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2

Women and  
the Labour Market





## 1. The ICT professions and related labour market incongruence

### 1.1 The European framework

The classification of the working world and its contradictions that exist between the new generations of males and females are: (a) qualified work, (b) qualified work with little retribution, (c) qualified work with retribution.

The European situation is contradictory and in many aspects paradoxical. The principal tendency which can be seen in all European countries is an increase in the number of girls and boys entering the work marketplace, higher levels of qualifications and professional training, moreover women usually have higher levels of instruction. Given that this tendency has been stable for the last twenty years there are the reasons for the expectation that two situations will arise, (a) an increase in qualified jobs, (b) a higher presence of women in qualified jobs, and a lower presence in unqualified jobs. The statistics confirm however that this is not the case. In Europe: (a) the unqualified jobs have increased, (b) women do a higher percentage of unqualified jobs and a lower percentage of qualified jobs, (c) in the qualified jobs, women perform the lower paid ones.

The expected perception that there are many qualified and remunerated jobs depends on real changes that have happened. There are many new professions and traditional professions that have been renewed by technology which allow (as will be shown in part two) interesting work activities accompanied by good remuneration. It would however be wrong to think that the stronger tendency today is that of the increase of these jobs. In fact, there is an increase in unqualified jobs (including repetitive jobs, with very low professional levels, that do not allow for an increase in professionalism) and, within those qualified, an increase in the qualified and low paid jobs that require professionalism and commitment but are lowly paid (for example a university researcher, the

majority of whom teach in primary and secondary schools, and undertake care work).

Also, adding ulterior complexity to this scenario, precariousness can be found in all three types of jobs. This means that precariousness is present in the same way for low qualified jobs as well as qualified and low remunerated ones (someone starting work as a university researcher is low paid and precarious) and precariousness is also found in the area of qualified and remunerated jobs as the level of work undertaken (as an employee or as a self-employed worker) can have margins of precariousness and uncertainty. Often those who undertake these jobs are at risk, and they do not have any guarantees that their job will last for long. All Europe has an increase in jobs which have contracts which can be defined as atypical (this term is used to define all contracts that are not permanent: from short-term ones or project based ones, to part-time ones). There are principally four areas of atypical jobs: (a) *Subordinate jobs*: interim jobs, temporary appointments, part-time jobs, intermittent jobs, job-sharing, apprenticeships, and formation contracts; (b) *Self-employed jobs*: occasional collaboration, coordinated and continuative collaboration, project work; (c) *Jobs in associations*: family businesses, agricultural contracts, cooperatives, participatory associations; (d) *Jobs that do not have real work contracts*: volunteer work, vocational training, etc.

Three principal types of work can be examined from the point of view of differences between women and men using the present situation in Europe and Italy.

### 1.2 Unqualified jobs

One of the first researches that underlines the increase of blocked professionalism in Europe can be found in the enquiry on the conditions of work done by DARES and shown in the book

by Alain Lababe that shows that in France the percentage of professionally blocked salaried jobs in the total number salaried jobs has risen from 29.4% to 41.4% from 1984 to 1991. A study by Dominique Méda and Vennat using more recent data allows us to have more complete and up-to-date data. In 2002, in France, information from INSEE shows that more than 5.3 million people have an unqualified job equal to 22% of the actively occupied population and that *the growth of unqualified jobs in the period 1994 - 2002 increased with an annual rate of 1.7%, whereas the qualified jobs in the same period increased with an average annual rate of 0.9%*

These professionally blocked jobs are present both in agriculture and industry, but their increase has been more elevated in the tertiary activities. The hit parade of these jobs is a clear example. In 2002, in France, there were 670,000 nursery school assistants (this number has tripled in the last twenty years), 600,000 foodstuff salespeople, 360,000 housekeepers, 680,000 public service workers such as ecological operators. Examples of these types of jobs are easy to make: from hamburger salespeople (or a series of other products that do not require any particular training) to data uploading on computers; from general cleaning jobs to labouring; from call centre operators (where the answers given on the telephone to the clients are standard and repetitive) to jobs where the repetitiveness is working a machine or factory work.

All these jobs are *professionally blocked* because nothing new is ever learnt; in fact after sometime the repetitiveness of the work becomes more tiring and boring and therefore the workers' performance worsens instead of getting better. These jobs, not only in France and not only in the period that was considered, are *increasing* in all European countries because the places that sell products that do not need specific skills to sell them are increasing, data transferring and other computer information jobs are also increasing,

jobs in call centres that do not foresee career evolution are increasing, etc.

If we consider these jobs from the point of view of the difference between women and men, the presence of women is higher in the unqualified jobs relative to the tertiary activities: in the sector of salespeople and cleaning, in the area of data workers and telephonists at call centres, etc... The male presence is moreover consistent in industrial unqualified jobs and in agriculture, where physical strength is often a requisite (for example in construction, furniture transport, etc) also, in many cases, the jobs also have health risks (working in foundries, butchering meat, etc).

A point to keep in mind, as underlined by Méda and Vennat, *in 2002 women in France represented 61% of those in salaried unqualified jobs whilst only 41% did qualified jobs*. This fact that was documented in France is true in all European countries. Women as a whole are the part of society that is more exposed to unqualified jobs in all European nations and precariousness is one of the principal characteristics of the jobs found.

The research done by Philippe Guilbert and Alain Merigier in France that came out in 2006, on the mechanisms of mobility descending through the popular social classes, is very interesting. From this research it clearly emerges that both the transformation of workers (from predominantly industrial and agricultural jobs to tertiary jobs; service workers are now 50% of all workers) and the transformation of clerical work (from the typist to the salesperson and to the assistant in caring jobs; these two figures today represent 40% of all employed jobs). What emerges is a proletariat of services with a high percentage of people that work with a low salary and with few guarantees: *a poor proletariat with high levels of precariousness* therefore, as is done in this book, stories of "descendent mobility" can be collected in which women and men are taken in by the "vicious spiral of precariousness".

### 1.3 Qualified jobs and low pay

A second type of job which is becoming more diffused is represented by the category of qualified jobs with low pay. These jobs allow a professional growth whilst they are done without however obtaining an adequate raise in retribution. Jobs of this type are found most often in the social area (such as care workers and personal assistants to the disabled or elderly) and in the area of culture (teachers in kindergartens, elementary and junior schools) they are jobs that require a high level of competence and continuous updating but do not have an adequate retribution.

The activities done are all qualified by training, professional training, cultural animation, support, orientation, caring, rehabilitation, prevention, in comparison to all the most diverse categories of people (from disabled boys and girls to elderly women and men, from children in their first years of life to youngsters with difficulties, from immigrant men and women to young women and men who need help with their entrepreneurial projects and so on) and from these examples it clearly emerges that *there is a major presence of women in these jobs*.

Therefore not only the women are a minor percentage in the area of qualified jobs but of those who undertake them a high percentage is moreover present where those who do less paid jobs and that often are characterised by precariousness. This female presence in this type of job brings about a particular question. What must a girl do who feels that she is drawn towards these jobs? Should she renounce because the retribution offered to those who undertake these jobs is inferior to those of other jobs that have undergone this process of economic exploitation? The advice that can be given is certainly not that they should avoid these jobs. They are jobs that have fundamental roles in society and that give those who do them a sense of social and relational gratification even if the retribution is not proportionate to the diligence used. Two

pieces of advice can be given. The first is that a young woman who decides to start on this type of study-work journey must understand her choice and see it as a significant choice for life and work, and have the knowledge that a lower retribution is a component that has to be taken into consideration along with other important components such as coming into contact with a varied and interesting group of colleagues who share the same values and ethical objectives. The second is that these social and cultural jobs can be reinforced even on the plane of retribution if the young woman entwines her humanistic training (training what is generally based on orientation towards these jobs) with a technical-scientific training that can favour, in these jobs, a higher retribution. A young woman who wants to enter into the training profession can reinforce herself with multimedia skills, a young woman who wants to enter into the social profession can reinforce herself with skills tied to technologies regarding the quality of life, etc.

### 1.4 Qualified jobs and retribution

Here we arrive at the third type of jobs, those qualified and remunerated, that are within a minority area and that is growing less than unqualified jobs even though it is also precarious, like the other two types of jobs. In this area women are a lower percentage with respect to the men, even if there are interesting signs of countertendency.

The wave of ICT has in part, and with an uneven modality, modifies the situation in favour of women and it is documented in some research by Eurostat. Altogether the employment in European industry in 2001 is made up of 28% of women and 72% by men, but when we consider the people occupied in industry with tasks that use high technology the percentage of women rises to 33%. Likewise in 2001 in Europe, the occupation of services is made up of 52% of women and 48% of men but when we consider the services as intensity of

knowledge the percentage of women rises to 62%. The wave of ICT has helped the presence of women in the occupation system both industrial and more high tech even if this does not signify that the women are more present in more qualified and better remunerated jobs or in directive roles.

In fact when case studies are done and analysed, as done by Silvana Greco the organisational models and careers of women in production of software on two concrete levels (one present in the North and one in the South of Italy), we can observe that although the sector of informatics has had a rapid feminisation mostly in the sector of software and in the analysis of the case studies results show that women concentrate mostly in

determining professions of ICT. The women are mostly present in professions of programme analysis, development of software, and experts in controlling informatics solutions but are almost absent in professions that require more complex projecting capacities, such as system analysis. A significant fact: in a business examining in the North 72% of men are project managers whilst only 28% are women and in the business examined in the South there are no women project managers.

It must be also kept in mind that this area of qualified and better remunerated jobs there are also jobs that can be defined as precarious by their type of contract and their working conditions.

## **2 Technological innovation and the relations between women and men**

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If we consider the period from the end of the second world war to today at least three large ways of technological innovation can be identified, the passage from mechanics to electronics, the emergence of information and communication technology (ICT) and the most recent wave of technology tied to the biotechnologies that have brought about the naming of the new century as the biotech century. To clarify the different waves of technology on the relationships between women and men, new technologies and the job market the wave of the 1970s with its passage from mechanics to electronics can be confronted with the wave that was consolidated in the 1990s of the communication and information technologies.

To understand the relationship between innovative technologies and study/work routes of males and females we must start from the three principal difference between these two technological waves:

(a) *The transversal possibilities of uses of ICT with the consequent transverse transmission of knowledge of different*

*study routes:* The ICT can be used in an ample gamma of professions and places of work (from e-governing and e-learning to audiovisual and multimedia products; from applications to research on ancient texts and archaeological findings to the possibility of use in bio-prosthesis and in assistive technology, from the possibility of realising street televisions to the control of environmental data). This crossing of applications/professions which is due to the technological wave of ICT is very different from the previous mechanic/electronic wave which had the object mainly of industrial automation. Moreover this crossing has been translated also in the crossing over of study routes in which the transmission of ICT knowledge has also entered into study routes more often by girls and orientated in tertiary activities whilst in the previous mechanic/electronic wave the knowledge was exclusively transmitted in the study routes of technical institutes and industrial professions almost completed frequented by boys. In the 1970s in the face of the mechanic/electronic technological wave

and of the phase of industrial expansion the routes of the girls that, as today, preferred the technical institutes or professionally oriented high school to tertiary activities or the area of social/humanistic were considered "weak", there was talk that there was a profound fracture between women and technology and the Commission of equal opportunities of the European Community launched programmes to orientate girls differently and push them to enter the "strong" study routes of the boys that were enrolling in technical institutes and professional industries. Today this type of affirmation can not be made the process of expansion of the tertiary industry has become larger and technological innovation is no longer confined tightly to industrial routes.

- (b) *The greater possibilities of access to hard equipment.* The possibilities of access, in terms of cost, to ICT have resulted clearly lower with respect to the previous wave. The hard equipment such as computers are always reducing in price with respect to the performance given and the difficulty of using programmes even sophisticated ones depends less on the difficulty of purchasing a computer or the software and depends more on becoming experts in programming and using these software. In the technological wave of ICT the economic capital counts less than the cultural capital (that is the knowledge of ICT) and even men and women resident in less industrial nations can use them (for example businesswomen in Bangladesh using mobile phones financed by Yunus with the Grameen Bank, or the project presented by Negropunte and Kofi Annan of a computer for 100 dollars that works without electricity).
- (c) *The different cognitive paradigm.* If we consider the most advanced part of ICT, that is the programmes of artificial intelligence

(in more technical terms, the programmes based on models of artificial neural networks and fuzzy logic), we can observe that the cognitive paradigm is of a connecting type and not a deductive logic type. There is a profound change in the organisation of the data of problems and in the arrival at their different solutions. Recent studies on the styles of research that evidence both the different styles of research by women with respect to that of men and both the fact that some structural characteristics of the female personality render the women more orientated than men to understand models in which the paradigm is connecting.

The technological wave of ICT tends therefore to value and facilitate the routes of study work of women more than the previous mechanical/electronic wave that was more orientated towards a male path. This potentialities open to women can be obstacles in two directions: (i) by traditional study routes that still tend to transmit more technical scientific competencies in the routes predominantly male with respect to those predominantly female thereby distinguishing a "harder" male zone from less high tech females; (ii) by traditional training routes that still tend to privilege men in working careers rather than women, leaving for women the so called "glass ceiling" obstacle, an invisible ceiling but for this reason not less present that prevents the "breakthrough" and the access to positions of greater prestige and power. The term "glass ceiling" comes from the feminists in the United States who used it to indicate the invisible block on female careers but as it has been rightly observed, in Italy it should be called a "crystal ceiling" as glass is an easier material to smash whilst crystal indicates with more precision the actual difficulties of Italian women to arrive at managerial careers.

### 3. *The debate between two cultures*

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In the 1960s an English intellectual Percy C. Snow wrote a report entitled *The two cultures* denouncing in the university and in scientific research the dramatic separation between the humanistic culture and the technical scientific culture that had deep roots in the senior schools. Today a technological wave such as the ICT one *could* create the premises for an overtaking of this fracture which had and definitely has negative consequences on the overall direction of science and technology as it can assist the adhesion of the neo-liberalist model. But is this really the case? And can we today face the theme of two cultures.

To face this subject two recent contributions on the theme of the "two cultures": that of Piergiorgio Odifreddi and that of Luca and Francesca Cavalli Sforza, are considered.

Odifreddi, a professor of mathematics at Turin University and author of numerous text mathematical logic and on the connections between mathematics and human sciences, faces the theme writing that "the debate on two cultures stripped by the verbal and character intemperance, is reduced to the observation that there are public and private experiences, universal and particular, objective and subjective, and that one can not speak in a unitary or multiple, explanatory or descriptive, expressive or impressionist manner, of quantities or qualities, rationally or emotionally, simplifying or enriching, with precision or ambiguity, through ideas or words, concepts or sensations. If the division between science and humanistic does not cause reflection on a fundamental dichotomy both ontological and epistemological, is their confrontation necessary? Or on the other hand, can we imagine that we will overcome it in favour of a complementarity that allows science to acknowledge the application of humanism and humanism to conform to the developments of science"

Odifreddi in favour of the possibility of integration between the two cultures reminds authors of the scientific training who have realised literary works (from Carlo Emilio Gaddo to Primo Levi) to authors who have realised literary works with openly mathematical structures (from Raymond Queneau to Geroges Perec) and he concludes that "it therefore seems that mathematics is the hinge connecting between the two cultures, the callous body that connects two hemispheres, the poetic language of nature, the neutral mediator that allows the reconciliation of apparently discordant cultures

Luca and Francesco Cavalli Sforza face the same theme underlining that the separation of humanistic and scientific cultures has complex origins from processes to Bruno and Galileo ("the ecclesiastic condemnation of what was discover autonomously from human reason, the threat of excommunication and the stake play an essential role in the digging of deep furrows between humanistic knowledge and scientific knowledge") from the intellectual domination in Italy of the idealistic philosophy of Croce and Gentile arriving at the post-modern philosophy that does not love science.

The conclusions of Luca and Francesco Cavalli Sforza converge in the affirmation that "as much as it is variegated, dispersed, and fragmented, the human knowledge is all together a whole. The scarce communication between letters and science creates great harm to both". To overcome this separation the proposal is that of splitting from school keeping in mind that "some teachings are essential for the formation of each person: language, mathematics, history, geography, the rules that regulated civil living, and some biology and medicine to allow the distinction between health and illness, to promote the former and prevent the latter".

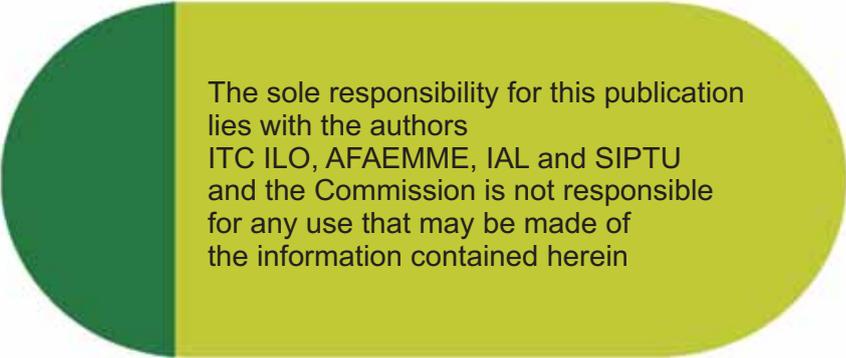
The separation of the two cultures and the concrete strategies effected in the different formation systems to overcome them deeply cut into the routes of study for females and males as:

(a) A separation between the two cultures that deeply penetrates in different scholastic routes signifies that there are more humanistic routes (often followed with more frequency by girls) that move away from technical scientific learning as there are

more routes that are technical scientific (often followed with more frequency by boys) that move away from the learning of humanistics.

(b) A moving closer together of the two cultures favours the presence of study-work routes in the direction of technological innovation in favour of the quality of life and therefore more possibilities open to the development models of united economy.





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ITC-ILO International Training Centre  
of the International Labour Organisation  
viale Maestri del Lavoro 10 – Turin (Italy)

AFAEMME Association of Organisations of  
Mediterranean Businesswomen  
C/ Muntaner 340 1ª – Barcelona (Spain)

SIPTU Services, Industrial and Technical Union  
Liberty Hall – Dublin 1 (Ireland)

Istituto Addestramento dei Lavoratori IAL Veneto  
via Pasini 36 – Margher (Italy)