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## LOW-SKILLED WORKERS IN THE “KNOWLEDGE-BASED ECONOMY”: THE CASE OF THE PHARMACEUTICAL SECTOR IN FRANCE AND BELGIUM

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*Abstract:* When social sciences study the workforce in the “knowledge economy”, they focus on the most highly skilled workers (managers and professionals). This article addresses the issue of the role and the employment conditions of low-skilled workers in the knowledge industries. How can we explain the persistence of low-skilled workers and bad jobs in high-tech sectors? And do the workers at the bottom of the hierarchy take advantage of working in a knowledge-based sector? From a collective survey conducted in the pharmaceutical sector (ethnographic surveys in production plants and drug distribution centers), we show that in this sector low-skilled workers (mainly women) are confined to low status jobs, with poor evolution prospects coupled with a growing use of temporary contracts. Although they manipulate high-tech products (drugs), low-skilled workers do not enjoy better working conditions than low-skilled workers in other industrial sectors. And we could even make the hypothesis that the situation of low skilled workers is even less enviable because they have to comply with the specific regulations of the pharmaceutical sector to guarantee the continuity of health care and safety; constraints that necessarily result in highly flexible schedules and variable work intensity.

*Keywords:* Pharmaceutical industry, warehousewomen, drug, low-skilled workers

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The pharmaceutical sector is part of what is usually referred to as the “knowledge-based economy”, an economy based on innovation and providing highly skilled jobs (Christensen, Lundvall 2004; Chandrasekhar 2006). In these analytical texts, the knowledge-based economy is related to qualified employment in two different ways: first, skilled jobs are expected to drive economic growth and, secondly, innovative companies would increase the proportion of highly qualified workers in the new economy (Bassanini, Scarpetta 2001). Most surveys on technological sectors or companies focus on the most highly skilled workers, including managers and professionals, and they have extensively documented the working conditions and the career patterns of

these white-collar workers (Kunda 2006; Nokana, Teece 2001). Some authors present them as a new class, the “knowledge workers”, and as a symbol of graduate workers, autonomous and flexible (Reed 1996; Castells 2000). This optimistic scenario has been widely debated, other authors describing them as being under control and stressed (see Adams, Demaiter 2008), with some empirical analyses showing hybrid situations (Baldry *et alii* 2007; Donnelly 2009). However, low-skilled workers remain the hidden face of these high-tech sectors.

In this article, we will address the issue of the role and the employment conditions of workers of “low status” (at the basic level of the hierarchy of wage, power and prestige) in the knowledge sectors. Indeed, the production of material or non-material goods is based on low status jobs to ensure the smooth functioning of the administration, the production, and the distribution of products (Lüthje *et alii* 2013). For this study, we rely on the emblematic case of the pharmaceutical industry, whose growth pattern is deemed to be based on innovation (Bradley, Weber 2004; Chandler 2005). This sector has the characteristic of being very profitable (OECD 2002; Bélis-Berouignan *et alii* 2014), and has experienced great development since the 1970s. This sector has also the reputation of mobilizing, with high wages, many highly skilled workers in the category of scientific professions and experts. This is one reason, together with the necessity of the protection of public health, advanced by governments in Europe to support the development of this sector. However, the collective survey that we have conducted since 2007, shows that this sector also employs many low-skilled workers and non-permanent workers (fixed-term contracts, temps), mainly women, in areas such as production, packaging and handling (Fournier, Lomba, Muller 2014). With seven other colleagues, sociologists and economists, we have been making investigations on the whole process of production and distribution of drugs in France and Belgium. The methodology brings together quantitative, historical and ethnographic approaches (Arborio *et alii* 2008). We have used national statistics (Labour Force Surveys, Census, Enterprise data Surveys, data from employers’ associations: National Order of the Pharmacists and Association of Pharmaceutical Enterprises), archives since 1960 (professional and trade union journals, pharmacists’ PhD, internal documents of trade unions), and interviews (with company executives, trade union leaders, pharmacists, technicians, and blue-collar workers). We have made observations, sometimes participant, during several months in five production plants, in a department of pharmaceutical sales representatives, in a warehousing, and in some pharmacies.

We will underline the specific characteristics of this workforce, functioning between the constraints of profitability and public health. How can we explain the persistence of low-skilled workers and bad jobs in this high-tech sector? And do the workers at the bottom of the hierarchy take advantage of working in a knowledge-based sector? We will present first an overview of the workforce in this sector in France, one of the top producers of drugs in Europe, and the contrasted situation between production companies and pharmacies. In the second part, we will focus on the particular case of a segment of the sector, wholesaling, to show how the sector mobilizes a workforce divided between highly skilled workers (pharmacists) with good working conditions and revenues, and “low status workers” (switchboard operators, warehousewomen and delivery drivers) who experience bad employment conditions. Finally, we shall see how

these manual workers are subjected to strong constraints in their daily work activity in order to comply with administrative regulations and to maintain the industry's and pharmacists' profits. These examples illustrate the polarization of employment and working conditions in the pharmaceutical sector.

### *Pharmaceutical production and pharmacy: two ways of managing employment*

In France, more notably than in other countries, the pharmaceutical sector has had continuous growth in sales since the 1970s<sup>1</sup>. As in other European countries, the regulation of the sector by the State and administrations (sales authorizations, patent conditions, fixing sales prices and margins, fixing the rates of reimbursement of drugs by public health insurance, monitoring production conditions, etc.) has allowed pharmaceutical companies to achieve profits that are both stable and very high (this is what we call the “regulatory revenue” of the pharmaceutical sector). The sector is also characterized by a significant increase of its workforce (for the production segment: 64,257 persons in 1971, 79,650 in 1990, 97,645 in 2010, and 98,690 in 2016)<sup>2</sup>, whereas most of the other industrial sectors experienced a decline of their workforce numbers during the same period, in a process of de-industrialisation<sup>3</sup>. In terms of composition of the workforce, the pharmaceutical industry is, as asserts the pharmaceutical employers' federations, a sector with a more qualified and more graduate workforce than other industry sector (see Table 1): in 2013, in the production segment, 64% of employees were technicians, foremen, supervisors, managers or professionals and 38% made up the rest of the industry's workforce. 61% had at least an upper secondary school diploma (“baccalauréat”<sup>4</sup>) versus 29% for the rest of the industry. In the context of the general rise in education attainment, the growth of diplomas becomes more marked. In the production segment, we can explain the high level of employees' qualification in several ways. First of all, it is because the productive specificities of this sector are tightly regulated by health and safety norms, and also because, universally, competition based on innovation is predominant (Hamdouche, Depret 2001). The important contribution of R&D in the pharmaceutical industry (Ballance *et alii* 1992) is the primary explanation for the recruitment of skilled employees. These include experts (engineers, statisticians, etc.), scientists (doctors, biologists, chemists, etc.), and also technicians in chemistry and biology. For the rest, a consequence of the implementation of quality standards in the plants has been the presence of a

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1 The turnover of the drugs produced in France increased from 2.0 Bn€ in 1970 to 11.7 Bn€ in 1990, 52.0 Bn€ in 2010, and 54.6 Bn€ in 2016. The increase in selling prices and the health insurance system explain why this sector is very weakly affected by the economic crises.

2 Source: LEEM (French federation of pharmaceutical industries), 1980-2016; SNIP, 1971. The counting of the workforce of this sector is difficult because the historic series does not take into account the same perimeters (for example, include or not the production of pharmaceutical compounds) and it is difficult to account for the subcontracting structures (of R&D, of pharmaceutical sales representatives, etc.).

3 Between 1975 and 2016, the French industry lost around 40% of jobs whereas the production sector for drugs increased by about 53% (Source: INSEE and LEEM).

4 In France, the baccalauréat means the end of upper secondary school and authorization for entry into university. It can be in theoretical specialties or in technical/vocational domains.

Table 1: Distribution of employees (except retailers and employers) in the pharmaceutical sector by occupations, 2013

	Industry		Wholesale trade		Retail trade	
	Pharmaceutical sector*	Others sectors	Pharmaceutical sector**	Other sectors	Pharmacies***	Other sectors
Managers, Professionals	25%	16%	36%	21%	28%	8%
Supervisors, Foremen, Technicians	39%	22%	28%	23%	55%	13%
Clerical or sales workers	6%	11%	16%	30%	11%	71%
Manual workers	30%	51%	20%	26%	6%	9%
TOTAL	100%	100%	100%	100%	100%	100%
Number	83,989		77,431		131,356	
Women (%)	54%	29%	55%	36%	88%	63%
Part-time workers	13%	11%	17%	13%	42%	36%

Source: INSEE, DADS.

\*NACE Code 24.4 ; \*\*NACE Code 52.31 ; \*\*\* NACE Code 51.46.

great number of quality controllers, with a higher proportion of graduates than in other sectors. It is especially the case for managers with pharmacist diplomas whose presence was made compulsory from 1941 at each production site (Muller 2010). We observed that a significant proportion of them do not participate in research activities or in the implementation of “Good Manufacturing Practices for Drugs”, but their presence allows companies to suggest that they comply with health regulations. The presence of qualified employees also arises through organizational choices such as that of a massive recruitment of pharmaceutical sales representatives, comprising more graduates than the representatives of other sectors. An implicit reason is the commercial use of the desire for proximity of social class origin with doctors (Greffion 2011). Empirical researches, conducted in several plants, observed also recruitments of young manual workers with “baccalauréat”, but also massive re-qualification program of manual workers into technicians, after a new pharmaceutical collective agreement in 1994 (with the individualization of career development), greater automation of the production process and the development of job rotation and multi-skilling. All these transformations involved higher salaries for all categories of employees than in the other industrial sectors, and this has been made possible by the high and continuous profits (“regulatory revenues”) associated with this industry (Vekeman 2005). Besides the production segment, the pharmacies<sup>5</sup> segment depends also on the specific regulation of drugs, which generate high profits and are associated with a workforce notably more skilled than in the other retail trades. It is true in particular in France for the owners of 28,000 pharmacies who must possess a pharmacist diploma and who cannot own more than one pharmacy (regulation in place since 1803). These pharmacists (54% are women in 2010) can be distinguished from other storekeepers because the legal distribution of the drugs’ margin gives them incomes on average 6.4

<sup>5</sup> The case of hospital pharmacies is not presented here.

times superior to the other storekeepers, and a little bit more than medical doctors (Source: INSEE, 2005). These professionals are assisted by 26,000 salaried graduate pharmacists, mainly women (80%)<sup>6</sup>. Less visibly, a third category employed in these pharmacies are the specific sales workers, the “pharmacy technicians”, with higher qualification than the sales workforce of the other retail trades. They are then classified in the socio-occupational category “mid-level occupation” rather than “sales workers”.

The presented data well characterize the sector of pharmaceutical industries and services as a highly qualified sector. However, next to the skilled employees, the “low-skilled” employees are integral parts of this sector (Lloyd, Newell 2001). They represent 36% of the production workforce (clerical and manual workers), and 17% of the employees of pharmacies. Although the overall level of education is high, 40% of the production employees and 35% of the employees of pharmacies have no “baccalauréat” (and in the production segment, 13% have no diploma or only the primary school diploma). The facts show we are far from the image of a sector composed only of “knowledge workers”. In production, rather classically, women occupy mainly the jobs of non-skilled workers (80% have not gained high school diploma), and in particular, the few technical jobs of packaging and manual control. We studied the situation of “visual controllers” in several plants: these low qualified women, sometimes from ethnic minorities, perform monotonous and repetitive tasks of checking tens of thousands of products. To these permanent workers, we must also add people who are not taken into account in the census data, the temporary workforce, more and more regularly used by the industry, in particular because to become specialized on this sector they have been trained in the procedures of Quality Control. Dilip Subramanian (2014) made the observation in a medium-sized subsidiary plant that their skills in quality control are one of reasons that explain why they are sometimes preferred to graduate workers who are specialists in techniques of drug production. The uncertainty about some new markets has also been presented as a justification for the growing use of a flexible workforce. In consequence, starting about fifteen years ago, the vast majority of employees in production and administration have been recruited in the first instance under short-term contracts, with the hope by recruits that they will obtain a permanent contract later. However only a few will, as has been observed by Pierre Fournier in a factory of production of active principles. In addition, all of the factories we studied were threatened with closure or were subject to redundancy plans for a variety of reasons (loss of monopoly or drug delisting, competition between plants in international groups, contracting of manufacturing sites). In the pharmacies, highly feminized organizations, we observe the co-presence of employees who perform in part the same tasks, but who earn very varied incomes, and also we can note the employment of low skilled saleswomen for parapharmaceutical products (Fournier, Lomba 2007). Besides flexible employment, the pharmacists also use part-time workers (42% of the employees, and out of whom one salaried pharmacist in two) and apprenticeship programmes (11% of the employees). The salaries are even lower than those found in the retail trade, particularly because of the non-recognition of the levels of statutory diplomas for the distribution of drugs (in particular for “pharmacy technicians”).

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<sup>6</sup> In most European countries, including Belgium, pharmacy chains are licensed (sometimes controlled by non-pharmacist investors). But even in these chains, pharmacies have to recruit pharmacy graduates.

Overall, the pharmaceutical sector presents itself as one where skilled workers are dominant, but we can distinguish two contrasted situations. On the one hand, in the production segment, the regulations, the competitive strategies, the organizational choices and the way that profits are distributed have generated the setting-up of a group of permanent workers, who are more graduate, more feminized and better paid than in the remainder of the industry. To these we can add the permanent group of packers and visual controllers, and for the last twenties years, the new profiles of workers that have appeared who are also graduate but who have been recruited under short-term contracts with the hope they will eventually become permanent. On the other hand, in the pharmacy segment, although the employees are more highly qualified than those in the rest of the retail trade, the distribution of the profits generally benefits the employer-pharmacists to the detriment of the other employees, who are very feminized, often employed under precarious or part-time contracts, and who sometimes are remunerated without recognition of their qualifications even if they carry out qualified tasks (advice on the use of medicines). To explore the situation of the workers more precisely, we need to leave the macro level for the meso level, into the wholesaling segment.

*The wholesalers: a segment divided between professionals and bad jobs*

Every sector experiences conflict of power in the relationship between various actors, often regulated by the State, in order to stabilize the commercial relations (Fligstein 2001; Bourdieu 2005). We will not recount in this text the history of this sector which has been dominated by the production companies and the pharmacists, but we will focus on the subordinate segment of the sector, the wholesaling, to investigate the situation of a part of the “small hands” of the sector. In Europe, the distribution of drugs to retailers is mainly brought about by “short-liners” or by “full-liner” wholesalers. The short-liners are simple subcontractors of the pharmaceutical production industry, and they deliver only a few drug types. The full-liners are specific as they have been subjected to Public Service Obligations to quickly deliver almost all drugs held by every pharmacy on the national territory<sup>7</sup>. In France, due to these legal obligations, these full-liners deliver three or four times a day about 70% of the orders given by the pharmacies which stock few units of drugs (Source: CSRP). This segment is therefore crucial for public health and for the development of the sector. However, the segment is dominated by its suppliers (the production segment) and by its customers (pharmacies). These two actors are distinctly more important in size and have been represented for a long period by powerful and influential employers’ organizations. So, in France, the State allocated a minor percentage of the margins of the drugs to this segment (less than 5% of the selling price of the drugs-and between 3% and 7% in other European countries)<sup>8</sup>, and their position of dominance forced

7 The Public Service Obligations are different across the European countries. In France, full-liners have to retain in stock 90% of the drugs sold in the country and to be able to deliver them in a maximum of 24 hours.

8 In France, the State determines the price of drugs, rates of refund by public healthcare and the

full-liner companies to integrate (three companies represent 94% of the market) while greatly increasing the number of small and medium-sized warehouses (from 50 to 150 workers) around the country.

If wholesalers occupy a subordinate position in the sector, they nevertheless insure high incomes to a minority of their employees, their highly skilled workforce and specifically the pharmacists, whereas a mass of low qualified workers experience less favourable employment terms and conditions. These manual and clerical workers are at the same time occupying a subordinate position of the segment within the sector, and the dominated class position within their companies. Wholesaling is a job opportunity for pharmacists who do not inherit a pharmacy or who cannot receive family financial support to purchase a pharmacy. Indeed, because full-liners are “pharmaceutical establishments”, a graduate pharmacist is needed to participate in the top management and these firms are obliged to have within every warehouse a responsible pharmacist to monitor the application of “Good Distribution Practices for pharmaceutical products” (Code of Public Health, L5124-2). They represent about 40% of the managerial staff<sup>9</sup>. If other countries also are obliged by law to employ pharmacists in this way, France is unusual in the high rate of pharmacists’ jobs to be found in this segment (Le Guisquet, Lorenzi 2004: 42). According to the interviews we conducted with several wholesaler pharmacists, they rarely carry out quality control, but they are mainly recruited into the commercial departments to deal with the pharmacies (negotiating discounts, proposing additional products such as trainings or specialized software). We could define them as “up-market representatives”. Their salary level is higher than that of representatives of other wholesalers (more than four times the minimum wage) and their career progress can be rapid, reaching executive positions if they accept geographical mobility. Indeed, as every wholesaler possesses several warehouses in the country (30-40), of different sizes (of some dozen to a hundred workers), it can offer internal career opportunities and access to top management. So, in summary, this subordinate segment offers the possibility of a successful managerial career to graduates of pharmacy, who are usually male, from a lower social origin than the other pharmacists. However, as in the production segment, the tasks they perform (management and sales representation) are far from the knowledge they learned during their studies and that justify their compulsory presence in the pharmaceutical sector.

The workforce of the full-liners in France is also characterized by the strong presence of low-skilled warehousemen (about half of the workforce), as in other logistics warehouses (Benvegnú, Haidinger, Sacchetto 2018), and more precisely warehousewomen, unlike other logistics warehouses. The latter undertake the tasks of receipt of goods, and unpacking (although this is more often done by men), of arrangement, or of manual packing for the dispatches to the pharmacists. At the largest automated sites, the warehousewomen fill machines with the most frequently ordered drugs. There are also two other specific categories for pharmaceutical distribution: the switchboard operators (just over 5% of the workforce) and the deliverers (about

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distribution of the gross margin.

<sup>9</sup> Sources: INSEE; CSRP; annual reports 1983-1995 of the commission of the full-liners (archives FUC-CFDI).



a quarter of the workforce). The switchboard operators, almost exclusively women, share almost the same working conditions as employees of call-centers, as they are responsible for receiving orders at the last minute and providing information to the customer pharmacists (on particular products, on missing products, on the possibilities of deliveries...). Their number has decreased since the progressive implementation of computing orders by the pharmacists at the beginning of 1980s. Until then, they called the pharmacists several times a day to take their orders (Monney 1968). Although this post previously required a good knowledge of the name of products to understand pharmacists' oral orders, now a short training is required, from four to five weeks, on the software, the procedures and the drugs. The deliverers, generally men, have work that is characterised by the delivery to pharmacies of very small orders, packed in small boxes, three or four times a day, via small vans. This last employment category is increasing since the installation that has occurred of warehouses outside cities in the 1970s and 1980s. These three groups of subordinate workers are low-skilled, with a low diploma or without any diploma at all (85% have maximum lower secondary school certificate), and they can be quickly trained on the job.

Overall, with low wages and poor working conditions, these occupations can be labelled as "bad jobs". Although their salaries increased a little after 1980s, thanks to collective bargaining which was sometimes accompanied with short social movements (1971, 1979), these young workers can begin with a salary slightly above the minimum salary<sup>10</sup>, the average net wage being around 1,350 euros per month. These salaries have for a long time been lower than those of pharmaceutical production workers<sup>11</sup>, and the possibilities of wage progressions are minimal. Concerning working conditions, the construction of modernised warehouses has improved the sanitary conditions, as some warehouses had been very degraded<sup>12</sup>. If the dullness and the repetition of tasks is frequently a point of criticism<sup>13</sup>, the issue of the schedules has been the object of the most embattled negotiations in the sector. Until 1968, the workers put in 46 to 60 hours a week, sometimes indeed beyond the legal time<sup>14</sup>. After 1968, collective bargaining partially changed the situation by decreasing the working time (40 hours) and by introducing two consecutive days off per week (on Saturday and Sunday). It is from this point that employers introduced highly varied schedules so that the orders could be responded to as quickly as possible. Managers decided to deliver using three rounds a day, a round very early in the morning with the orders from the previous evening, a round at about noon with the morning orders, and one at about 6:00 p.m. with the afternoon orders. At this point, breaks of several hours were initiated when the warehouses were closed (between noon and 4:00 pm), especially in the smaller warehouses, greatly lengthening the working day. In the major warehouses, two working teams were put

10 Interview with a central representative of FO trade-union at Alliance Healthcare, 5/2009.

11 For example, «La Pharmacie Laborieuse», No. 181, 1968; circular FUC CFDT 3/1974 (archives FUC-CFDT (1F116)).

12 Circulars to the persons in charge of the pharmaceutical distribution, on October 6th, 1976 (archive FUC-CFDT (1F271)); *La Dépêche du Midi*, 26/8/1993.

13 Jacques Petit, *Données pour une politique de la répartition*, 1982, 26 p. (archives FUC-CFDT (14F24)).

14 «CFTC Phar'Labor», January 1961 (archives FUC-CFDT (1F242)); «Chimie militants», April 1973

into place, a morning one (which began at 6:00 a.m.) and an afternoon one (ending at 10:00 p.m.). Moreover, atypical schedules spread into Saturdays (despite their legal interdiction) or night hours, in the Paris region. As a result, a labour inspector noted in 1988 that numerous «malpractices exist in many establishments of pharmaceutical distribution» concerning the organization of working time and overtime<sup>15</sup>.

Another main change that has occurred since the 1980s is the massive development of constrained part-time work as in pharmacies. The employment level has remained stable in wholesaling because part-time employment has, to a large extent, replaced full-time employment. Since the beginning of 1980s, the flexibility in employment and the precarization become more marked and more than one worker in four is part time today (almost exclusively women). This change has been the consequence of several mechanisms: by handing over the Saturday deliveries or the evening handlings to students, the permanent workers are socially benefited<sup>16</sup>, advantage is taken of the fact that part-time employees have less rights than full-time employees, and sometimes the organization of work has been modified by introducing a new team. Part-time is no longer a supplement for evening work or for Saturday work; part-time workers have progressively replaced full-time workers who have been dismissed after the consolidations and automation of warehouses<sup>17</sup>. These short part-time jobs (mostly half-time or less) are almost systematic for new entrants and allow the workforce to be coordinated with the schedules of pharmacists' orders. Full-time is reserved only for the employees who tidy up the warehouse during the slack periods. We can thus better understand why manual workers are largely feminine. In this segment we find the rather classic mobilization of a feminine workforce with low status, fixed-term contracts, atypical working hours, and low incomes, especially for part-timers (Jenson et alii 2000).

To summarize, there is a huge gap between the low status workers and the pharmacists within the same segment, the wholesalers. These two populations experience the subordinate position of this segment differently, in a sector characteristic of the “knowledge based-economy”. If the pharmacists take advantage of this situation, by high salaries and incomes, and by the opportunity of enjoying an upward mobility, the others have to content themselves with salaries close to the minimum wage, or even less for part-time, and with virtually no career prospects. This case study illustrates how members of upper social classes, organized in professions and which justify their position by their diplomas, succeed in granting themselves advantages, and maintain their position in the face of a fragmented workforce, spread amongst warehouses and holding different occupations. As in the other two segments of the sector (production and pharmacies), but to different degrees, on the one hand, there is a polarization of jobs, and on the other hand the justification for the hierarchy of positions is based on academic knowledge which is not always (and sometimes rarely) mobilized in practice.

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(archives FUC-CFDT (1F270)).

15 Negotiations on the reduction of working time in the pharmaceutical distribution (1988-1992) (archive FUC-CFDT (4F20)).

16 Interview with a Human Resources Director, CERP, 2/2009.

17 Between 1990 and 1994, when the proportion of part-time jobs increased, the wholesalers brought about 2,800 lay-offs (Source: CSRP, Commission 1995).

*Careers and working conditions of “small hands” of the pharmaceutical industry*

In this last part, we will focus at a micro-level (within the warehouse) on the employers' strategies which explain the development of atypical forms of employment, and on the subjective experience of these manual workers. We will show how the organization of the sector and public regulations dictate the daily work of these manual workers forced to deliver *Just-In-Time*. We shall draw on an ethnographic survey Cédric Lomba made in a small Belgian wholesaler (around 40 workers), called “Pharmaco” in this text, in the suburbs of a big city. The method includes participant observation during a month as warehouseman, analysis of archives since 1962 of the Board of Directors, interviews with pharmacists-Directors and blue-collar workers, and a survey to the warehousewomen. This firm is a pharmacists' cooperative founded in 1964 by some pharmacy owners (the administrators and the successive directors are pharmacists). In the 2000's, the cooperative brings together more than 300 pharmacists who are both cooperators and the only clients of Pharmaco. As in other European countries (Germany, France and Spain, for example), pharmacist owners have set up wholesale distribution cooperatives to lower cost prices and sometimes to compete with the pharmacy chains. These cooperatives represent between 10% and 30% of the segment's sales in European countries. We can assume that the status of “cooperative”, which gives the same number of votes to every member at Pharmaco, fits well with the official ideal of confraternity, autonomy, independence and equality of the professionals (Freidson 1988). This specific status allows them to select only peers and to maintain a closed group with a control on entry by co-optation and a control over the management of the company. In Belgium, Pharmaco is a small wholesaler (less than 5% of the segment's turnover), but the size of the warehouse is fairly similar to the size of other warehouses in the country.

*Implementation of precarious work and horizontal careers*

During the 1960s and 1970s, in Pharmaco, the workforce (about ten people) were mainly young women (around 18 years old), single, low skilled (they quitted school after primary or lower secondary school), and without occupational experience (for many, it was their first employer)<sup>18</sup>. However, this employment was very unstable, as on average two thirds of the employees left the enterprise after only two years. In the 2000s, the situation is completely different, particularly because of the contraction of the labour market in this region where the unemployment rate exceeds 20%. These women (about forty people) enter the company at an older age (approximately 28 years old) and after a longer period at school (lower or superior secondary school in vocational qualification as sewing, hairdresser, secretarial...)<sup>19</sup>. They have already experienced periods of unemployment and one or several low qualified jobs (blue-collars, saleswomen, cashiers...). But, in comparison, they prefer this new occupation in spite of low salaries, that could be 1,200-1,300 euros a month for full-timers (half of this for part-timers). They say to appreciate the stability of incomes and

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18 Unlike the French enterprises, Pharmaco always outsources the delivery.

19 Source: the staff registers and personal survey.

of schedules (the wholesaler closes at 4:30 pm every day) as this 36-year-old worker points out:

I worked for 7 years in a shop. I came here for schedules. A friend of mine told me how things were going here. I liked my old job, but since I separated from my husband, I wanted to get home early so I could take care of my daughter.

The turnover rate remains high, but it concerns less than a third of the employees hired between 1990 and 2004. For some years, the recruitment has also been marked by an intense use of fixed-term contracts. Since the recruitment rose in the 1990s, entrance into the company comes about almost systematically through fixed-term contracts, and temporary agency work since 2000s. For a small company managed by pharmacists, this strategy has allowed a Human Resource task (recruitment) to be subcontracted, to partially by-pass the recruitments that had been based on personal networks, and to appraise the loyalty and diligence of the workers<sup>20</sup>. The issue of absenteeism is crucial in this sector because delivery to pharmacies is almost “Just-In-Time” like in France. The supply cannot accommodate breaks and so the presence of warehousewomen becomes more important than their formal qualifications.

In terms of careers, the possibilities of promotion are very limited in Pharmaco and more generally in the segment in Belgium and France, as it is often the case for the subordinate workers in small enterprises (Moule 1998). However, the first generation of women workers were able to benefit from an upward progression, quitting manual work in the warehouse and entering clerical jobs for administrative tasks or more rarely becoming supervisors<sup>21</sup>. This is a very important case of upward mobility because the office work has a superior symbolic status, it gives them the specific rights of “white-collar” status in comparison to “blue-collar” status in Belgium and because it allows them to leave the intense work of handling of goods. For the majority of other workers, whatever the tasks they have (goods handling, telephone duty...), they are labelled as “production work”, each task allotted an equal salary.

In such a small-scale organisation, these workers are obliged to build, collectively or individually, opportunities for “horizontal careers” (Becker 1952). Indeed, there is an informal hierarchy in place between the different tasks, marked by an order of apprenticeship which is almost always respected:

At the bottom of this shared scale of prestige is located the handling of goods (arrangement of products and placing drugs in boxes). This job can be learned in a few hours and is occupied by workers with fixed-term contracts and young workers with permanent contracts. At an intermediate level there are jobs that bring together handling and checking (receiving products and controlling the loading into small vans). These jobs require the use of computers and are occupied by long term workers with permanent contracts. At the top of the

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<sup>20</sup> Source: PV of the Board of Directors (1962-2007) and interviews with administrators.

<sup>21</sup> At the time of the investigation, most of female workers with a permanent contract have less than 10 years of seniority and one third of them were under 30 years old, half between 31 and 40 years old and others over 40 years old.

hierarchy are located the few jobs that do not involve handling (receiving orders by telephone and defining the work pace). These jobs require knowledge of products, management of the relationship with the pharmacist customers and knowledge of work organization. The workers with longest tenure occupy them.

Secondly, a horizontal career is based on the degree of control on the appointment in the job. What distinguishes the long-term employees it is that they stay at the same post each day. Thirdly, a horizontal career can also be built by creating one's activity through the aggregation of small tasks previously part of another job. For example, a woman (with six years' experience) is now responsible for the control and follow-up of drugs in featured promotions that are accompanied by display stands; the rhythm of this activity is far less intense than that of handling goods.

This company illustrates how a workforce of low status has been built up, which is poorly paid in comparison to other professional groups in the pharmaceutical world. Whereas salaried pharmacists can experience the building of managerial careers, low-skilled workers are restricted to horizontal local careers in the same location. In this case, this tiny and virtually invisible mobility is reserved for long-term workers and is source of satisfaction to them. In contrast, they are never called on to explain the nature or the uses of the products, yet they deal with something that is considered as a high-tech sector. The interviews that we conducted in France confirm that these conditions of low-status workers identified in Pharmaco are widely shared here.

*A service in Just-In-Time: The intensity of the handling work*

To explore the work relationships in that sector, it is first important to take into account the rhythm of production. In this specific case, competition between wholesalers has resulted in deliveries to pharmacists three or four times a day in Belgium and in France, as in other countries in Europe. Pharmacies are therefore supplied Just-In-Time. But Just-In-Time and repeated deliveries mean also small orders. In fact, the pharmacists order very few different drugs each time (about ten in average), and they order few units of the same product. For a long time, the wholesalers tried to bring about an economy of scale, but an increase in the number of units by orders did not eventuate (Petit 2004: 110). In the case of Pharmaco, the Board of Directors regularly appeals to "the cooperative spirit" of the pharmacies so that their orders can be gathered together but this never happens. It is perhaps the only retail trade where the suppliers deliver several times each day. Although productivity gains were not obtained by the method outlined, they have been achieved in the segment in France and in Belgium by technical transformations (mechanization, computerization and automation) or by organizational changes (changing to two teams to reduce timeouts, or the gathering of rare products on specific sites, or the concentration of products by "bulk rotation" in warehouses). Productivity gains were also obtained by a very comprehensive control of the workforce. In Pharmaco, the surveillance is carried out by a forewoman, a long-time worker promoted from the position of warehousewoman. And computerization of the processes, by scanning of all products, has allowed the introduction of a way of measuring workers' efficiency. The forewoman and the director rarely examine individual efficiencies, but the constant threat is there.

Deliveries adjusted the pharmacists’ working pace has the effect of accommodating periods of very intense work and quiet times. In Pharmaco, the rhythm is organised around 28 daily tours with the deliverers waiting at the end of conveyor. When the official time of delivery departure nears, the forewoman checks that all the boxes are ready to leave. During the rush hours, the preparations are fast and the workers, equipped with a bracelet with a minicomputer on the arm, rather than making repeated trips to the box, can put several products on their other arm while scanning barcodes<sup>22</sup>. In such rushed daily moments, errors between similar products are possible resulting in time-consuming searches to locate products indicated as “present in the stock” in the computer but absent at their official place. Employees have thus to choose between the speed of execution, and the quality, accuracy and punctuality of the delivery. Depending on the time that they have been with the company, these workers respond differently to the situation and two noticeably different attitudes can be distinguished. Women with intermediate seniority seem particularly diligent because they hope to climb through some steps within the small hierarchy of low-status workers, but younger, more recently-engaged workers, together with the longest serving workers, show diminished respect for the demands made of them and work at slower pace. These two attitudes toward commitment to work are embedded in a local history of the recruitment by personal networks, and the newer methods of recruitment. This situation results in significant tension and conflicts between groups of warehousewomen in the “race” for the “less worse” places in the world of low-skilled workers.

More generally, low status employees play a crucial but invisible role in the pharmaceutical sector to ensure access to healthcare. In industrial countries, it seems normal today for the “patient customers” to have access very quickly any drug in a pharmacy among more than 10,000 different possible products. To do so, the solution adopted historically in the sector was to force low-status workers to suffer the disadvantages resulting from the quasi-immediate access to health products by the population. In this case, the presence in the warehouse of highly qualified employees (pharmacists) guarantees in theory the high technicality of the sector and the respect of very precise quality procedures, even if the concrete activity of manual workers deviates from these procedures in order to meet the objectives to be achieved.

### *Conclusions*

We have explored various dimensions of the working conditions of low status workers in a sector often considered as symbol of the knowledge-based economy, the pharmaceutical industry. Overall, working in a high-tech and highly profitable sector, which has been experiencing considerable growth, has opened career opportunities to high-qualified professional and managerial staff, particularly in terms of wage progression, even if some are not protected from lay-offs and relocation of sites. An important group of technical and sales workers in the production industry has also benefited from the advantaged position of the sector, whereas low-skilled workers are confined to low status jobs, with poor evolution prospects coupled with a growing

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<sup>22</sup> Certain products are heavy (syrups for example) or bulky waste (powders, food for animals...).

use of temporary contracts. Although they manipulate high-tech products (drugs), low-skilled workers in other segments of the pharmaceutical sector (full-liners and pharmacies) do not enjoy better working conditions than low-skilled workers in other distribution sectors (wholesalers and retailers). The fact of belonging to a sector generally associated with the “knowledge economy” has no beneficial effect for them. And we could even make the hypothesis that the situation of low skilled workers is even less enviable because they have to comply with the specific regulations of the pharmaceutical sector to guarantee the continuity of health care and safety; constraints that necessarily result in highly flexible schedules and variable work intensity. And they do not benefit from the profits, which we call “regulatory revenue”, that the State assures to firms by supervising the market and the practices of production and distribution. Even when States try to limit the profits of firms, firms manage to limit their losses by changing the conditions of employment and work of the employees. For example, when the French and Belgian States set up in the 1990s a development policy for generic drugs, this was reflected, on the one hand, by an increase of the hoops in the production companies and the use of temporary workers to increase the working time, and on the another hand, by monotonous days of arrangement and by a decrease in space for movements due to congestion of shelves for the manual workers in wholesaling.

More generally, we show that it is useful, necessary and important to study the career patterns and the working conditions of the least acknowledged and the least visible workers in the organization of “drug trajectories” (Gaudillière 2005). And that sociologists should undertake further research on low-skilled workers working in other high-tech sectors (the call-centre operators of Internet companies, the workers who bury the cables of new technology companies...), as Gideon Kunda (2006) made it on the “marginal workers” of a high-tech company. Those “little hands” that are also key workers, even if they are interchangeable and are not taken into account when the “knowledge economy” is evaluated.

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