews) and criteria are detailed. The research units in which the PhD candidates will prepare their doctorate may also have introduced a selection process before pushing for their candidates at the level of the doctoral schools. The variety in the

concrete practices developed by the graduate schools is high and all did not go as far in the formalization of these processes (Dahan 2011), but there is a general trend towards more rules and more competition. This is probably the reason why, in the interviews held with recently recruited faculty, these individuals showed more strategic behaviors than their predecessors in the way they handled their career. For example, in the 1970s, a professor might have suggested that a student apply for a PhD fellowship. But, in order to get this now, such a process no longer depends solely on the suggestion of one's professor. The interviewees also often say that they were aware of the problems of employment faced by PhD holders and tried, for some at least, to be strategic about the choice of where to complete the PhD with post-study employment prospects specifically in mind.

With important variations among disciplines, and from institution to institution within the same discipline, there is also a global trend towards more attention paid to PhD training and more collective supervision. This includes preparing the future doctors to hiring norms, i.e. making sure they will meet the minimum expectations (for instance, having some teaching experience or having a paper published or submitted for publication), and even, in some cases, “coaching them”—some labs organize mock interviews in order to train their doctorates for the interview phases.

Once a doctor—and with the exception of some disciplines like life sciences, but also physics, where at least one post-doc (abroad, if possible) is required—the early career researcher can apply for vacant positions leading to permanent posts as *maîtres de conférences* in universities. The first step is to apply for what is called “qualification;” this step is required for university positions but not for the CNRS. A national body, the *Conseil National des Universités* (CNU), made of discipline-based commissions, examines once a year the dossiers sent by new doctorates¹⁰ and decides whether they are

qualified, i.e. whether a person can apply for a position in French universities. What is required might vary from one discipline to another (as can be seen by reading the advice to applicants posted in recent years by most of the discipline-based commissions of the CNU on their websites). However, some general issues are common for all, such as: the quality of the PhD; the assessments collected in the report written by each PhD defense jury;¹¹ the teaching experience of the candidate (has he taught different levels of classes and a variety of topics?); any papers or books already published, and their quality.

Those who are qualified by the CNU can then apply to all vacant *maîtres de conférences* positions. The qualification policy of the various CNU commissions might be quite different. Some are very Malthusian and Jacobin,¹² and they qualify the number of individuals that is quite close to the number of positions that will be opened, thus leaving little room to the recruiting universities; others qualify all the people they consider bright enough to compete for vacant positions. The rate of qualification¹³ in 2011 ranged from 20 percent in public law to 95 percent in mathematics.¹⁴ This qualification is granted for four years and is renewable.

The candidates who are deemed qualified by the CNU can apply for vacant positions in universities. Since the 2007 act, a *comité de sélection* (hiring committee) is set for each vacant position at the department level, and its composition must be approved by the university president. It can include between 8 to 16 academics, 50 percent of them being external, i.e. coming from institutions other than the recruiting university. When they meet, at least 50 percent of the present members must be external.¹⁵ They generally start by meeting once in order to sort out some of the dossiers and invite a short list of candidates (ten to fifteen) to come for an interview. Most of the time the candidates are invited on the same date and are submitted, one after another, to an interview lasting 20 to 30 minutes. This is a very short time to decide that someone will serve as a civil

servant over the next 30 years, and although this standard is not compulsory but rather inherited, most universities still proceed in this way,¹⁶ “as they always have.” At the end of the day, the committee makes a decision and produces a ranking. If the top candidate accepts the position, the process is over. In most cases there is no negotiation with the candidates about the working conditions. The salary is fixed according to a national scale and therefore salaries are the same for all disciplines and all universities.

The labor market for young academics

After this description of the processes leading to the university job market, we can look at how the latter is developing. In a first section, we will address this specific issue and then describe the job market outside academia.

The university job market

While the quantitative growth in project-based research increased, the number of positions available for work on a research project for a limited period of time (sometimes up to 4 years), the number of *maîtres de conférences* positions opened each year tends to diminish.

INSERT TABLE 2

One could expect that these two parallel dynamics would lead to an increase in the average age of access to a first permanent position and a longer delay between the end of the PhD and this first position. But this is not the case. A recent study (Musselin, Pigeyre and Sabatier 2011) compared the profiles of those getting a first permanent position today with those in the 1990s, 1980s, and 1970s. The study looked at the average

age, the delay between the PhD and access to a *maître de conférences* position, and the age of the academics when they obtained their PhD. Surprisingly, we observed that those who get such positions display the same profiles today as in the last several decades. They are young, quick, and early. In recent years, the average age of access has remained stable, between 32 and 33, of course with important variations across disciplines (6 years of difference in average between humanities and sciences), see in table 3.

INSERT TABLE 3

Most of the candidates getting a first *maître de conférences* position get it within two to three years following completion of their PhD (again, with variations according to disciplines) and received their PhD quite young, meaning that they had a rather standard scholar trajectory (no or few repeated years, no or few bifurcations from one trajectory to another, etc.). Between 2007 and 2011, for instance, almost 50 percent (although a little less in 2011) of those who got a *maître de conférences* position were “qualified”¹⁷ the year they applied for this position. As most people apply for qualification just after getting their PhD,¹⁸ the delay between the end of the PhD and their access to a position was very short for these candidates. However, 25 percent of the newly recruited were qualified a year before, and around 16 percent two years before, so almost 90 percent of the new *maîtres de conférences* received their PhD within three years.¹⁹ The differences among disciplines are quite interesting here. In 2011, 66 percent of the newly recruited were “qualified in the year” in Law, almost 40 percent in humanities (however, this rate stood at 51 percent in 2007 and has decreased every year since), and 45 percent in science. The decrease in open positions mentioned above

therefore leads to the fact that more and more candidates who are young, early, and rapid do not get a position when they apply (while they would have got one if more positions were opened). Thus, demonstrating these characteristics (i.e., young, quick and early) does not guarantee access to employment anymore. These characteristics are decisive factors, but not sufficient conditions to ensure employment success.

Two consequences can be drawn from the previous remarks. On the one hand, French hiring committees do not seem to modify their preferences despite the scarcity in positions. In other words—and of course too simplistically—they generally prefer a young candidate having just finished her PhD to a candidate who has not secured a position five years after completing his PhD. On the other hand, and as a result, it seems that the longer you work as a post-doc, the less chance you have to get a *maître de conférences* position. A kind of reverse seniority process seems to be in place.

These trends are not easy to document, as there are no complete data on French part-time staff. But a recent study led by the ANR about the post-docs employed on projects funded by the ANR seems to confirm this dynamic and add another component to it. The ANR declared that “their” post-docs often get a position during the project (which is of course a problem for the project leaders who must recruit new staff) or just after this post-doc experience. ANR projects are rather prestigious because they result from a rather selective process. This means that project-leaders can also be selective in the recruitment of their post-docs (and choose among those just finishing their PhD). Thus, being a post-doc on a ANR project becomes a quality signal for hiring committees when ANR post-docs apply for a job. This reveals the existence of segmentation among post-docs. Therefore, the problem is not so much to get a post-doc (with the general development of project-based research, the offer in post-docs has increased) but to get a “good” post-doc, i.e. a post-doc with a reputable research team, leading to interesting

publications, not too far from your own interests or field, that can be used as a signal for quality among prospective employers.

Beyond being young, early, and rapid, the newly recruited *maîtres de conférences* share further characteristics.²⁰ First, the percentage of females is rising. In the three disciplines studied by Musselin Pigeyre and Sabatier (2011), they observed a clear trend in this direction, even if some discipline like physics remains very male.

INSERT TABLE 4....

In some disciplines (life sciences or management, for instance) women are more numerous.²¹ Nevertheless, in the sciences the share of females remains low among both candidates and those hired. Even if indirect discrimination may happen and is still difficult to control (Musselin and Pigeyre 2009), it seems that hiring committees are not discriminatory at the entry level.

Because of the idiosyncratic character of the recruitments procedures (i.e., a PhD is not enough, and you must be qualified before applying for vacant positions which, furthermore, are most of the time posted on university websites and in ministerial publications but not in newspapers), newly recruited *maîtres de conférences* are not very international. When there are international applications, they are also mostly emanating from internationals already familiar with the French system. The whole process being in French (and classes mostly given in French), applicants must be francophone. This, of course, reduces the scope of potential international candidates even if university faculty members are among the few civil servants allowed not to be French. Between 1998 and 2010 (a 13-year period), 2,697 non French *maîtres de conférences* were recruited, so about

207 each year. For the 174 recruited in 2010, 85 came from Europe, 53 from Africa, 25 from Asia, 7 from South America, 3 from North America, and 1 from Australia.²²

When it comes to the reverse situation, French young researchers are not often looking at the international job market²³. Mobility primarily concerns post-docs and is first of all oriented to the United States. The number of French working abroad as academics seems rather low, except for some disciplines (such as economics, for instance). Nevertheless, as highlighted by the frequent declarations on the brain drain threat faced by France, it seems that French academics who apply abroad are rather successful. Further studies would be needed to more precisely know which disciplines are concerned, and the conditions to meet in order to get a position abroad (for example, in which language was the individual's PhD written, what kind of publications had been produced when he or she applied abroad, did he or she spend a post-doc period or was the individual visiting in the country where he or she was recruited, etc.). Research quality is, of course, at stake in international recruitments but networks are not completely irrelevant (Musselin 2009 [2005]).

A further characteristic of the French university job market, despite its national character, is that it is not uniform—each position is unique. As a result, the pressure ratio (number of candidates applying for a position) for each position very much depends on the discipline and on the post itself—whether it is “high-profile” or not, whether the department is well-known or not, whether it is a department involved in vocational teaching (which means more time for pedagogical duties, less time for research, and more risk of not being able to do what is needed to become a professor), whether it is located in an attractive place or not (i.e. well served by public transportation, or sunny, or close to family, for instance), etc. The national data provided each year by the French ministry on the yearly recruitments show that some

positions easily find a candidate while others remain vacant. The 2011 report concludes that universities located in the Ile de France (i.e., Paris and its suburbs) and in large French metropolises received many applications and were successful in recruiting someone in close to 100 percent of the cases. But, the situation is more difficult and reveals important variations among universities located in small cities; in some cases, they were able to recruit for only 80 percent of the positions opened. In some cases, all the candidates ranked by a committee declined the offer (32 of the 1,707 positions opened in 2011 remained vacant for that reason), because the candidates got another offer in a more attractive place.

In such cases, inbreeding may be a way out, but in recent years, this practice has been heavily criticized (see, for instance, Godechot and Louvet 2008), and the inbreeding rate has become one of the indicators institutions have to provide when they are evaluated by the National Agency for Evaluation (AERES, *Agence d'Evaluation de la Recherche et de l'Enseignement Supérieur*). This might explain why inbreeding tends to decrease, no matter how it is measured,²⁴ In 2010, only 25 percent of the new *maîtres de conférences* were recruited by the university that already employed them as a post-doc or ATER, and this number decreased over the previous ten years (it reached 43.2 percent in 2002 and 32.6 percent in 2005, for instance). Also in 2010, 79 percent of the new *maîtres de conférences* got their PhD from a university other than the one that recruited them (meaning that 21 percent were recruited by the same institution where they got their PhD). Many reasons can explain the resilience of inbreeding, even if it decreases. There is security provided by the fact that you already know the person and that he/she will be able to provide what is expected. There is less probability that this person will move rapidly to another place or refuse the offer. There is a higher chance that this person will feel committed to the hiring institution's location and not be a "prof TGV."²⁵ This is also

a way to secure some positions for your own PhDs and still remain an attractive place for new PhDs.²⁶

As a whole, the university job market in France has evolved in many respects (more women, less inbreeding), but in others it remains quite the same (still not very international, for instance). Despite the increase in post-doc positions and in opened positions, the average age of access to a permanent position remains stable and reveals a preference for young, early, and rapid candidates, leaving outside those pursuing post-docs for too long.

The job market outside academia

In the case of France, this situation of young doctors not getting a job in academia is all the more problematic given that firms and public administration are still reluctant to hire PhD. As a result, positions traditionally held by doctors in other countries are occupied in France by graduates from master's programs. The case of engineers is typical and exemplary for this. The prestige of the French engineering *grandes écoles* led R&D departments in firms to recruit among the engineers (master's level) trained by these schools rather than among PhD holders trained by universities. As mentioned in the introduction, this is (slowly) evolving—in the past, the engineering *grandes écoles* were hardly research-oriented and had no or very limited doctoral programs, but today they are pushing some of their students to go for PhDs, or some of these schools deliver PhD programs themselves. The same reluctance for PhDs is nevertheless observable for high civil service positions in the French administration. The creation of a specific *grande école* to train civil servants (the *Ecole Nationale d'Administration*, created in 1945), and the quasi-absence of relations between this school and universities, has never facilitated the access of PhDs to such positions.

Reciprocally, because jobs for PhD holders were first of all for the academic profession, PhD candidates rarely engage in doctoral study with the aim of working outside academia. Not getting a job in the academic profession was long seen as a failure and not as an opportunity or a positive choice. Although many efforts have been undertaken—such as the development of joint PhD fellowships, linking a university and an employer—to change the situation on both sides (i.e., among employers and PhD candidates), PhDs are still not recognized as a level of qualification (as master's are for instance) by firms or public administration, and do not provide access to a higher position or a higher salary in the public and private sector.

This probably explains the decrease in numbers of students in research-oriented master's programs (as opposed to the professional master's degrees) created with the Bologna reform. Indeed, when choosing where to apply for master's-level study, bachelor's degree holders prefer a path possibly leading more directly to a job. As some nevertheless opt for a PhD after their professional master's, the number of PhD candidates remains high, but academics frequently express doubts about the attractiveness of their profession and the quality of those wanting to prepare a PhD. They often complain that they lose the best students, which is of course impossible to demonstrate.

Nevertheless, it seems reasonable to observe that the recurrent critiques written about French universities, the job insecurity of young researchers, and the low prestige of academic positions in French society, do not help attracting young people to academia. However, one might also argue that only the very motivated are entering the academic process and making it successfully through the whole process.

Contracts at entry-level

But what is the situation of the happy few who get a permanent job? Let us now turn to what happens in terms of salary and working conditions once a *maître de conférences* is hired. We will first address the financial conditions before looking at their professional integration.

As mentioned above, *maîtres de conférences* are permanent civil servants. After an 18-month period of probation, the newcomer is confirmed.²⁷ There is then no end to the position until retirement, except for extraordinary reasons (criminal activity, for instance). The access to the civil service comes with all the social benefits attached to it (permanent employment, social insurance, pensions etc.)

INSERT box here

The salary conditions for a candidate getting a *maître de conférences* position are set according to a national salary scale that takes into account the individual's past trajectory, his family situation, and the location of the university. The location of the university is relevant in the sense that France is divided in three zones; zones 1 and 2 allow access to a "territorial premium" (1 percent top up of the salary in zone 2 and a 3 percent top up in zone 1, where Paris is located) in order to take into account the differential cost of living in different places.

The first degree on the salary scale is 2,068.85 euros (*brut* [gross]). But often the individual's previous positions (for instance, as an ATER or as the holder of a 3-year PhD fellowship), are taken into account in the calculation of seniority and this provides access to a higher salary group on the *maîtres de conférences* scale. Salary then increases according to seniority from echelon 1 (2,069 euros per month *brut*) to echelon 9 (3,800 euros per month *brut*). Some *maîtres de conférences* will be promoted (based on merit) to

maîtres de conférences hors classe. This opens access to another seniority-based salary scale, from echelon 1 (3,046 euros *brut*) to echelon 8 (4,460 euros *brut*). This *classe* is mostly for those who will not try to, or never succeed in, becoming a professor.

With the exception of a few places, there is no negotiation about research conditions or specific housing options when an individual is offered a *maître de conférences* position. Getting one's own office, even one's own desk within a shared office, is not always guaranteed.

In recent years, some universities have tried to improve the conditions for new arrivals. Some organize a welcome party with all the newly recruited staff of the year; some reduce the teaching duty for newcomers in order for them to still have time to carry on their research while at the same time preparing their classes. But, this is still rare and the first years are often a period where one must teach classes that are new, which have to be developed from nothing, and are often those courses the other teaching staff do not want (i.e. not one's first choice); and where one is asked to take over the responsibility of a program (for instance, the third year of the bachelor program) or some administrative responsibility. Given these circumstances, it is not rare for some to quickly start disengaging from research.

The texts defining the duties of *maîtres de conférences* are national and not very precise. *Maître de conférences* are supposed to spend half of their time teaching and half researching. The teaching obligation is for 192 hours a year, including grading exams and other activities (for instance, being head of department), as specified in the 2009 reform.²⁸ This leaves room in the individual's schedule, and therefore the first years following the first permanent position are crucial for the development of individual career trajectories and, *in fine*, for access (or not) to professorship. Different factors may have an influence. The first is the place where one is recruited. Departments (or

disciplines) that are student heavy are less favorable in terms of teaching load. In a study focused on four disciplines, for instance, Musselin and Becquet (2008) observed that the demand for training in management was so high that it was difficult for newly recruited academics not to accept supplementary hours, particularly if they gave access to extra income. Even if this study observed that the preparation and the content of teaching in this discipline was rather specific and could be less time consuming, the young *maîtres de conférences* all had to spend a lot of hours in class, while the physicists had a less heavy teaching load because of the heavy decrease in student numbers in these disciplines. The same study also observed that in large departments it is more frequent to teach one's own topic, while in small departments, more polyvalence is required. The existence and competence of some administrative support also makes a difference—in order to send applications to the young researcher program of the ANR or to the early career ERC (European Research Council) grants, places with dedicated staff provide an advantageous environment for their young faculty interested in research.

For some of the newly recruited, the first position might be a shock if they prepared their PhD in a rather protected research unit and developed an idealized representation of what academic life is, but then got a position in a department facing a heavy teaching load, where students are less well-prepared and where the newest hires are given the classes and responsibilities no other faculty member wants (a practice still rather frequent in French academia!). Some realize with fear that they will not be able to carry on their research ambitions, that their day-to-day life will be mostly dedicated to teaching and administrative tasks, despite the fact that they decided to prepare a PhD for the sake of "Science." As resignations by *maître de conférences* are rare, one might conclude that such individuals eventually learn to cope with this situation.

Nevertheless, in interviews with academics recruited in 2006-2007, disappointment and criticism were rather frequent, even if these individuals were at the same time relieved to have a permanent position (Musselin, Pigeyre and Sabatier 2011).

To these contextual constraints, one must add more relational ones. Within the same discipline, Becquet and Musselin (2008) studied places where the older staff was very supportive of young people, reminding them of the career requisites and encouraging them to meet such expectations, or even allocating tasks in a way that allowed those writing their *habilitation* or preparing the *agrégation du supérieur* to teach less or have less administrative burden. In other places, nobody cared about the newcomers or bothered to coach them. As quantitatively shown by previous work on the United States (Allison and Long 1990), the work environment also plays a role in France—belonging to a department where research is prioritized and where colleagues publish in good journals provides a push to publish oneself and to do research. The discourses held by those recruited in very active places was clearly different from what was heard from others located in more “sleepy” departments (Musselin and Becquet, 2008). Nevertheless, Musselin and Becquet (2008) also concluded that the management of careers in France is mostly dependent on individuals themselves, within the framework constructed by the opportunities and constraints mentioned just above. Compared to the influence of the human resource management offices in the United Kingdom (Paye 2013), which have developed procedures, instruments and devices, and followed the careers of individuals faculty members, French academics are left quite alone and free to construct their own route. This is, on the one hand, an opportunity, as this increases autonomy, but, on the other hand, it may be a danger if one follows a path to a dead end.

Finally, family situation and gender also play a role in this process. In a study of the access to professorships in management, Pigeyre and Sabatier (2012) observed that women with children were clearly discouraged when it came to preparing and applying for the *agrégation du supérieur*—the very time-consuming preparation it requires is difficult to achieve and tiring when you have young children and a husband working as an executive in a firm with no flexible schedule (which was frequently the case for the women interviewed for the study) (Pigeyre and Sabatier 2012). On top of that, success with the *agrégation du supérieur* may result in getting a position located quite far from one's residence, and many of the young women interviewed were less willing than men to become a "TGV prof" for at least three years (the minimum period before being allowed to apply for another position). As a result, while the application and hiring process is not discriminatory itself—female applicants are as successful as men (Pigeyre and Sabatier 2012)—the number of female applicants remains low compared to men.

Being in a department with a strong research tradition or a heavy teaching load, having supportive colleagues or, on the contrary, colleagues not caring about the younger staff or even leaving them the tasks they do not want to take on, makes a difference for newly recruited staff and might affect their career development and chances to become a professor. This might be accentuated by the publication of the evaluations of research labs by the Agency for the evaluation of research and teaching (AERES) since 2006.

Current state of young generation of university faculty

Are young, French, academic staff satisfied? Do they think like their older colleagues? Do they have different expectations? Because no large survey on French academics has been undertaken, it is very difficult to know what French academics think and whether

the young generation thinks differently from the older. This chapter, therefore, relies on rather heterogeneous sources in order to first provide information about the post-doc population and then offer an overview on some attitudes observed among the French university staff.

Not surprisingly, post-doctoral positions are not easy to cope with. This was one of the conclusions of previous but already quite old qualitative studies (Mouranche 1997; Dedieu 2002) on post-docs that showed that the living conditions of post-docs are difficult, not only because of job insecurity but also because of their work situation. Post-docs are expected to work hard for their employers and convince themselves that they have an interest in working hard in order to improve their CV. In science, especially, they are often working on topics whose results and processes are less certain than those of doctoral candidates, thus increasing the stress on results. Furthermore, most of the research units employing them indicate that they do not feel responsible for them; what happens to them after their contract is over is not an issue for their employers. Finally, when they are obliged to work on projects that are quite far from their own interests (a situation that is rather frequent in humanities and social sciences), they are also often torn between what they have to achieve for the project and their own aspirations for publication.

The recourse to temporary staff is not new in France but the situation of the current post-docs is rather different from the situation of young researchers in the mid-1970s and even mid-1980s (although vacant positions were also very scarce at that time). The temporary contracts on which the older generation relied before getting a job were one-year contracts, renewed within the same department until a permanent position was opened and most of the time allocated to the temporary teacher with the highest seniority. This waiting list system was not comfortable but was more secure than

successive post-docs in different places, and the department (often) felt responsible for these individuals. As a result, biographical interviews with the older generation show that they were less mobile, often in their temporary positions by chance, waiting for their turn, and not under pressure for publication. By contrast, academics who recently succeeded in entering the academic profession say that the period before they got a job was characterized by time pressure, that they themselves were anxious, and that they developed rather strategic behaviors: looking for the right unit to prepare the right PhD, trying to choose the right place for their post-doc, applying for some places and not for others (at least the first time they applied).

If we now consider university permanent staff, whatever their seniority, two studies provide some information. The first one is a survey conducted in 2005 (Faure and Soulié 2006) on a population of academics who signed a petition against the Belloc report (2003), which suggested new rules for the academic profession. Despite this sampling bias, it is interesting to notice that there is a consensus among them on the increase in the variety of tasks they have to achieve as well as on the expansion in teaching and administrative activities (thus, less time for research). They were also very preoccupied by the change in norms and values academia was experiencing, according to them. A more recent survey (Chatelain et al. 2012), which again did not cover all academics²⁹ and aimed at studying the governance of French universities, suggests further conclusions because it included some questions on individual attitudes. It shows that the feeling of belonging to their university is rather high among French academics. Affiliation to the disciplines is somewhat higher, but the differences between the two are quite low. On a scale from 1 (low) to 7 (high), faculty members indicate a feeling of belonging of 6.13 to their discipline and 5.75 to their university.

We also looked at their attachment to public values, their attitudes vis-à-vis performance-based funding, and increased differentiation among individuals, units or institutions. We observed that, compared with administrative staff and the president and her team, French academics are attached to public values and rather against performance-based funding and increased differentiation, but much more so if they were *maîtres de conférences* rather than professors, and somewhat more so if they had seniority of more than ten years in academia. One may conclude that the attitudes and values of the young generation, despite having been trained in a more competitive setting, have not radically evolved.

Main challenges and future trends

The new national government in place following the presidential elections in May 2012 is preparing some reforms that should be announced by Spring 2013. Some orientations are already known, such as a decrease in project-based funding (an increase in lump-sum budgets), the creation of new positions (1,800 in 2013), the recognition of the PhD as a qualification, etc. This could somewhat relax the tensions in the academic labor market. However, there is not much hope that it will strongly improve this labor market or that a dramatic expansion of the university system will occur and lead to more recruitment; most of the retirement wave is over and no strong increase in the student population is expected. Doors will not be largely opened in a near future, if ever.

Three main challenges are to be faced. The first one concerns the attractiveness of doctoral programs. There is a risk that fewer students will begin a PhD, or that the best students will not pursue advanced studies. This could change, of course, if PhD holders were better welcomed by the non-academic market and better paid than master's degree holders. The recognition of the PhD is therefore a first important step to keep doctoral

programs attractive, renew the population of faculty members in the future, but also to train highly qualified staff for the non academic sector.

Another challenge has to do with the competition between the salaries and working conditions offered by firms or even the top public administration and those offered by universities. Even with the recent investments in the higher education and research system, universities simply cannot offer the same material benefits as these other potential employers. The lack of prestige of French universities in the training of highly qualified manpower has led to endemic under-funding and rather low investments in this sector for a long time. This cannot be radically modified in a few years.

The last challenge for French universities deals with their international attractiveness. If the best PhDs do not go for firms, they might go abroad where better conditions and salaries might be offered to them, if they get a job abroad. This could be compensated by the hiring of international academics in France who might be attracted by the fact that access to permanence occurs early (earlier than in the United States and much earlier than in Germany) and that there has been no reduction in the number of permanent positions (again, in contrast with Germany and the United States). Nevertheless, this would require a profound change in hiring procedures, as they remain obscure to those not used to the French system and almost insurmountable for those with no French.

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Table 1. University academic staf, 2010-2011

	Professors	<i>Maîtres de conférences</i>	Affiliated staff	High school teachers	Specific staff	ATER	PhDs with fellowships	Total
Law*	2,697	5,991	1,252	1,658		1,545	3,293	15,184
Humanities	4,641	11,188	934	6,851	1,057**	2,051	4,372	30,160
Science	8,131	17,255	688	4,382		2,212	4,772	36,752
Medicine	5,002	3,342	233		4,249***	116	246	12,955
Total	21,084	38,266	3,110	12,891	5,306	5,948	12,683	96,178

Source: http://cache.media.enseignementsup-recherche.gouv.fr/file/2012/36/8/NI_MESR_12_082012_221368.pdf, (accessed December 15, 2012)

Notes:

Blue = civil servants

* Law = law, economics, management and political science

** Lecturers in languages mostly

*** Specific staff in medicine

Table 2 : Number of first positions opened (2004 to 2011)

Year	2004	2005	2006	2007	2008	2009	2010	2011
Positions	1,975	1,967	2,318	2,135	2,060	1,977	1,797	1,709

Source: Figures were extracted from the statistics available on the website of the French ministry for Higher Education and Research (MESR): <http://www.enseignementsup-recherche.gouv.fr/cid22708/bilans-statistiques.html> (accessed December 15, 2012)

Table 3: Evolution of the average age of access to a position of *maître de conférences* (2001-2011)

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Average age in years, months	33, 7	33, 10	33, 5	32, 8	32, 9	32, 8	32, 10	32, 9	33	33	33, 1

Source: Figures were extracted from the statistics available on the website of the French ministry for Higher Education and Research (MESR): <http://www.enseignementsup-recherche.gouv.fr/cid22708/bilans-statistiques.html> (accessed December 15, 2012)

Table 4: Percentage of women recruited in the different cohorts and disciplines

	Cohort 1976-1977	Cohort 1986-1987	Cohort 1996-1997	Cohort 2006-2207
Management	40	16	48	54
History	32	26	41	42
Physics	22	27	23	17

Source: Musselin, Pigeyre and Sabatier (2011)

BOX

How to read salaries in France

Except where noted in the text, the salaries presented in this part of the chapter are monthly and “brut,” which means that what the employer pays for social insurance, pensions, etc. has already been deducted but not the compelling share the employee has to pay him/herself for the same welfare programs. This share reaches around 16 percent of the “brut” salary. This means that when you have a brut of 2,000 euros per month, you only get around 1,700 euros in your bank account. You then have to pay revenue taxes. It is impossible to give an idea of the percentage of the salary taken by these taxes, as it depends on whether one is married or not, the salary of the spouse, the number of children, etc.

Notes

¹ Brain drain is often a topic for newspapers or websites. See, for instance, among the more recent expressions and many others, what Saïed Paivandi declared last November (<http://www.atlantico.fr/decryptage/fuite-cerveaux-france-est-elle-en-train-faire-perdre-talents-saeed-paivandi-534157.html?page=0,0>), or this dossier on the same issue :

<http://www.linternaute.com/science/science-et-nous/dossiers/06/recherche-francaise/0.shtml>.

² The number of positions opened at research institutions is much lower than at universities. In 2013, for instance, the three main research institutions (CNRS, INSERM and INRA) opened a total of 463 positions while universities opened 3,600 positions in 2011 (figures are not available yet for 2013).

³ Nevertheless, between 2000 and 2009, the number of professors and *maîtres de conférences* increased by almost 12 percent while the number of students increased by less than 4 percent (while student numbers grew from 31 percent between 1990 and 1995!).

⁴ See <http://www.enseignementsup-recherche.gouv.fr/cid56113/doctorants.html> (accessed December 15, 2012)

⁵ In France, there are many ways to become a high school teacher. The more prestigious route is to pass a highly selective national exam (*concours*) called “*agrégation du secondaire*.” Those who pass it successfully generally teach in lycées (high schools for the 3 last years before the baccalauréat) or in post-baccalauréat classes preparing students for entry into the *grandes écoles*. However, some high school teachers are also assigned to universities and generally teach undergraduates. Because their teaching load is twice as heavy as the teaching load of the *maîtres de conférences*, the *maîtres de conférences* tend to be replaced by high school teachers, in order to deal with the high number of undergraduates.

⁶ Only those doctoral candidates are included in Table 1. Doctoral candidates with no fellowship—a situation still quite common in humanities and social sciences—are not considered here.

⁷ There are no national statistics on this increase and comparisons over time are made difficult because the terminology and ways of counting are changing. However, looking at the data published by the CNRS each year on its staff, it seems that the number of non-tenured researchers multiplied by almost 3 from 2000 to 2010, reaching about 2,400 individuals today (*Bilan Social CNRS 2000*, <http://bilansocial.dsi.cnrs.fr/pdf/bilan-social-2000.pdf>, accessed December 15, 2012, and *Bilan Social du CNRS 2010*, <http://bilansocial.dsi.cnrs.fr/pdf/bilan-social-2010.pdf>, accessed December 15, 2012).

⁸ Before, everything relied on the interpersonal relationship between a PhD candidate and his/her supervisor.

⁹ The composition of this committee may vary a great deal.

¹⁰ These committees also look at the dossiers of doctors who received a qualification four years ago but in the intervening period have not gotten a job and are applying again for qualification.

¹¹ Each PhD ends with a public defense in front of a jury made up of at least the supervisor, two reviewers (external to the university of the candidate), and a president.

Each member of the jury writes a report with their review of the thesis ; these reviews are assembled into one text signed by all of them.

¹² They restrict the choice of universities by qualifying a restricted number of individuals and thus exercise a centralized and national control over their discipline.

This is often the case in the field of law.

¹³ Information taken from http://cache.media.enseignementsup-recherche.gouv.fr/file/statistiques/74/8/bilan_recrutement_2011_etude_version_def_211748.pdf (accessed December 15, 2012).

¹⁴ It reaches 95 percent in mathematics but in this discipline there is a « cooling off » process designed to discourage doctors with a weak case from applying for qualification.

¹⁵ This means that if 5 internal and 4 external academics are present, one of the internal academics has to leave the room. This has led to tricky situations where none wanted to leave and a decision has to be made by the university president.

¹⁶ The composition of the committee and the compulsory participation of at least 50 percent of external members encourages universities to keep this “tradition.” They generally manage to invite all the short listed candidates over one day and thus the external academics do not have to spend many days sitting on the committee. Recently,

some universities tried introducing more extensive job interviews, but this is very limited.

¹⁷ « Qualified » in this context means allowed to apply for vacant positions of *maîtres de conférences* by a national body called CNU (see previous section of this same chapter).

¹⁸ This is true except in disciplines such as life sciences and physics where one or two post-doc experiences, preferably abroad, have become the norm before sending a first application for a position of *maîtres de conférences*.

¹⁹ See the reports posted on <http://www.enseignementsup-recherche.gouv.fr/cid22708/bilans-statistiques.html> (accessed December 15, 2012).

²⁰ Because collecting data about ethnicity or religion is not allowed in France, we have no information on these aspects. We also lack information about social background.

²¹ But they are, nevertheless, much rarer in the corps of the professors.

²² Please see http://cache.media.enseignementsup-recherche.gouv.fr/file/statistiques/89/0/orig2010_192890.pdf (accessed December 15, 2012).

²³ Language might be a first explanation for that, but also the fact that for many years the situation in France was not as difficult as in some other countries, given the early access

to permanent positions, the new positions created each year until 2007, a rather large national market, the civil servant status of academic staff, etc.

²⁴ The data in this paragraph are drawn from http://cache.media.enseignementsup-recherche.gouv.fr/file/statistiques/89/0/orig2010_192890.pdf (accessed December 15, 2012).

²⁵ “Prof TGV” is the slang term for a faculty member not living close to the university but commuting (with the high speed train called the TGV) to give his classes and not spending time in the department or taking over service activities.

²⁶ In France, unlike the United States, all universities have PhD programs. They therefore all have to care about their placements in a country where public administrations and firms are very reluctant to hire doctorates.

²⁷ The cases where a decision is made not to confirm a *maîtres de conférences* are extremely rare.

²⁸ After this reform, universities were asked to write a “teaching referentia,l” specifying what activities will be included in the teaching duties and for how many hours. There is a national framework, but universities can adapt it to their specific cases.

²⁹ It was sent in Spring 2011 to university presidents and their teams of vice-presidents, the directors of administrative services at the central level, the elected members of the various university bodies (*conseil d’administration, conseil scientifique* and

conseil des études et de la vie étudiante), the deans, the heads of department, the directors of research units and their administrators. About 2,600 interviews were conducted.