Portugal in the European Context, vol. II

Knowledge and Society

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vol. I: *Institutions and Politics*
(edited by José Manuel Leite Viegas, Helena Carreiras, and Andrés Malamud).

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Table of contents

List of figures and tables

Figures

Tables

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Foreword

This volume is part of a trilogy organised by the Centre for Research and Studies in Sociology (CIES), at ISCTE - Lisbon University Institute. It presents a broad range of recent analyses of contemporary society, placing *Portugal in the European Context*.

The trilogy is made up of three volumes:

vol. I *Institutions and Politics*
(edited by José Manuel Leite Viegas, Helena Carreiras, and Andrés Malamud);
vol. II *Knowledge and Society*
(edited by António Firmino da Costa, Fernando Luís Machado, and Patrícia Ávila);
vol. III *Welfare and Everyday Life*
(edited by Maria da Dores Guerreiro, Anália Torres, and Luís Capucha).

The aim of the publication is to share with the public the findings of national and international studies carried out by CIES researchers in recent years. Bringing the studies together within this trilogy required a re-examination of data and analyses, the end result of which has been to promote a better understanding of present day society.

These advances in understanding contemporary social life are structured around three thematic perspectives. Each volume underlines one of such perspectives.

Introduction

António Firmino da Costa, Fernando Luís Machado, and Patrícia Ávila

What are the relationships between knowledge and society today? The place of knowledge in contemporary society has increasingly become a subject of personal reflection and social debate, the target of groups' and organisations' strategies and the focus of public policies. Social sciences have also studied it and some of them have been devoting more and more attention to it.

Sociology in particular was a forerunner in identifying and studying the emergence of new configurations of society where knowledge has become central. Knowledge has always been part of human societies, but today it seems to have taken a particularly decisive place in the organisation of society and in social dynamics. In particular, highly formalised and codified knowledge, with a high coefficient of elaboration and reflexivity, has become a fundamental structural dimension for institutions, culture, everyday life and social change. Sociological research currently focuses on the different forms of formally codified knowledge, the social domains in which it occurs, the social conditions of its production, dissemination and use, the social actors and mechanisms involved, its social impacts and the social dynamics connected to it.

A significant part of the research done at CIES focuses precisely on this problem of the relationships between knowledge and society in contemporary society, analysing it from several perspectives and in relation to different themes. The following chapters present the results of recent research and analyses from sociological research on social and educational structures, literacy patterns, use of new information and communication technologies (especially the internet), the scientific culture of populations, university students, highly qualified professionals, economic and labour trends, new services and the social orientations of different segments of the population. All together, they seek to situate Portuguese society in the European context and in today's globalised world.

In chapter 1, "Social classes and educational assets: a transnational analysis", António Firmino da Costa, Fernando Luís Machado and João Ferreira

de Almeida show, on the basis of data from the *European Social Survey*, how today's social class structures form different transnational aggregates at European level and how, in this broader context, the social agents' educational assets can show inequality related not only to the different class locations that they occupy but also to the different transnational aggregates to which they belong. The consequences are far-reaching both in terms of personal opportunities and societal development levels.

In chapter 2, "Literacy and social inequalities in the knowledge society", Patrícia Ávila analyses the social importance of reading and writing in contemporary society. Using data from the *International Adult Literacy Survey* (IALS), she presents different types of results that not only situate Portuguese society in relation to other national contexts with regard to the distribution of literacy but also clarify its importance as a resource that, in knowledge societies, conditions subjects' practices and access to certain positions in the social structure. Her analysis also reveals strong dependence of literacy skills on the subjects' life contexts and everyday practices.

In chapter 3, "Communication practices in the network society", Gustavo Cardoso, Maria do Carmo Gomes and Cristina Palma Conceição study Portuguese communication practices in the transition to the network society. They first conduct a generic characterisation of the factors and processes that justify this particular description of contemporary societies and its expression in Portuguese society. They then analyse the social profile of internet users and the effects of its use on interpersonal communication and sociability, everyday practices and the relationship with traditional media. They conclude that in Portugal, as in most developed countries, the internet articulates with previous forms and means of communication rather than replacing them.

In chapter 4, "Scientific culture and modes of relating to science", António Firmino da Costa, Cristina Palma Conceição and Patrícia Ávila address Portuguese society and, in a broader approach, the European Union as a whole, to examine current relationships between the general population and science, a fundamental domain of knowledge in contemporary societies. In addition to an overview of different paradigms of studies on scientific literacy, public understanding of science and scientific culture, they describe the different forms of relating to science that can be found in society today and analyse the involvement of different social actors in the dissemination of scientific culture.

In chapter 5, "Higher education students: contexts and social origins", Rosário Mauritti and Susana da Cruz Martins inventory the considerable research into the subject that has been carried out in Portugal for a long time. They identify trends in access to higher education, with particular focus on the patterns of class recruitment, and make a Europe-wide comparison. The data show that, in spite of the expansion of higher education in the last 20

years, where students and graduates are concerned, Portugal has only made limited progress in catching up with European standards. On the other hand, they show that the female presence in higher education is a trait common to the EU.

In chapter 6, "Qualified professionals and the knowledge society", Maria de Lurdes Rodrigues, Luísa Oliveira and Helena Carvalho also concentrate on Portuguese people with higher education degrees, though they now look at the working population. Against the backdrop of the knowledge society as an emerging model of economic and social development, they draw a map of sectoral insertion of highly qualified professionals, fairly considered one of the pillars of this model of development. They show that professionals with higher education degrees are distributed in all sectors, though very irregularly, with a large majority in the public sector and a small monitory in industry and services.

In chapter 7, "Transformations and resistances: technology, economy and society", João Freire draws a general picture of the evolution of the Portuguese economy and society since joining the European Union, focusing particularly on the modernisation of companies and organisations, the role of information and communication technologies and the car industry in terms of employment, labour, leisure and social relations and the population's economic and labour perceptions. He stresses the amplitude and intensity of the changes in all these spheres, in spite of "systemic resistances".

In chapter 8, "Tertiary employment, the servicelisation of labour and technological systems", Paulo Pereira de Almeida first examines the evolution of the tertiarisation process in contemporary societies and compares Portugal and the rest of the European Union. He then defends the utility of the concept of "servicelisation" to account for the applicability of the idea of service to all current forms of work. He ends with an analysis of the relationship between work, servicelisation and technology, in terms of the changes introduced to production systems by information and communication technologies and the way in which service companies are organised.

Finally, in chapter 9, "Structure, social orientations and societal projects", José Luís Casanova explains how he defined, implemented and applied the concept of social orientations empirically to the situation in Portugal in the wake of reflexive reconstruction of the concept of *habitus*. He distinguishes between four types of social orientation by means of a combination of an axis associated with social action and another associated with attitudes toward social inequalities, and conducts a detailed analysis of the variation in these orientations, on one hand on the basis of indicators of social conditions, which demonstrate the importance of qualifications, and on the other hand of indicators of societal projects.

This book is intended to make a series of integrated contributions to a better understanding of Portugal's transition to the knowledge society and a

greater, more reflective awareness of the conditions, aspects, protagonists and social processes in this transition. We also hope that, at a more general level, it will join the effort of the social sciences to clarify the current relationships between knowledge and society.

Chapter 1

Social classes and educational assets
A transnational analysis

António Firmino da Costa, Fernando Luís Machado, and João Ferreira de Almeida

Introduction

How are European social structures being restraped against the current backdrop of globalisation and the knowledge society?

One of the fundamental areas of sociological research has been precisely that of studying change in social structures. The aim of this study is to contribute, in a variety of ways, to updating our knowledge in this field, particularly with regards to Europe. The general hypothesis underlying this approach is that, far from having become ineffectual or out of date in the context of globalisation and the knowledge society, class analysis may help reveal, characterise and explain important features relating to contemporary processes of structural change.

However, before we can address the actual analysis, a few brief preliminary explanations of a theoretical, conceptual and operational nature are required, and these are provided in the initial stages of this chapter. The subsequent points then condense the main results of this research and provide an analysis of *transnational class clusters* and *class educational assets* in contemporary Europe. The conclusion examines in an integrated way these substantive analyses as well as the initial premise on the contemporary relevance of structural class analyses.

Globalisation processes and the knowledge society

The concepts of *globalisation* and the *knowledge society* have currently a somewhat paradoxical status in sociological analysis. On the one hand, they are frequently used concepts in the most varied of topics. This happens to be the case not only in sociology but also in other social sciences, as well as in academic, technical, political and media discourse. On the other hand, these concepts are systematically under critical detachment and theoretical controversy in sociological analysis. There seems to be no getting away from their

use yet, by the same token, this very use is seen as an intellectually uncomfortable matter. Whatever the case, they certainly need to be clarified.

The globalisation concept began gaining ground amongst the social sciences in the early 1990s. Certain authors see globalisation as consisting, above all, of an economic strategy carried out by large multinational capitalist enterprises in search of expanded markets and internationalised production — a strategy supported by powerful states, notably the USA, and international organisations such as the World Trade Organisation, the World Bank and the International Monetary Fund. This interpretation can be found, for example, in Manuel Castells (1996), an author who suggests other concepts for large-scale contemporary social processes, the best known of which is *the network society*.

Economists also tend to see the concept of globalisation in the same light, even when they approach the process from a critical angle, such as that put forward by Stiglitz (2002, 2006), in calling for the establishment or strengthening of entities involved in the international governance of economic globalisation, with a view to making its mechanisms and effects fairer and more even-handed. Additionally, a number of bodies have been moving in the same direction, as is the particular case of the Comissão Mundial sobre a Dimensão Social da Globalização (2005).

Authors such as Giddens (1990), Robertson (1992), Waters (1995), Appadurai (1996), Beck (2000) and others who have helped push this concept decisively into the terminology and analytical perspectives of social science, prefer to speak of *globalisation processes* that not only encompass economic but environmental, cultural, communicational, political and military characteristics as well. They place at the very heart of globalisation the expansion and intensification of world-wide social relations, as evidenced over recent decades in diverse social dimensions and trough increased interdependence mechanisms.

Notwithstanding the different nuances in the various authors' theories, according to these perspectives economic transformation, such as indicated above, is a part of the process of globalisation, but the latter cannot be reduced to the former. The other factors of processes of globalisation have their own dynamics and specific importance. They may even present inconsistent trends or contradictory aspects amongst themselves. In analysing today's society, it is of vital importance that we closely examine the combinations between those different dimensions and dynamics.

The new information and communication technologies (ICT) — with their rapid development and high-speed inclusion in economic activities and daily life — as well as the general intensification of technological and organisational innovation, arising from science-based knowledge, are also often considered to be crucial sources of contemporary social change. By the same token, the process of expanding education, rapidly improving formal

qualifications, and integrating a skilled population into social and economic activity, has greatly intensified over recent decades. This is also often considered to be one of the main drivers of present-day social change. Essentially, the expressions *information society* and *knowledge society* have been used to refer to these two sets of processes.

There is a great deal of controversy in the social sciences regarding these concepts. A now classical assessment of the main interpretations of the *information society* is to be found in Lyon (1988). Castells (1996) prefers to talk of the *information age* and the *informational mode of development*. Sociological analysis such as those of Touraine (1969) or Bell (1973) had already addressed the advent of what they called the *post-industrial society*, though via very different approaches. These studies had already addressed the issue of what would come to be known as the *knowledge society*. This was thematised explicitly according to a varied number of versions, such as those of Drucker (1993) or Stehr (1994).

Certain key publications use different terminologies and focus particularly on specific central social actors in the processes that characterise the knowledge society. Examples of this are the "symbolic analysts" in Reich (1991) and the "creative class" in Florida (2002). We are thus approaching social class analysis.

Given the central connotations that these different approaches contain, it is possible to draw a conclusion: that the concept of the knowledge society essentially relates to the deeply structuring and broadly comprehensive presence in contemporary society of formalised and codified knowledge, produced by experts in specialised institutions, by means of highly elaborated procedures. Today, this knowledge represents a core component in the organisation of society and the processes of social change.

National and transnational levels of analysis

The aforementioned contemporary social processes occur largely on a transnational scale. Globalisation processes are an obvious example. The processes of European integration are another. Moreover, globalisation and European integration are not specific processes that are mutually exclusive of each other; rather they have been reciprocally influential in different ways. Both these processes are having a decisive impact in the way Portuguese society is currently being shaped and transformed.

This is not to say that national societies and nation-states, with their structural, institutional and cultural specificities, are no longer of great importance. But we cannot ignore the fact that transformation in social structures and processes are, to a large extent, currently driven at the transnational scale.

A number of authors insist on the supposed "disintegration of society" (Touraine, 2005), more postulated than ascertained, or on the need to overcome

"methodological nationalism" (Beck, 2000), to which, in fact, nobody in sociology subscribes today. But the assertion that societies and nation-states have vanished into thin air seems a rather premature one.

More sociological analysis is required that encompasses two analytical levels — national and transnational — precisely in order to understand many contemporary social phenomena. This is the aim of this chapter, with regards to social structures and educational profiles within the current European context.

It is also important to stress in these preliminary comments that developing a transnational sociological analysis does not simply mean making international comparisons. These comparisons are undoubtedly enlightening and allow us to gain a sense of perspective in ascertaining the importance of each country's characteristics, and then to put together explanatory hypotheses based on a systematic comparison of the similarities and differences between them. But this is not enough.

Society nowadays is also built, to a large extent, directly on transnational scales. A number of the relevant units of sociological analysis need to be redefined from both a theoretical and methodological point of view as being specifically transnational in scope. A new question therefore arises in sociological research: how can one find the pertinent transnational units of analysis?

To study a diversified set of phenomena, the pertinent boundaries are coincident with geographical contiguity and/or institutional frontiers, such as, for example, those of countries or those of the European Union. These delimitations, however, are more relevant for phenomena of an institutional or cultural nature (although this is not necessarily always the case) than for phenomena of a socio-structural character.

The end result is that, in an analysis of the social structures currently being shaped within the European context, it is important to take the delimitation of these transnational units as an aim of research in itself rather than just take for granted previously defined or a priori transnational units.

Class analysis

Will class analysis be a useful tool for sociological research on contemporary society, in the context of globalisation and the knowledge society?

It is well known that sociology has provided an ongoing forum for debates and controversies on social classes. Since its first authors, sociology has encompassed different theoretical perspectives and diversified forms of empirical research on the issue of social classes.

The problems of the relationship between structure, consciousness and action ("*structure-consciousness-action (SCA) problems*" (Pahl, 1989; Crompton, 1998) are endemic in this area. The analytical focus has been

variable, depending on the researchers: some concentrate more on class locations, others on class conflict, others on day-to-day practices and lifestyles and their relationships with social classes, others on class origins and class trajectories, others on class dispositions, identities and ideologies. There have also been various typologies of classes or class locations used in theoretical and empirical analysis. They are often presented as alternatives, comparable among themselves only partially.

The "death of class" theses arise from time to time: as a desire and a prediction, in Marx; as a supposed accomplishment, both in the theses of the apologists of "real socialism" or of "generalised middle class capitalism" and in the apocalyptic theses of the "Frankfurtian" critical theory, in the mid twentieth century; and as an would-be recent event, in post-modernist theory, at the end of the twentieth century. Every re-appearance of the theory itself clearly invalidates the earlier versions: if classes had already disappeared beforehand, they would not be re-initiating their disappearance.

Nowadays, the agenda of the sociology of social classes includes the following main areas: a) *the rise in social inequalities*, real and perceived — which, moreover, has hampered the acceptance of the "death of class" notion (Chauvel, 2004, 2006); b) *the intersection of inequalities* of class, gender, ethnicity, education, territory, identity, etc. (Devine *et al.*, 2005); c) *the relationship between classes and citizenship*, involving questions relating to the rule of law, the welfare state, democracy and conflict (Giddens and Diamond, 2005); and d) *classes at the transnational level*.

The current analysis falls precisely within the scope of the latter area. It is part of a research programme on social classes that the authors have been carrying out for a long time. This programme has given rise to a number of research projects and publications[1]; it has involved other researchers and students; it has used extensive methods (analyses of statistical sources; questionnaire surveys) and intensive methods (case studies); and it has been designing and testing a classification typology for class locations, the ACM typology (Almeida, Costa and Machado).

In operational terms, the ACM class typology consists of a socio-occupational indicator of class, based on two main variables, "employment status" and "occupation". The latter is operationalised in accordance with the International Standard Classification of Occupations (ISCO).[2] A socio- economic indicator of class in no way encompasses the full meaning of the concept of class and needs to be supplemented with other sources of information and analysis (Costa, 1999). But this does not preclude it to be a highly useful

1 Some of the milestones of this programme can be found in Almeida (1986), Costa (1987), Almeida, Costa and Machado (1988, 1994), Machado and Costa (1998), Costa (1999), Machado (2002), and Machado *et al.* (2003). In terms of a specifically transnational approach, Costa *et al.* (2000), and Almeida, Machado and Costa (2006), may be mentioned.

analytical instrument, recognised as such even by sociologists who are fairly critical of the limitations of what they call, in a somewhat simplified manner, "employment aggregates" (Crompton, 1998).

In its main version, the ACM typology includes five socio-occupational categories, and these are precisely the ones used in the following analysis. But it may also be broken down or aggregated into other versions, depending on the aim of the research, the sources of information available, the unit of analysis (the individual or the household), the scope of the population included (only the workforce or also other components of the population), and whether situations involving multiple employment are taken into consideration or not.[3]

The ACM typology may be compared to other standard models in this kind of analysis. The best known are: the G typology (Goldthorpe), also known as EGP typology (Erikson-Goldthorpe-Portocarrero) (Erikson and Goldthorpe, 1993), of which the EseC typology, a prototype proposed by Rose and Harrison (2007) of a *European Socio-economic Classification*, is a new version; the W typology (Wright, 1997); the E-A typology (Esping-Andersen, 1993); and the French CSP (*catégories socioprofessionnelles*) typology, later PCS (*professions et catégories socioprofessionnelles*) typology (Desrosières and Thévenot, 1988).

A number of the comparative advantages of the ACM typology are the following: a) it operationalises a broad set of theoretical dimensions at the core of class analysis; b) it is receptive to a wide variety of empirical situations in present-day societies; c) it is highly compact, despite the two properties mentioned above, which thus facilitates statistical processing and helps integrated sociological analysis; d) it is compatible both with official statistical sources and with specific information gathered from sociological research; e) it allows multiple aggregation and disaggregation, depending on the aim of the research and available information; and f) it uses terminology that is easily recognisable in today's world, seeking to avoid connotative anachronisms.[4]

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2 The variable "employment status" is broken down into the three main categories of the usual institutional statistical indicators: employer, self-employed and employee. Other specific categories may also be taken into account, depending on their analytical relevance with regards to the aim of the research in question and the basic information available. For further details regarding operationalisation, see Costa (1999) and Machado *et al.* (2003).

3 The bibliography mentioned in footnote 1 includes other versions of the typology.

4 It is not possible, here, to further develop the arguments relating to the comparative advantages of the ACM typology. Some of these arguments may be found in Costa (1999), Costa *et al.* (2000), and Machado *et al.* (2003).

Transnational class clusters

Using the ACM typology and the data from the *European Social Survey* (ESS) of 2004 (Round 2), involving 22 countries, it is possible not only to describe the class composition of each country but, also, to advance research into transnational class structures.[5]

Table 1.1 presents in an integrated manner the results of various steps of the analysis. At the most disaggregated level, it presents the results relating to the structure of class locations (operationalised by means of the socio-occupational indicator) for every country. At the most aggregated level, it shows the class composition of the European universe under analysis, taken as a whole.

It is of greater interest, however, to look for similarities in the class composition among specific groups of countries. This was accomplished by means of cluster analysis. The table shows the transnational clusters encountered and the structure of class locations for each transnational cluster.[6]

Cluster 1 represents the majority group, in a certain way the European standard in terms of social structure. It includes the northern countries and various western and central European countries. Spain is part of this group. The larger class location in this cluster, turned out to be that of the professionals and managers (PM), i. e. salaried people with higher or middle-level qualifications and/or higher or middle positions of hierarchical authority in the organisations — essential actors in the dynamics of the knowledge society.

Cluster 2 is distinct from the above in that its structure of class locations shows a lower relative importance for the PM, along with a significantly higher proportion of routine employees (RE), workers with routine activities in administrative, trading and service activities. The relative weight of industrial workers (IW) is even lower than in the cluster above. This cluster includes the island countries of the North Atlantic (United Kingdom, Ireland and Iceland) and Austria.

In a certain sense, the opposite occurs with cluster 3. Here, the relative weight of the IW is clearly the highest. Both this aspect and the medium-high proportion of the PM are probably connected with the specific history of these countries, all of which are in a process of post-communist transition: the

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5 The *European Social Survey* is an international survey periodically applied to representative samples of the population in each country, using questionnaires that contain a social characterisation module and various modules relating to values and representations, some fixed and others rotating.

6 A hierarchical cluster analysis was used; the most disaggregated partition before the appearance of isolated cases was selected, after its sociological interpretability was confirmed. The data were analysed by Rui Brites (professor in the Department of Quantitative Methods at the Lisbon University Institute), to whom the authors would like to express their thanks for his generous and very capable cooperation.

Table 1.1 Transnational class structures in Europe, 2004

(percentages)

Countries and *clusters*	Class locations					Total
	Entrepreneurs and Executives (EE)	Professionals and Managers (PM)	Self-employed (SE)	Routine Employees (RE)	Industrial Workers (IW)	
Norway	13.3	30.5	4.9	32.7	18.7	100.0
Denmark	14.4	30.7	2.7	32.9	19.2	100.0
Sweden	10.8	31.2	4.1	33.9	20.1	100.0
Switzerland	16.7	31.6	4.7	29.4	17.6	100.0
Luxembourg	12.3	29.5	1.9	31.8	24.4	100.0
Netherlands	16.7	37.2	2.8	30.0	13.4	100.0
Germany	16.6	29.4	3.2	26.6	24.1	100.0
Belgium	19.0	27.7	2.6	25.8	24.9	100.0
Finland	13.4	25.3	7.3	29.6	24.4	100.0
Spain	11.9	27.2	8.2	25.9	26.8	100.0
Cluster 1	14.5	30.0	4.2	29.9	21.4	100.0
Iceland	15.8	24.5	5.9	37.4	16.4	100.0
United Kingdom	18.5	19.7	5.6	38.9	17.2	100.0
Ireland	14.5	20.8	6.2	35.8	22.7	100.0
Austria	8.5	23.7	5.1	45.2	17.4	100.0
Cluster 2	14.3	22.2	5.7	39.3	18.4	100.0
Czech Republic	9.2	24.7	3.0	29.1	34.1	100.0
Slovenia	9.6	26.4	3.7	29.6	30.7	100.0
Slovakia	12.3	22.6	3.9	25.8	35.3	100.0
Estonia	11.9	23.8	2.0	24.4	38.0	100.0
Ukraine	10.7	24.5	1.0	22.4	41.4	100.0
Cluster 3	10.7	24.4	2.7	26.3	35.9	100.0
Poland	12.3	15.5	13.2	25.5	33.5	100.0
Portugal	11.7	14.1	7.8	35.5	31.0	100.0
Greece	13.0	9.4	24.2	31.9	21.4	100.0
Cluster 4	12.3	13.0	15.1	31.0	28.6	100.0
Total	13.3	25.0	5.7	30.8	25.2	100.0

Source: ESS (Round 2) 2004.

social structure still has the marks of big industrial units and widespread education.

Lastly, cluster 4 is remarkable for the presence, to a high degree, of self-employed workers (SE), namely in agriculture, and for the still comparatively limited fraction of professionals and managers (PM). Two countries from the south of Europe (Portugal and Greece) form a cluster here with Poland, probably the country with a larger agricultural sector among the former Communist countries included in this ESS round.

Moving down to a national level of analysis and comparing countries within the latter cluster, we can see, for example, that the weight of the SE is lowest in Portugal, or that the weight of the PM is lowest in Greece. Similar comparisons may be made within other clusters. This does not diminish the analysis carried out at the transnational level or reduce the sociological significance of the current transnational class structures. It merely corroborates what was said from the outset with regards to the need, nowadays, to undertake class analysis that combines national and the transnational levels.

The transnational class clusters open an analytical window of their own onto social structures, processes of structural change, their underlying factors and their effects, just as they are taking place in contemporary society; in particular, as in the case of the illustration presented here, in the European area.

Class educational assets

Class locations are one thing, *classes of agents* are another. Or rather, a deeper sociological perspective demands that these two dimensions can be analytically distinguished from each other (Costa *et al.*, 2000). Obviously, they are not two mutually independent social realities. But neither are they dimensions that can be reduced to one another, in contrast to what excessively fusional or conflationist approaches to the relationship between structure and agency would have us believe.[7]

Getting straight to the point, and notwithstanding the risk of oversimplification, it can be said that class locations are mainly structured by economic processes, whereas classes of agents are basically formed through socialisation processes.

Of course, collective action processes also have a part to play in both dimensions, whether it takes the form of institutional action or social movement. But, in a non-trivial sense, collective action always takes place against a pre-constituted social background, in this case pre-constituted in

7 Important theoretical criticism of these conceptions may be found, in particular, in Mouzelis (1995) and Archer (1995). The issue is also taken up in Costa (1999) and Pires (1999 and 2007).

Table 1.2 Class educational assets in Europe, 2004

(average years of education)

Countries e *clusters*	Class locations					Total
	Entrepreneurs and Executives (EE)	Professionals and Managers (PM)	Self-employed (SE)	Routine Employees (RE)	Industrial Workers (IW)	
Norway	14.2	15.8	10.7	11.9	11.4	13.3
Denmark	14.7	15.5	12.3	12.0	11.6	13.4
Sweden	12.7	14.5	10.3	11.2	10.5	12.2
Switzerland	11.6	12.0	9.4	9.8	9.4	10.7
Luxembourg	13.9	14.3	10.6	10.2	9.5	11.7
Netherlands	13.9	13.9	10.9	10.9	10.5	12.5
Germany	14.6	14.8	11.9	11.9	11.5	13.1
Belgium	13.7	14.6	11.1	11.4	10.6	12.5
Finland	13.8	15.6	9.6	11.7	10.0	12.4
Spain	13.3	15.4	8.0	11.2	8.8	11.7
Cluster 1	13.7	14.6	10.1	11.2	10.4	12.4
Iceland	13.5	15.8	10.4	12.2	11.7	13.1
United Kingdom	13.3	14.5	11.7	11.6	10.7	12.3
Ireland	14.0	15.2	10.8	12.4	11.1	12.8
Austria	13.6	14.0	10.7	11.6	10.7	12.1
Cluster 2	13.6	14.7	11.0	11.9	10.9	12.5
Czech Republic	14.1	14.0	12.0	11.8	11.2	12.4
Slovenia	11.4	11.4	12.6	11.7	11.6	11.6
Slovakia	13.9	14.1	11.5	11.3	11.1	12.2
Estonia	14.4	14.8	12.6	11.1	10.4	12.1
Ukraine	13.5	13.5	12.2	10.9	9.7	11.3
Cluster 3	13.7	13.7	12.1	11.4	10.6	12.0
Poland	13.7	14.9	9.9	11.4	10.4	11.7
Portugal	7.8	13.9	5.0	7.4	5.0	7.4
Greece	11.8	15.7	7.1	11.2	8.9	10.2
Cluster 4	11.2	14.8	7.5	9.9	8.1	9.8
Total	13.3	14.4	9.5	11.2	10.2	11.9

Source: ESS (Round 2) 2004.

a continuous manner, precisely by economic processes and socialisation processes.

By the same token, though at a more specific level, it may be said that class locations are predominantly structured, in immediate terms, by employment opportunities. The latter, in turn, result from complex processes involving the dynamics of markets and technologies, organisational and management models, corporate strategies and state policies.

The formation of classes of agents relates to quite distinct entities and dynamics, particularly, as mentioned, socialisation institutions and processes. The basic point to be stressed here is that, in the context of the knowledge society, socialisation processes tend to be decisively focused on formal education. In this context, it is crucially important to acquire highly codified and formalised knowledge, as well as the competences to use it, and to obtain certificates that formally recognise, make explicit and legitimise such knowledge and competences.

One of the reasons for the current development of international standards for certification is precisely the convergence between a dynamic of expanding qualifications (the knowledge society) and a dynamic of increasing potential for mobility (globalisation). This convergence calls for mechanisms that allow knowledge and skills to be recognised relatively rapidly and securely beyond the circles of close acquaintance.

Despite this general convergence, the matching of class locations by classes of agents does not always, or everywhere, lead to the same educational profiles of the social classes. Table 1.2 makes this quite clear.[8]

As can be seen, and as would be expected, those who occupy the PM (professionals and managers) class location possess the highest educational assets, followed by the EE (entrepreneurs and executives).

On the other hand, the class locations of the SE (self-employed), RE (routine employees) and IW (industrial workers) tend to be filled by classes of agents with distinctly lower educational assets. This does not mean that in present-day Europe members of these social classes are deprived of educational assets. On the contrary, their educational qualifications have become quite significant today.

One could also carry out a comparative analysis of the different countries, individually considered, which would also reveal additional, highly enlightening aspects. Table 1.2 enables this to take place.

But in this case it is important, above all, to illustrate the sociological potential offered by the use of other unit of analysis, the transnational class

8 The indicator used here is the number of years of school education. It is a fairly simple indicator but it has the advantage that measurement is reliable and allows comparisons. Other indicators of educational assets may lead to more discriminating and detailed analyses but, for the moment, the ESS does not permit use to be made of them in a sufficiently reliable way.

clusters, identified not in an a priori or indirect manner but as the result of research focused directly on class structures. Let us examine just two of the more prominent examples.

In cluster 3, it can be seen that the PM, which, as determined above, has an important relative weight in this cluster's class structure, nonetheless exposes a level of educational assets that are a little lower than in the other transnational class clusters.

In cluster 4, which includes Portugal, the IW, RE and SE register far lower average educational assets than their structural equivalents in the other clusters. Compared to their peers, they do not dispose of the same level of formalised knowledge, correlative skills and comparable certificates, which, in the context of the knowledge society and globalisation, places them in a particularly unfavourable and threatened position. This does not occur with the PM, the educational asset level of which is the same as in the other clusters. Apparently, this class of agents is already included at a larger extent into the dynamic of the knowledge society and globalisation than the other classes of agents in this cluster.

Despite the highly significant changes experienced by Portuguese society within the context of globalisation and the knowledge society, these types of dualisms or "incomplete modernity" (Machado and Costa, 1998) make up for one of its persistent structural features. This same structural pattern is currently shared by a wider, though not contiguous, transnational European space. In this case, it also involves Greece and Poland, but it does not extend in contiguity to Spain.

In Portugal and the other countries making up cluster 4, those occupying the class locations of routine employees (RE), industrial workers (IW) and self-employed workers (SE) possess significantly fewer educational assets on average than their counterparts in the other European clusters. The cognitive content that these classes of agents bring to their occupational activities does not correspond to their structural equivalents at a European level.

Accordingly, not only is *the proportion of more skilled activities lower* in this cluster (structural limitation of the class location of the PM) but *the skill level applied to the same activities is lower* as well, particularly in the classes of routine employees (RE), industrial workers (IW) and self-employed workers (SE).

The latter aspect has rarely been identified or taken into consideration, though the consequences are no less important. In fact, individual opportunities are not the same as those of members of the same classes in the other European clusters. Employability, mobility, pay and other basic aspects of the social conditions of a person's existence are structurally affected. At the societal level, quality and productivity in various areas of activity (private firms, public administration, social services, NGOs) are also structurally affected in cluster 4 countries as compared with those of the other transnational clusters.

To sum up, structural inequalities between classes are reinforced by structural inequalities between social contexts, characterised both in terms of class location structures and classes of agents formation (particularly their education and qualifications). These inequalities in turn impact on both individual opportunities and societal potentiality.

An additional note: though not developing the national level of analysis exhaustively here, we must highlight the low level of educational qualifications amongst the majority of social categories in Portugal, even when they are only compared with the other countries in the same cluster (table 1.2). If the difference is not particularly significant among the PM, the same cannot be said of RE, IW and SE workers. Moreover, the educational levels of the Portuguese EE are also very obviously lower. This is due to the weight that small and medium-size entrepreneurs have in this category and the low educational qualifications that most of them traditionally possess in the country, a structural feature that has also had highly significant consequences, in particular the difficulties in modernising the economic fabric within the context of the transition to the knowledge society.

Conclusion

This sociological analysis of the social structures in the present European area, carried out on the basis of the results of the European Social Survey, reveals a social make up whereby the lower-level salary/wage-earning classes - the industrial workers and routine employees - make up around 56% of the labour force, the self-employed workers make up less than 6%, the middle-class of salaried professionals and managers represents a quarter of the working population (25%) and the remaining class with larger assets, in the heterogeneity of its segments (entrepreneurs, top executives and self-employed professionals), amounts to around 13%.

Although the RE and IW share the status of lower-level salary/wage--earners and have many similarities in their personal relations and their daily lives, they possess very distinct structural characteristics. Examples of these differences are to be found in the content and contexts of their work, in the importance gained by the RE in the social structure in recent decades, while that of the IW has diminished, or, additionally, in the fact that the class locations of the RE are largely taken up by women whereas those of the IW are still mainly taken up by men.

Also worthy of note is the fact that the PM have become increasingly present in the social structure, which is particularly significant from the viewpoint of an analysis of social structures within the context of the knowledge society. Equally important, given the growing importance of knowledge in our societies, is the recognition of the considerable levels of educational assets attained by the different classes of agents occupying today's European social structure.

But this characterisation of the whole, with its own analytical relevance, could run the risk of presenting not much more than an arithmetic operation, that is the sum total of national data, coming down to a national average without great sociological meaning. By the same token, country-by-country analysis and international comparisons carried out one by one, though certainly useful, are also insufficient. Here there is a risk of not taking into account the social structuring processes at the transnational level, which everything indicates are actually taking place.

Can class analysis be provided with procedures that help to advance sociological knowledge of these transnational structures and the processes of change through which they are passing, with the importance that those structures and processes possess in the contemporary context of globalisation? The sociological work presented here offers positive indications in this direction, in particular through the development of the concept of *transnational class clusters* and the research results obtained for the European area.

Furthermore, can the sociology of classes provide an enlightened contribution to the analysis of social structures and the processes of social change in the context of the knowledge society? Here, the answer also seems to be positive. The concept of *class educational assets* and the substantive analytical results achieved in this domain also allow for certain advances: they clarify the differences and relationships between class locations and classes of agents; they show that agents occupying the same structural locations may possess significantly disparate educational assets in different countries or transnational clusters (which gives rise to a very important consequences); and they also clearly show from a new angle the crucial importance of formal education and certified knowledge and skills in the knowledge society.

Class structures have undergone very far-reaching changes as a result of the contemporary dynamics of globalisation and the knowledge society (Giddens, 2007). In relation to the various aspects of this transformation, examined above, the importance has been clearly established of developing, today, sociological analyses that combine national and transnational levels, rather than set them against each other as if they were mutually exclusive.

References

Almeida, João Ferreira de (1986), *Classes Sociais nos Campos. Camponeses Parciais numa Região do Noroeste*, Lisbon, ICS-UL.

Almeida, João Ferreira de, António Firmino da Costa, and Fernando Luís Machado (1988), "Famílias, estudantes e universidade", *Sociologia, Problemas e Práticas*, 4.

Almeida, João Ferreira de, António Firmino da Costa, and Fernando Luís Machado (1994), "Recomposição socioprofissional e novos protagonismos", in António Reis (ed.) *Portugal, 20 Anos de Democracia*, Lisbon, Círculo de Leitores.

Almeida, João Ferreira de, Fernando Luís Machado, and António Firmino da Costa (2006), "Classes sociais e valores em contexto europeu", in Jorge Vala and Anália Torres (eds.), *Contextos e Atitudes Sociais na Europa*, Lisbon, Imprensa de Ciências Sociais.

Appadurai, Arjun (1996), *Modernity at Large. Cultural Dimensions of Globalization*, Minneapolis, University of Minnesota Press.

Archer, Margaret S. (1995), *Realist Social Theory. The Morphogenetic Approach*, Cambridge, Cambridge University Press.

Beck, Ulrich (2000), *What is Globalization?*, Cambridge, Polity.

Bell, Daniel (1973), *The Coming of Post-Industrial Society*, New York, Basic Books.

Castells, Manuel (1996), *The Rise of the Network Society*, Oxford, Blackwell.

Chauvel, Louis (2004), "Le renouveau d'une société de classes", in Paul Bouffartigue (ed.), *Le Retour des Classes Sociales*, Paris, La Dispute.

Chauvel, Louis (2006), "La déstabilisation du système de positions sociales", in Hugues Lagrange (ed.), *L'Épreuve des Inégalités*, Paris, PUF.

Comissão Mundial sobre a Dimensão Social da Globalização [World Commission on the Social Dimension of Globalisation] (2005), *Por uma Globalização Justa. Criar Oportunidades para Todos*, Lisbon, Celta Editora, ISCTE, OIT.

Costa, António Firmino da (1987), "Novos contributos para velhas questões da teoria das classes sociais", *Análise Social*, 98.

Costa, António Firmino da (1999), *Sociedade de Bairro. Dinâmicas Sociais da Identidade Cultural*, Oeiras (Portugal), Celta Editora.

Costa, António Firmino da, *et al.* (2000), "Classes sociais na Europa", *Sociologia, Problemas e Práticas*, 34.

Crompton, Rosemary (1998), *Class and Stratification*, Cambridge, Polity.

Desrosières, Alain, and Laurent Thévenot (1988), *Les Catégories Socioprofessionnelles*, Paris, La Découverte.

Devine, Fiona, *et al.* (2005), *Rethinking Class. Culture, Identities and Lifestyle*, Houndmills, Palgrave.

Drucker, Peter (1993), *Post-Capitalist Society*, New York, Harper Collins.

Erikson, Robert, and John H. Goldthorpe (1993), *The Constant Flux. A Study of Class Mobility in Industrial Societies*, Oxford, Clarendon.

Esping-Andersen, Gosta (1993), *Changing Classes. Stratification and Mobility in Post-Industrial Societies*, London, Sage.

Florida, Richard (2002), *The Rise of the Creative Class*, New York, Basic Books.

Giddens, Anthony (1990), *The Consequences of Modernity*, Cambridge, Polity.

Giddens, Anthony (2007), *Europe in the Global Age*, Cambridge, Polity.

Giddens, Anthony, and Patrick Diamond (eds.) (2005), *The New Egalitarianism*, Cambridge, Polity.

Lyon, David (1988), *The Information Society. Issues and Illusions*, Cambridge, Polity.

Machado, Fernando Luís (2002), *Contrastes e Continuidades. Migração, Etnicidade e Integração dos Guineenses em Portugal*, Oeiras (Portugal), Celta Editora.

Machado, Fernando Luís, and António Firmino da Costa (1998) "Processos de uma modernidade inacabada", in José Manuel Leite Viegas and António Firmino da Costa (eds.), *Portugal, que Modernidade?* Oeiras (Portugal), Celta Editora.

Machado, Fernando Luís, *et al.* (2003), "Classes sociais e estudantes universitários: origens, oportunidades e orientações", *Revista Crítica de Ciências Sociais*, 66.

Mouzelis, Nicos (1995), *Sociological Theory. What Went Wrong?*, London, Routledge.

Pahl, Ray (1989), "Is the Emperor Naked?", *International Journal of Urban and Regional Research*, 13 (4).

Pires, Rui Pena (1999), "Uma teoria dos processos de integração", *Sociologia, Problemas e Práticas*, 30.

Pires, Rui Pena (2007), "Árvores conceptuais: uma reconstrução multidimensional dos conceitos de acção e estrutura", *Sociologia, Problemas e Práticas*, 53.

Reich, Robert B. (1991), *The Work of Nations*, New York, Random House.

Robertson, Roland (1992), *Globalization. Social Theory and Global Culture*, Newbury Park (Cal.), Sage.

Rose, David, and Eric Harrison (2007), "The European socio-economic classification: a new social class schema for comparative European research", *European Societies*, 9 (3).

Stehr, Nico (1994), *Knowledge Societies*, London, Sage.

Stiglitz, Joseph E. (2002), *Globalization and its Discontents*, New York, W. W. Norton.

Stiglitz, Joseph E. (2006), *Making Globalization Work*, New York, W. W. Norton.

Touraine, Alain (1969), *La Société Post-Industrielle*, Paris, Denoel.

Touraine, Alain (2005), *Un Nouveau Paradigme*, Paris, Fayard.

Waters, Malcolm (1995), *Globalization*, London, Routledge.

Wright, Erik O. (1997), *Class Counts. Comparative Studies in Class Analysis*, Cambridge, Cambridge University Press.

Chapter 2

Literacy and social inequalities in the knowledge society

Patrícia Ávila

Introduction

In recent years, literacy studies have been carried out from different theoretical and methodological perspectives. It is a field of study that takes in contributions from numerous disciplines, in particular anthropology, history, psychology and sociology, amongst others. One of the contributions of the sociological approach is to place at the heart of analytical reflection the social importance of reading and writing in contemporary society and to show how literacy is a basic resource in many spheres of people's lives.

The main theme of analysis in the present chapter is literacy in Portuguese society.[1] At an empirical level, the data that supports the analysis come from the IALS (*International Adult Literacy Survey*) — the world's first large-scale, comparative assessment of adult literacy and the one that, to date, has brought together the greatest number of countries.

The first two parts in the chapter aim to provide a theoretical and conceptual framework for the study of literacy in today's societies, and present — in a necessarily brief form — the recent development of literacy studies in Portugal.

These will be followed by an analysis of the literacy profile in the Portuguese society by comparing national results with those of other countries. The aim here is to understand how literacy is distributed throughout Portuguese society in comparison to other national contexts. With these distributions known, the reflection takes Portuguese society as an empirical referent and deals with two complementary issues: on the one hand, it seeks to clarify the importance of literacy as a resource that, in present-day societies, is

1 This chapter focuses on part of the results presented within a broader investigation on literacy and key-competencies in the knowledge society (Ávila, 2008).

related to people's practices and, above all, to their access to certain positions in the social structure; on the other hand, it aims to understand the social factors that sustain these skills, and thus contribute to an understanding of the processes that can foster their development.

Writing and literacy in the knowledge and information society

The present-day importance of literacy represents the culmination of a long process. Invented over 5,000 years ago, writing has passed from an art form restricted to an elite minority to become a widespread skill. In the knowledge society written information is a ubiquitous presence and at the same time there are an ever-growing number of people capable of decoding the written word and making use of it as an instrument and as a basic resource in their everyday lives — be it professional, social or personal.

Contemporary societies are thus witnessing an unparalleled universalisation and democratisation in terms of accessing reading and writing. This may be a rather obvious fact but it is rarely emphasised by the numerous theoretical analyses and perspectives that discuss the distinctive characteristics of contemporary societies. But it must be stressed in the sociological study of literacy. Suffice it to say that knowledge and information, as distinctive marks of contemporary societies (Castells, 2002, 2003a and 2003b; Lyon, 1992; Stehr, 1994, among others), are underpinned by writing. For this reason, present-day society is also undeniably the *society of literacy*. The universalisation of writing and its far-reaching repercussions make it a decisive resource for societies and individuals.

To understand the importance of writing in contemporary societies, one needs to bear in mind that the implications of this "technology" (of the intellect, in the words of Jack Goody) are indissociably *social* and *cognitive* (Goody, 1987b, 2000). Whereas historical analysis has shown how writing is interconnected with the increasing complexity of societies (Braudel, 2001; Cipolla, 1969), other contributions from psychology, anthropology and, more recently, sociology underline not only the social consequences but also the cognitive implications associated with the learning and use of writing.

Numerous studies have stressed the importance of writing for the analysis, organisation and categorisation of information. Writing enables objectivation and this enables reflection on and distancing from what has been written. The social and cognitive consequences of this process are multiple (Goody, 1987a, 1987b, 1988; Havelock, 1996; Olson, 1994). In sociology, Bernard Lahire shows how writing allows for a break with practical sense — that is, with incorporated habits and routines — leading to *a reflexive return on action* and to a *reflexive preparation of action* (Lahire, 1993, 2003b).

It should be noted that to understand and recognise the social and cognitive consequences of writing certainly does not mean adopting a deterministic

perspective, as it is also recognised that the potentialities of writing, even its historic development, cannot be set apart from the social context. If the argument is focused on contemporary social situations, this means that, at the same time as it is asserted that writing forms the base of today's knowledge and information societies, it is also argued that these bring together the social (and technological) conditions for writing to become incorporated, as never before, in the most diverse fields and practices. It is this progressive expansion that leads, for example, to the fact that reflexivity is currently a distinctive mark of society itself, something that has been argued in various macro-sociological analyses (Beck, Giddens and Lash, 2000; Giddens, 1992). That is, the present-day social context strengthens and expands both cognitive and reflexive implications of writing.

As information and knowledge increasingly lie at the heart of the structural changes in today's society, the ability to write and interpret written information, of different types and in different contexts, becomes decisive. That is to say, present-day societies are characterised not only by the across-the-board presence of written materials but also by the fact that the ability to read and write in these societies is becoming critical to all citizens. So recognising the importance of literacy in present-day social situations means understanding that the more widespread writing becomes, the more tends to increase the demands to read and write for all the population and, at the same time, the risks of social exclusion for those who do not have the minimum literacy skills. Although departing from significantly different conceptual perspectives, numerous analyses about contemporary societies have demonstrated how the absence of abilities in processing written information compromises reflexivity and the access to knowledge and information. Literacy skills are therefore associated with the main social divisions and inequalities in knowledge societies (e.g. Lash, 2000; Reich, 1993; Toffler, 1991).

Seen as a basic component of everyday social existence, literacy has, in recent years been researched as a *competence*. It is closely associated with the topic of key-competencies and considered by many as an essential skill in contemporary societies, amongst others, that it is also worth identifying (Costa, 2003; Rey, 2002; Rychen, 2003; Rychen and Salganik, 2003). However, given the multiplicity of key-competencies proposed, the crucial importance of literacy sometimes seems to lose its lustre or be diminished. This does not mean, however, that it occupies any less of a critical place in contemporary social situations. Considering the strong presence of written materials and the cognitive and reflexive potentialities of writing, literacy is a decisive competence with broad application: without it, the acquisition of other skills (throughout life and in different life contexts) may be jeopardised (Costa, 2003; Murray, 2003). This is the case, for example, with the information and communication technologies. Notwithstanding the specific skills required in this domain, a lack of literacy impacts negatively

on learning these technologies and seriously limits their use (Kirsch and Lennon, 2005).

It is also important to stress the relationship between literacy and learning on this point. The need for constant, lifelong learning has been emphasised by various authors as a distinctive sign of contemporary societies and economies (Carneiro, 2001; Conceição, Heitor and Lundvall, 2003; Enguita, 2001; Lundvall, 2001; Schienstock, 2001). As knowledge and information increasingly structure society, the intensity and rhythm of the changes being experienced are of such importance that they require persons to engage in various learning processes throughout the course of their lives, without which they will be unable to keep up with the changes confronting them in different contexts.

In this social context, *literacy represents an essential competence for the adult population*. The ability to use written information with increased competence becomes of critical importance, whether this involves the access to information and knowledge, the opportunity for lifelong learning or, again, the exercise of reflexivity and symbolic analysis (with reference to personal or working life).

It is thus understandable that literacy has emerged in the most highly developed countries as a social problem and a field of research. They are the best witnesses to the growing incorporation of formalised symbolic components with productive technologies and economic activity in general; they are also best able to recognise literacy as a basic resource required by individuals in order to meet the challenges set by society. For this reason, the concept of literacy represents a new approach to the problem of social inequalities in the access to writing in contemporary societies.

Literacy studies in Portugal

To a certain extent, literacy studies carried out in Portugal follow the main trends, analytical perspectives and methodologies of other countries.

Two research traditions can be distinguished. Firstly, ethnographic and monographic studies. Stressing the need for the analysis to be carried out with reference to the specific socio-cultural contexts, these studies have shown the complexity of ways in which people relate to reading and writing and the meaning they assign to them. This is the case of the numerous research about the appropriation of the written culture (and related problems) and about the complex relationship between oral and written traditions, whether involving children in rural environments (Iturra, 1990a, 1990b; Reis, 1995, 1997) or the adult population with low levels of education and the relationship that they establish with written materials (Ávila, 2008: 311-380; Cavaco, 2002; Gomes, 2003, 2005).

The second approach concerns quantitative and extensive analysis. Above all, these studies have comparative concerns and attempt to measure

and interpret the literacy profile of the adult population, providing an analysis of the social factors related with literacy distributions and uses. The USA and Canada pioneered this line of research, with the first studies dating back to the 1970s. Later on, these two countries carried out a decisive role in setting up the first international study of literacy (*International Adult Literacy Survey* — IALS) (OECD and HRDC, 1997; OECD and Statistics Canada, 1995 and 2000). In Portugal, the extensive study of literacy, defined as the ability to use written information in daily life, started with the *National Literacy Study* (coordinated by Ana Benavente (Benavente *et al.*, 1996; Costa and Ávila, 1998).[2]

Placing the stress on the ability to use of written information in daily life, extensive literacy analysis have attempted, on a conceptual and methodological level, to deal with an essential question: that of the discontinuity often encountered between formal learning and practical use and, greater still, between the level of schooling achieved and the ability to make use of reading and writing. This is achieved by changing the analytical perspective: from the processes of skill acquisition to that of it's uses and practices, from the context of school to that of daily life, and from credentials obtained, with the related social status this entails, to competencies actually used in today's societies (Costa, 2003: 182-183). The written materials considered in these researches are highly diversified. This way, it is recognised the cross nature of the mediums and situations that involve reading in contemporary societies (Barton and Hamilton, 1998; Baudelot, Cartier and Detrez, 2000; Cavallo and Chartier, 1997; Furtado, 2000; Girod, 1991; Lahire, 2003a, 2004).

Three main attributes may be used to systematise the conception of literacy adopted in the national and international surveys assessing adult literacy competencies. Firstly it is a *non-dichotomist* conception, which means that literacy is defined and measure along a continuum of proficiency; secondly, literacy is understood in a *dynamic* perspective, from a twin viewpoint: not only are the demands of society in relation to literacy increasing, but adult skills may develop or deteriorate; and, finally, it is a *multi-dimensional* conception, since various domains may be distinguished. It is the case of prose literacy, document literacy and quantitative literacy, the three dimensions considered in the first international survey carried out in this field.

In very general terms, the latter was the conception of literacy followed in the international adult literacy survey (IALS) and the *National Literacy*

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2 It is important to mention that in the *National Literacy Survey* the extensive approach was complemented by a set of monographs, almost all qualitative in nature. With the latter, it was possible to advance the knowledge about the way specific social groups relate to literacy and, in general, written information (Dias, 1996; Machado, 1996; Sebastião, 1996; Teixeira and Fontes, 1996a, 1996b). The extensive approach closely followed the theoretical and methodological models of the US and Canadian studies, within which research into literacy experienced significant conceptual and methodological renewal.

Table 2.1 IALS literacy levels

Level	Description
1	Indicates persons with very poor skills, where the individual may, for example, be unable to determine the correct amount of medicine to give a child from information printed on the package.
2	Respondents can deal only with material that is simple, clearly laid out, and in which the tasks involved are not too complex. It denotes a weak level of skill, but more hidden than Level 1. It identifies people who can read, but test poorly. They may have developed coping skills to manage everyday literacy demands, but their low level of proficiency makes it difficult for them to face novel demands, such as learning new job skills.
3	Is considered a suitable minimum for coping with the demands of everyday life and work in complex, advanced society. It denotes roughly the skill level required for successful secondary school completion and college entry. Like higher levels, it requires the ability to integrate several sources of information and solve more complex problems.
4 e 5	Describe respondents who demonstrate command of higher-order information processing skills.

Source: IALS (OECD and Statistics Canada, 2000: xi).

Study.[3] Both pieces of research developed a methodological strategy aimed at *directly assessing* adult the literacy. This assessment was based on a test that simulated common situations and problems in daily life, which, in order to be resolved, required the interpretation of different printed materials. Using this methodology, the National Literacy Study provided for the first time an estimate of the patterns of adult literacy skills in the Portuguese society. However, as it was a national survey, the results could only be compared indirectly with those of the countries involved in the IALS (Gomes *et al.,* 2002).

Developments in the wake of the *National Literacy Study* lead the participation of Portugal in the final phase of the IALS (OECD and Statistics Canada, 2000). The data obtained allow continuity in the study of literacy in Portuguese society, based on *internationally comparable* indicators on the three mentioned domains — prose literacy, document literacy and quantitative literacy. For each of these domains, the results are presented at five *literacy levels* of increasing complexity (table 2.1).

In the present chapter, the IALS data are analysed with the aim of clarifying the situation in Portugal from an international perspective. For this purpose, on the one hand the data published in the final IALS report (OECD and Statistics Canada, 2000)[4] are explored and systematised. On the other hand, the results of complementary multivariate statistical analyses are presented with the aim of providing more in-depth information on Portugal.

3 A detailed explanation of both studies, and a comparison of them, may be found in Ávila, 2008: 127-164.

Literacy distributions

The distribution of adult literacy in Portugal was established for the first time with the *National Literacy Study* and confirmed with the IALS. It is characterised, essentially, by the fact that the overwhelming majority of the population have very limited literacy skills (figure 2.1).

Level 1 on the literacy scale includes people whose skills are so limited that, at best, they only allow them to accomplish elementary reading, writing and calculation. This is the prevailing profile among the Portuguese population. Depending on the domain of literacy taken into account, the percentage of respondents in this situation varies between 42% (quantitative literacy) and 49% (document literacy). When the two lowest levels are combined (levels 1 and 2), the figures obtained are extremely high, varying between 72% (quantitative literacy) and 80% (document literacy). Although the differences between the three scales are not very large, the results show that document literacy is the domain which the Portuguese have the worst results and quantitative literacy is that in which they fare best.

When the results of the 22 countries participating in the IALS are compared and ranked, the great distance separating Portuguese society from other countries can be seen. Figure 2.2 was constructed on the basis of the proportion, in each country, of individuals whose skills lie, at least, at level 3. In international literacy surveys, this is considered the minimum level required for citizens to be able to respond to the demands of advanced societies (OECD and Statistics Canada, 2000: 19).

The Nordic countries hold the top positions, irrespective of the literacy scale. With reference to document literacy, Sweden is at the top, followed closely by Norway and Denmark. English-speaking countries occupy intermediate positions. On the lower rungs are some Eastern European countries (Hungary, Slovenia and Poland), Portugal and, in last place, Chile.

There is little variation in Portugal's position if the countries are listed according to the other two literacy domains: the country occupies the penultimate position not only in the case of document literacy but also quantitative, and the third last position in prose literacy.[5] The coincidence in the relative positions of document and quantitative literacy shows that the results for Portugal on the last scale (slightly better in comparison to the other two scales) are not reflected in any alteration in its position in international terms.

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4 After the IALS, another international study of great breadth was carried out, the ALL (Adult Literacy and Life Skills Survey) (Murray, Clermont and Binkley, 2005; Statistics Canada and OECD, 2005). This research widened the range of skills assessed (numeracy and problem-solving were included, in addition to literacy). Portugal, however, did not participate in this study. Moreover, significantly fewer countries participated in it than in the IALS (six, in the first phase).

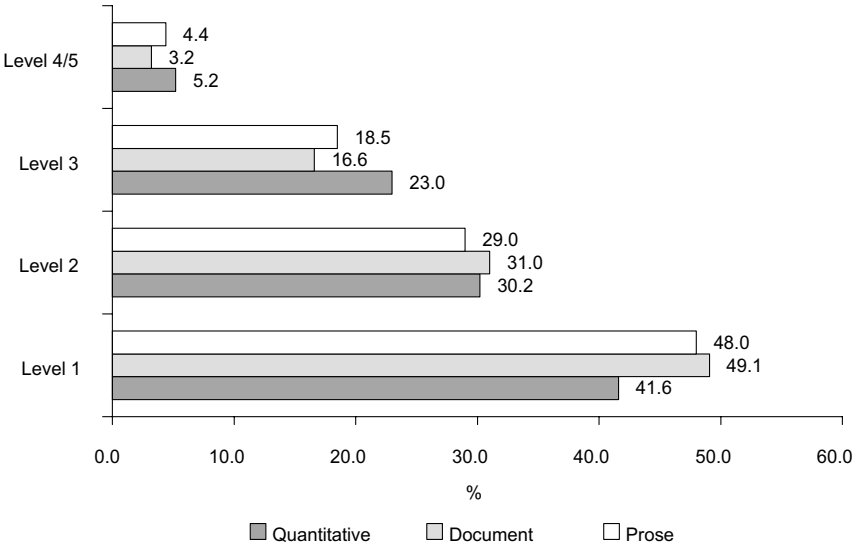

Figure 2.1 Adult literacy levels in Portugal (population aged 16-65), 1998
Source: IALS (OECD and Statistics Canada, 2000).

Besides the overall differences between countries and among the three scales, another aspect to be taken into account when literacy distributions are compared is the degree of variability, or dispersion, of the results *within* each country. In other words, it is a question of understanding how far the reality reflected by the literacy level distributions is more, or less, homogeneous. On this point, it should be mentioned that the literacy levels represent an aggregation, into five bands, of the scores obtained, on a scale of 0-500. An analysis of this data, in terms of mean scores, when combined with a measure of the dispersion in the overall distribution,[6] provides a clearer picture of the differences between countries with regard

5 It should be noted that the relative positions of certain countries, as suggested by the ranking presented, should be interpreted with care in certain cases, since not all the differences between countries can be considered statistically significant. If the comparisons were carried out on the basis of average points, or scores, the following may concluded for Portugal: the average results for prose and document literacy are significantly lower when compared with all the other countries except Poland and Chile (the differences between Portugal and these two countries are not statistically significant); the same happens with quantitative literacy, but here the average scores obtained for Portugal are significantly higher than those of Chile. The set of results for the multiple comparison tests for all the countries may be consulted in the final IALS report (OECD and Statistics Canada, 2000: 19).

6 The measure used was the difference between percentiles 5 and 95 in the distribution of the literacy scores for each country (OECD and Statistics Canada, 2000: 14).

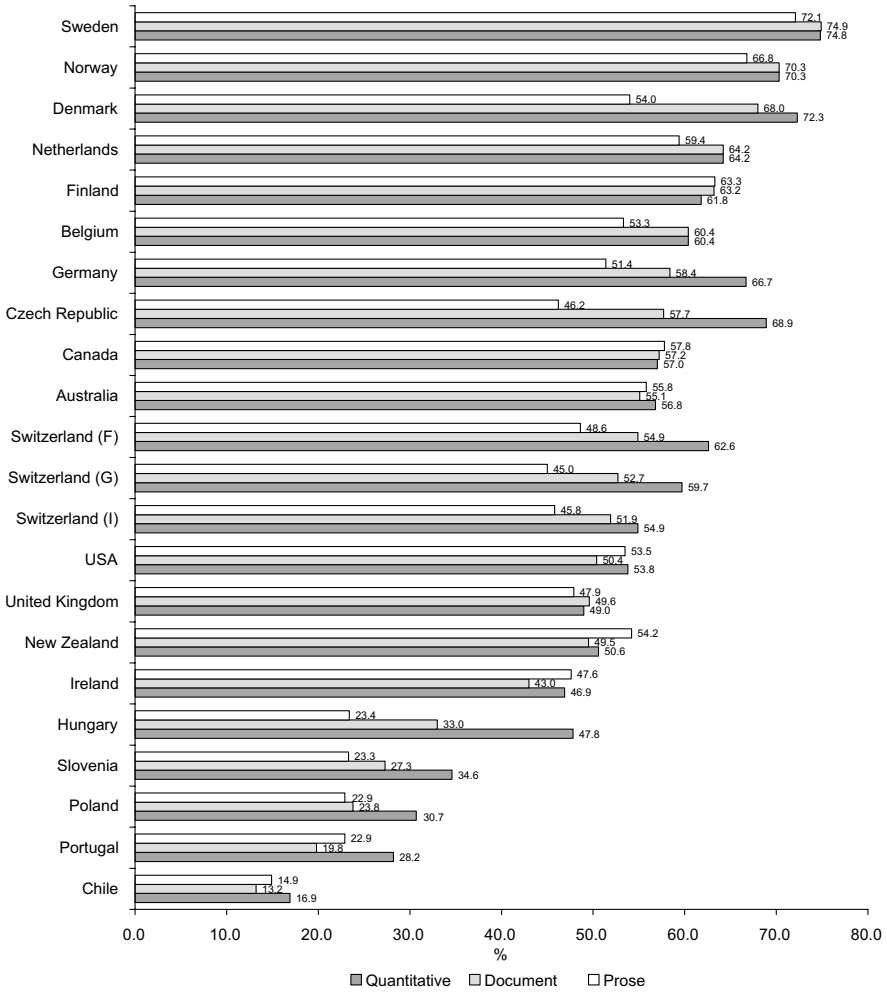

Figure 2.2 Prose, document and quantitative literacy in IALS participating countries, 1998

Note: Countries ranked by the proportion in levels 3 and 4/5 of document literacy.
Source: IALS (OECD and Statistics Canada, 2000).

to the literacy distributions. Figure 2.3, allows a joint analysis of these two variables for prose literacy.

If countries' positions are only considered in relation to the vertical axis, one may conclude that the ranking obtained on the basis of the mean scores (on a scale of 0-500) is fairly close to that established on the basis of literacy levels. It does, however, make the existence of three situations even clearer: that of countries such as Portugal, Chile, Slovenia and Poland, with

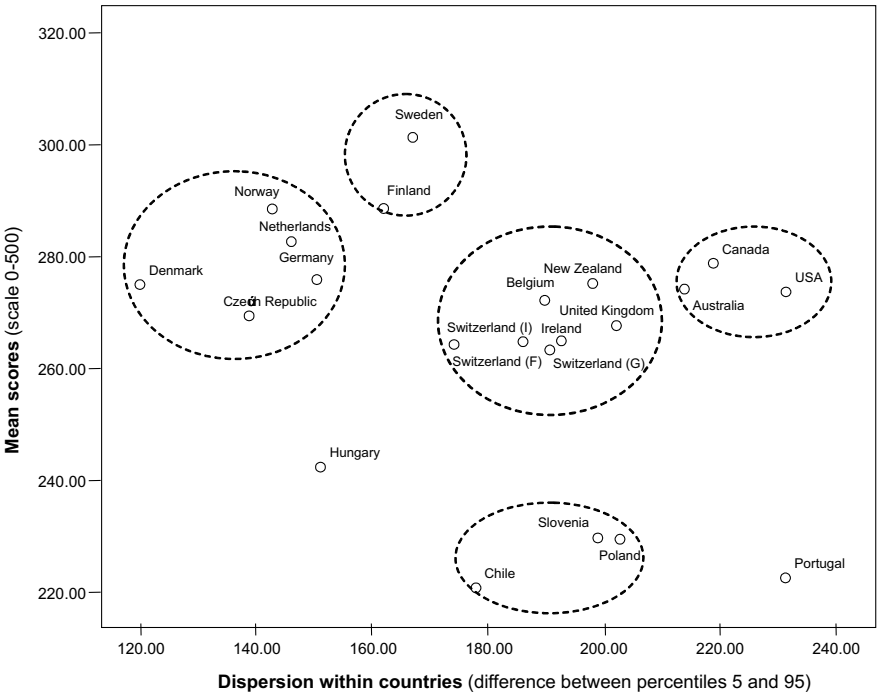

Figure 2.3 Literacy scores (mean and dispersion) in IALS participating countries (prose literacy), 1998

Source: IALS (OECD and Statistics Canada, 2000).

very low mean scores; that of Hungary, which occupies an intermediate position; and that of the other countries, all of which have mean scores above 260.

This figure also shows that the position held by each country in this hierarchy seems to be independent of the magnitude of the differences existing within each country (horizontal axis). A combined reading of the two dimensions allows us to mark out clear subgroups of countries, or clusters[7] (outlined in the figure). As can be seen, the difference between some of these groups is in the horizontal axis in particular, i.e. it results from the greater or lesser variability in the distributions of literacy.

From this perspective, Canada, Australia and the United States — countries with relatively high literacy profiles — reveal some similarity with

7 The circles with shading contain groups of countries identified in a cluster analysis (hierarchical cluster analysis). The cluster solution represented in the graph isolates Hungary and Portugal from the other countries, which underlines their specificity.

Portugal: the inequalities in the distribution of literacy within these countries are much higher than, for example, in Nordic countries, of which Denmark stands out as being the most homogeneous. Other countries with relatively low, or intermediate, literacy profiles, e.g. Hungary, register internal homogeneity levels that are significantly higher than Portugal's.

These results clearly show the singularity of Portugal: it not only has the lowest mean proficiency in respect to literacy but, simultaneously, presents one of the highest values of internal inequality. As will be demonstrated below, an analysis in greater depth allows us to formulate certain hypotheses on the factors underlying this situation.

Literacy and education

Educational attainment is one of the most important factors to be taken into account when analysing literacy distributions, both in comparing results between countries and the interpretation of national results.

Although the relationship between education and literacy is not straightforward, in contemporary societies school is a decisive, if not the main, context in acquiring reading and writing skills. In addition, school is an important context for the *use* of literacy skills, since they are basic and indispensable instruments for the most diverse kinds of learning in the various subject matters. For this reason, it is important to clarify Portugal's situation in this domain, once again on the basis of international comparison.

The data published in 2005 on the educational levels of the adult population (25-64 years of age) in OECD countries (OECD, 2005) leaves no doubt as to the gap between Portugal and the others. This country has one of the highest percentages of people with an education below secondary level: around 80%. Only Mexico and Turkey have values close to this. Greece, Italy and Spain, southern European countries with which Portugal is often compared in various indicators of social and economic development, have distinctly better levels of education among the adult population, with rates of roughly 50% for secondary or higher education. It is thus clear that the main reason for the shortfall in literacy distributions in Portugal is, indisputably, the limited average education of the adult population.

It is possible to compare literacy and educational distributions for IALS participating countries. Figure 2.4 presents a graph (scatter plot) with the position of each country in relation to these two dimensions.

Generally speaking, the higher the proportion of the population with at least upper secondary education (horizontal axis), the greater the proportion of the population in literacy levels 3 and 4/5 (vertical axis). Portugal's position, a huge distance from the other IALS participating countries in both dimensions, is an example of the convergence between low educational rates and low literacy rates.

This data also shows that the two distributions do not overlap and the correspondence between them, when national data is compared, is even weaker than might be expected. The straight line drawn in the figure represents what the position of the various countries would be if the relationship between literacy and education were linear. As can be seen, the distances in relation to this position may be fairly large and in either direction, as in the cases of Poland and Sweden, for example.

It should be noted that the lack of absolute correspondence between literacy and education has been one of the arguments most used by those who support methodologies involving the direct assessment of literacy: for the same levels of educational attainment, countries (and individuals) may perform differently in terms of literacy skills. What the IALS results show is that, whereas certain countries have a better position in literacy than would be expected (especially most Nordic countries, Australia and New Zealand), others have lower results than expected, if education is used as an indirect indicator of literacy (which is the case for Poland, Hungary, the United States, the United Kingdom and Portugal).

Thus, the position held by Portugal reveals the enormous deficit in education amongst Portuguese adults (by far the lowest of all the IALS participating countries) and also shows that the literacy distribution is distinctly below what would be expected, supposing an average "conversion rate" of educational levels into literacy skills.

However, this snapshot of the country corresponds to the "average profile" of the population. Bearing in mind the marked inequalities in the distribution of literacy skills in Portuguese society, we must continue this analysis, resorting once again to information relating to schooling.

Figure 2.5 presents literacy average scores in IALS participating countries, by educational level. As expected, this data shows that literacy skills are related with the level of education: individuals with tertiary education perform better on average than those who have completed upper secondary education and the latter, in turn, are positioned above those who have less than upper secondary education.

However, from the perspective of an international comparison this figure raises other questions worth reflecting on the specificity of Portugal. Firstly, it can be observed that the discrepancies between degrees of education, with respect to literacy, are not of the same magnitude in all countries. The United States of America and Portugal are highly conspicuous for the great chasm in the skill profiles of the most and least educated. In other countries, such as Canada, Slovenia or Chile, the inequalities are also quite notable, though not as much as in the former. Even so, the case of Portugal deserves special note as it shows up the greatest difference between those who have completed upper secondary education and those who haven't.

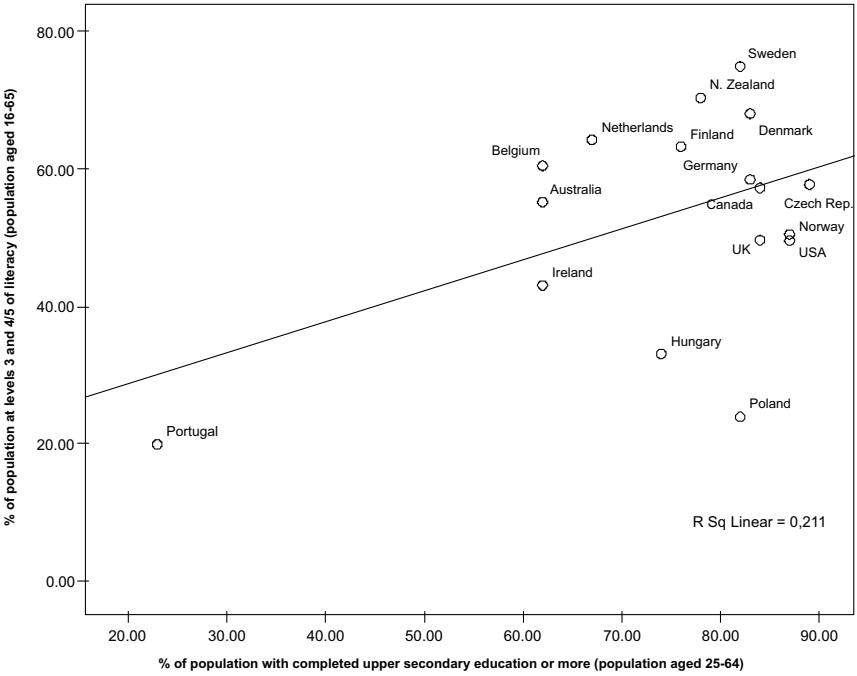

Figure 2.4 Education attainment and document literacy (IALS participating countries)
Sources: Education at a Glance (OECD, 2005) and IALS (OECD and Statistics Canada, 2000).

These differences mean that countries relative position in literacy scales may differ depending on the level of education being considered. Once again, the situation of Portugal is particularly illustrative. It may be remembered that Portugal holds the final positions when the hierarchy is established on the basis of the scores on the literacy scales for the whole population. However, if the countries are ranked according to the results for individuals with tertiary education (as is the case in figure 2.5 for prose literacy), Portugal is then situated in an intermediate position, immediately after New Zealand. This does not occur with other countries, such as Chile or Poland, which maintain the final positions even when ranked according to the latter criterion. The results for Portugal are even more surprising if the ranking takes into account the average scores for those who have completed upper secondary education. In this case, Portugal becomes the fourth best country classified, immediately after Sweden, the Netherlands and Finland.

It can thus be seen that Portugal is one of the countries with the lowest skill profiles, when the analysis involves the whole of the population (see the beginning of the chapter), largely because of the markedly low literacy levels

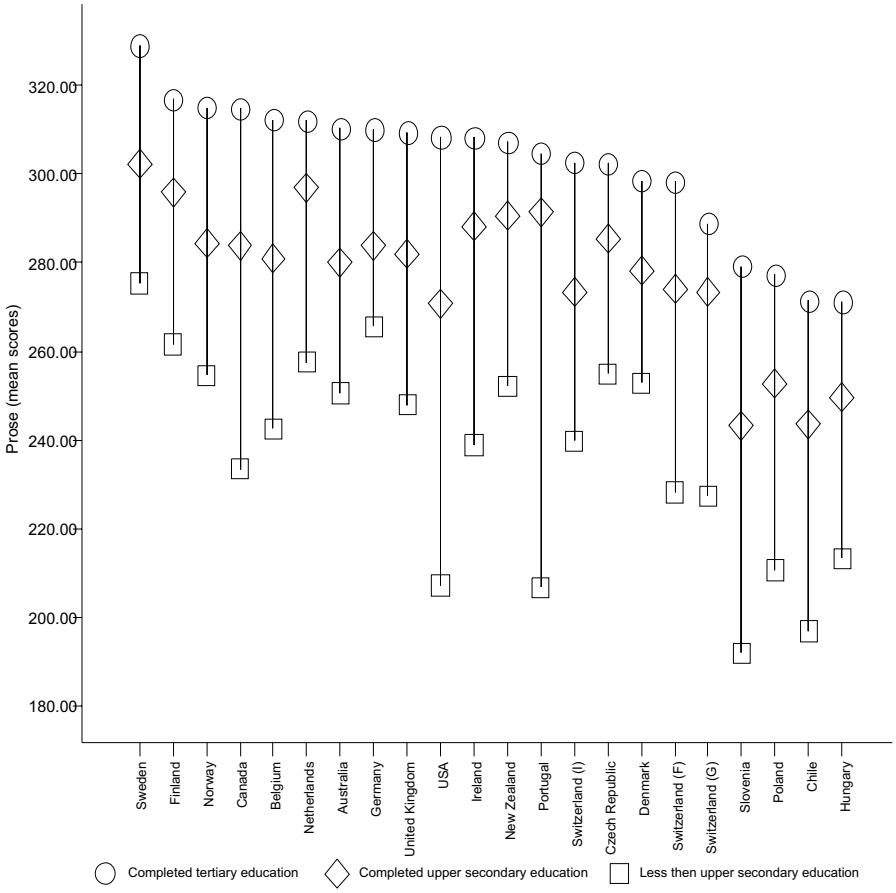

Figure 2.5 Literacy scores (prose) by educational attainment in IALS participating countries, 1998

Note: Countries ranked according to results in tertiary education.

Source: IALS (OECD and Statistics Canada, 2000).

of the least educated, who form a majority in Portuguese society (around 65%). For this reason, these results help us to understand the pronounced inequalities that exist in Portuguese society in terms of literacy — inequalities that have already been pointed out. What becomes clearer now is the importance of educational attainment in identifying these discrepancies. The country seems to shadow the most developed societies when viewed from the perspective of the best educated. It appears to be doubly disadvantaged when viewed from the perspective of the least educated (who form the majority of the population): the education deficit is exacerbated by a skill deficit that is more marked than would have been expected.

Literacy in everyday life: resources, contexts and practices

The results hitherto presented have underlined the sharp social inequalities that cut across Portuguese society in terms of the distribution of literacy skills. How far these skills tend to be associated with literacy practices in daily life and, above all, certain positions in the social structure is a question that sociological analysis has been attempting to research. Returning to the IALS data, but now only in relation to Portugal, we can show, empirically, the way in which literacy tends to be associated with other social divisions and helps to reinforce them.

Using multiple correspondence analysis (Carvalho, 2004), it is possible, in a two-dimensional graph, to represent the categories of a set of variables and understand how they are related to each other and to literacy levels. Besides literacy (prose), these variables include work situation and occupation, the regularity of different activities such as reading books, newspapers and magazines, and the degree of autonomy of (or dependence on) individuals experience in everyday life in respect to literacy tasks[8] (figure 2.6). An overall glance at the diagram immediately shows that there is a social hierarchy, revealed in the parabolic form exhibited by the distribution of the categories. The occupation and work situation illustrate this hierarchy well: students and the most highly qualified occupations are in the positive extreme (1st quadrant), followed by managers and administrative employees (2nd quadrant); further away are the unemployed, industrial and agricultural workers, and trade and services employees (3rd quadrant); finally, at the other extreme of the hierarchy (4th quadrant) are pensioners, housewives and unskilled workers.

This distribution itself reveals some of the main social stratification vectors running through Portuguese society. The most important aspect is the way that literacy accompanies the definition of this hierarchy and helps to reinforce it. The correspondence is obvious, with the highest literacy levels going hand-in-hand with the most highly qualified occupations and, in turn, the lowest levels positioned close to the least skilled occupations, the unemployed, pensioners and housewives. The association between socio-occupational categories and literacy thus confirms literacy as an indispensable condition for obtaining employment and the most advantageous positions in the social structure.

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8 An index was constructed for the purpose, registering the number of situations, out of a total of seven (e.g. reading instructions and leaflets, reading newspapers, filling in forms, etc), in which each respondent states that, with a certain frequency, he or she needs other people's help; this was then codified into four categories that reflect the degree of independence in literacy tasks. The category "high autonomy" corresponds to cases in which individuals declare that they never need help in any of the situations presented and, at the other extreme, "high dependence" relates to those who need help from others in these same situations.

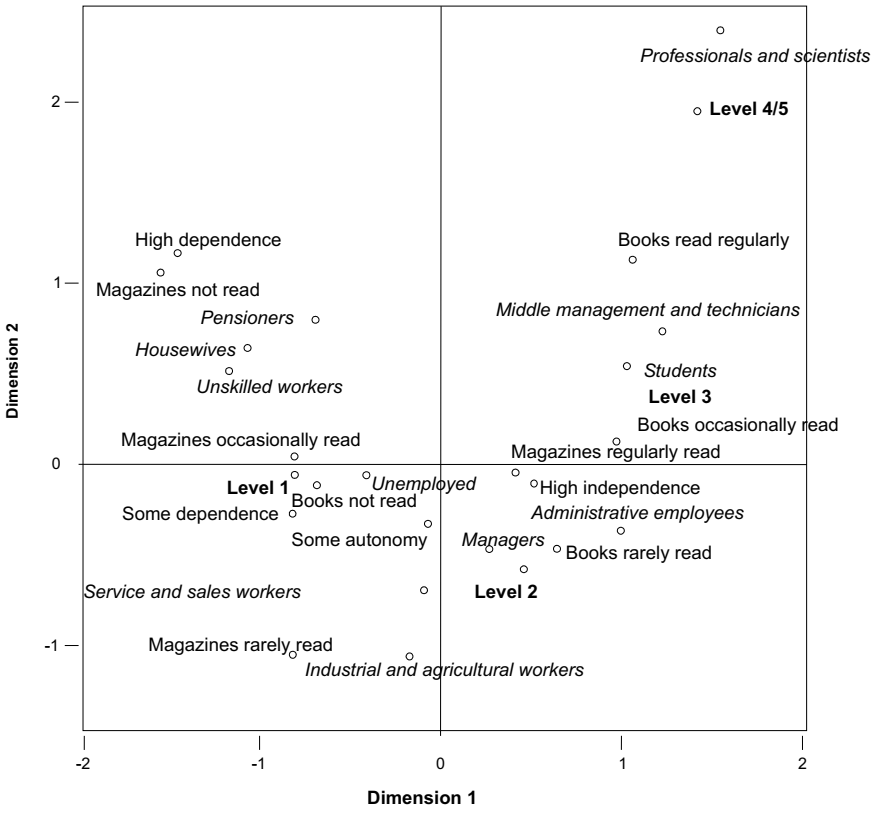

Figure 2.6 Social space of literacy (multiple correspondence analysis)
Source: IALS, Portugal database, 1998.

But it is not only access to employment and certain socio-occupational categories that is in question. The access to culture and information and the ability to act with autonomy in present-day societies is also clearly associated with literacy. Whereas individuals with high or intermediate literacy skills demonstrate high levels of autonomy and gain access to information and culture by regularly reading newspapers/magazines or books, those who have fewer skills and those who leave the sphere of work cannot fully exercise their citizenship: they depend heavily on others and have less access to culture and information. Thus, the results of this analysis clearly illustrate how literacy affects different dimensions in people's lives.

A second type of reflection is also required, specifically aimed at identifying the social factors in which literacy skills are anchored. This perspective of analysis appears to be as important as the one just explored: as literacy is a

fundamental resource in people's lives, it is necessary to understand the mechanisms that favour its development.

It may be recalled that literacy is a resource with specific characteristics: as it does not involve a certificate (that, once acquired, is valid indefinitely) but a set of skills, literacy can improve or, rather, deteriorate throughout life. It depends on the individual's everyday practices in different contexts and these may foster or, rather, inhibit its use, i.e. the process of updating and developing it. In theoretical terms, this manner of considering literacy implies that it is understood as being part of the system of dispositions that guide people's actions and that the same dispositions are not necessarily permanent, depending on the contexts and the practices developed in those contexts (Lahire, 2003b).[9]

Three multiple regression analyses were carried out, one for each literacy scale, in order to rank the relative weights of a set of factors that could be correlated with literacy in Portuguese society (table 2.2). Besides education (respondents' education and parents' education) and age, literacy practices in daily life and working life were also considered. The results confirm that literacy skills are influenced not only by education but also by family context, age and, especially, reading practices, whether in daily or working life. All these factors are important determinants of literacy proficiency.

When the set of independent variables mentioned above is combined in the same model, the percentage of explained variance in each literacy scale (prose, document and quantitative) is around 50% or more. As expected, respondents' education is the main determinant of literacy, in particular in the case of prose literacy. But it should be noted that although it is fundamental, individual's years of schooling does not cancel out the importance of the family of origin: the better educated the parents, the higher the individual's literacy proficiency tends to be (once again, especially in prose literacy). Whether on account of the available cultural and economic resources or family reading practices, everything indicates that in this field, as in others, situations pertaining to family socialisation play a role that cannot be ignored if one hopes to understand the unequal development of literacy skills that characterise Portuguese society.

Another striking aspect is the central importance of respondents' day-to-day contact with written information. That is, besides social origins and educational attainment regularly literacy practices are clearly linked to literacy skills as well. The results obtained particularly confirm the importance of reading newspapers and magazines, with close regression coefficients in the three scales, though they are slightly higher in quantitative literacy. These

9 This point relates to a broader theoretical debate on the relationship between *contextuality* and *transversality* within literacy research; it has provoked a certain amount of controversy (Goody, 1987a; Lave, 1988; Rey, 2002; Scribner and Cole, 1981; Street, 1993).

Table 2.2 Major determinants of literacy (prose, document and quantitative) proficiency (multiple regression)

	Literacy scale		
	Prose	Document	Quantitative
Summary of model results			
R^2 (% of variance explained)	0.592	0.531	0.517
R (multiple correlation coefficient)	0.769	0.728	0.719
Contribution of independent variables (beta)			
Respondent's education	0.301*	0.248*	0.251*
Father's education	0.200*	0.186*	0.181*
Age	-0.144*	-0.157*	-0.080*
Reading newspapers or magazines in daily life	0.250*	0.259*	0.313*
Reading books in daily life	0.116*	0.076*	0.083*
Writing at work	0.059*	0.073*	0.050**
Reading at work (index of practices)	0.089*	0.127*	0.112*
Calculation at work (index of practices)	-0.014	-0.053*	-0.001

Note: Variables excluded due to multicollinearity: mother's education and index of writing practices at work.
(*) p=0.01; (**) p=0.05

Source: IALS, Portugal database, 1998.

practices are of such significance that the value for the coefficients mentioned is very close to, or even greater than (in the cases of document and quantitative literacy), that of education. Reading books (especially important for prose literacy) and writing in everyday life present slightly lower but still statistically significant values.

The impact of what occurs in the work place cannot be ignored either. Special mention should be made to reading practices in a work context: they are positively associated with literacy skills in the three domains, particularly document literacy. Even so, the effects of literacy activities in this context are considerably less important overall. To a large extent, this may be due to the very limited demand for these practices in the work activities undertaken by the majority of the Portuguese population (Ávila, 2008: 201-209; Benavente *et al.*, 1996).

A final dimension that this analysis reveals relates to age. Even when all the variables presented above are taken into consideration, age maintains a specific contribution; a negative sign for the regression coefficients (beta) on the three scales indicates that literacy skills tend to be highest among the youngest. A conjecture for this "advantage" of the younger generation, may involve the shorter gap between them and their school studies and the difficulty that, in their turn, a significant proportion of the older respondents may have in keeping their skills up to date, considering not only what happens in the work sphere but also the weak penetration that lifelong education and training activities still have in Portuguese society.

There may be an additional explanation for the negative correlation between literacy and age. As has been seen, the analysis carried out has shown

that literacy practices in daily life emerge as fundamental to an understanding of variations in literacy skills. However, there are fairly few indicators available in the IALS in this field and they do not include certain reading and writing practices that are increasingly common in the everyday lives of the younger generation, e. g. all those practices that are sustained by information and communication technologies. For this reason, it may be the case that the effect of age may also be associated among the younger generation with the greater presence of reading and writing practices that have not been captured by this survey (as they are not included in the formal supports usually take into account in this surveys). Though these practices are neither very visible nor, as yet, assigned much value socially (Baudelot, Cartier and Detrez, 2000; Lahire, 2003a, 2004), one may hypothesise that they help develop the younger generation's literacy skills and keep them up to date.

In summary, it may be concluded from these results that, in Portuguese society, literacy patterns cannot be understood without paying attention to social origins (especially, family educational capital) and the level of educational attainment, as well as everyday ways of life: only if daily life includes literacy practices can a decline in skills acquired be prevented and new acquisitions in this area be guaranteed. All of this reinforces the importance of learning activities, whether informal, non-formal or formal, that can take place throughout life,[10] and draws attention to an understanding of literacy as a skill that is developed and kept up to date *through practice*: in a contemporary society, the ability to understand and use written information is anchored in the day to day practices and habits, which, in turn, strengthen and update the dispositions and skills sustaining them.

References

Ávila, Patrícia (2008), *A Literacia dos Adultos. Competências-chave na Sociedade do Conhecimento,* Lisbon, Celta Editora.

Barton, David, and Mary Hamilton (1998), *Local Literacies. Reading and Writing in One Community,* London, Routledge.

Baudelot, Christian, Marie Cartier, and Christine Detrez (2000), *Et Pourtant ils Lisent,* Paris, Editions du Seuil.

Beck, Ulrich, Anthony Giddens, and Scott Lash (1994, 2000), *Modernização Reflexiva. Política, Tradição e Estética no Mundo Moderno*, Oeiras (Portugal), Celta Editora.

10 Participation in adult education and training courses could not be taken into account in this analysis, since the only variable available in the IALS relates to individuals who have attended this kind of process in the past year (omitting all those who may have attended such courses in earlier years) and includes no specification of the scope or duration of the course.

Benavente, Ana, *et al.* (1996), *A Literacia em Portugal. Resultados de uma Pesquisa Extensiva e Monográfica*, Lisbon, Calouste Gulbenkian Foundation/Conselho Nacional de Educação.

Braudel, Fernand (1998, 2001), *Memórias do Mediterrâneo. Pré-História e Antiguidade*, Lisbon, Terramar.

Carneiro, Roberto (2001), *Fundamentos da Educação e da Aprendizagem. 21 Ensaios para o Século 21*, Vila Nova de Gaia (Portugal), Fundação Manuel Leitão.

Carvalho, Helena (2004), *Análise de Dados Qualitativos. Utilização da HOMALS com o SPSS*, Lisbon, Edições Sílabo.

Castells, Manuel (1996, 2002), *A Sociedade em Rede. A Era da Informação: . Economia, Sociedade e Cultura* (vol. I), Lisbon, Fundação Calouste Gulbenkian Foundation.

Castells, Manuel (1997, 2003b), *O Poder da Identidade. A Era da Informação: . Economia, Sociedade e Cultura* (vol. II), Lisbon, Calouste Gulbenkian Foundation.

Castells, Manuel (1998, 2003a), *O Fim do Milénio. A Era da Informação: . Economia, Sociedade e Cultura* (vol. III), Lisbon, Calouste Gulbenkian Foundation.

Cavaco, Cármen (2002), *Aprender Fora da Escola. Percursos de Formação Experiencial*, Lisbon, EDUCA.

Cavallo, Guglielmo, and Roger Chartier (eds.) (1997), *Histoire de la Lecture dans de Monde Occidental*, Paris, Éditions du Seuil.

Cipolla, Carlo M. (1969), *Literacy and Development in the West*, Harmondsworth, Penguin Books.

Conceição, Pedro, Manuel V. Heitor, and Bengt-Ake Lundvall (2003), "Towards a learning society", in Pedro Conceição, Manuel V. Heitor, and Bengt-Ake Lundvall (eds.), *Innovation, Competence Building and Social Cohesion in Europe*, Cheltenham, Edward Elgar.

Costa, António Firmino da (2003), "Competências para a sociedade educativa: questões teóricas e resultados de investigação", in AA. VV., *Cruzamentos de Saberes. Aprendizagens Sustentáveis*, Lisbon, Calouste Gulbenkian Foundation.

Costa, António Firmino da, and Patrícia Ávila (1998), "Problemas da/de literacia", *Ler História,* 35.

Dias, Helena Caninhas (1996), "Agricultores e literacia: relação com a informação institucional e vida quotidiana no Centro Litoral", in Ana Benavente, *et al.* (eds.), *A Literacia em Portugal. Resultados de uma Pesquisa Extensiva e Monográfica*, Lisbon, Calouste Gulbenkian Foundation/Conselho Nacional de Educação.

Enguita, Mariano Fernández (2001), *Educar en Tiempos Inciertos*, Madrid, Morata.

Furtado, José Afonso (2000), *Os Livros e as Leituras. Novas Ecologias da Informação*, Lisbon, Livros e Leituras.

Giddens, Anthony (1990, 1992), *As Consequências da Modernidade*, Oeiras (Portugal), Celta Editora.

Girod, Roger (1991), *Le Savoir Réel de l'Homme Moderne. Essais Introductifs*, Paris, PUF.

Gomes, Maria do Carmo (2003), "Literexclusão na vida quotidiana", *Sociologia, Problemas e Práticas,* 41.

Gomes, Maria do Carmo (2005), "Percursos de literacia", *Sociologia, Problemas e Práticas*, 47.

Gomes, Maria do Carmo, *et al.* (2002), "Novas análises dos níveis de literacia em Portugal: comparações diacrónicas e internacionais", in AA. VV. (ed.), *Sociedade Portuguesa. Passados Recentes, Futuros Próximos*, Lisbon, Associação Portuguesa de Sociologia (cd-rom).

Goody, Jack (1977, 1988), *A Domesticação do Pensamento Selvagem*, Lisbon, Editorial Presença.

Goody, Jack (1986, 1987b), *A Lógica da Escrita e a Organização da Sociedade*, Lisbon, Edições 70.

Goody, Jack (1987a), *The Interface Between the Written and the Oral*, Cambridge, Cambridge University Press.

Goody, Jack (2000), *The Power of Written Tradition*, Washington, Smithsonian Institution Press.

Havelock, Eric (1988, 1996), *A Musa Aprende a Escrever. Reflexões sobre a Oralidade e a Literacia da Antiguidade ao Presente*, Lisbon, Gradiva.

Iturra, Raúl (1990a), *A Construção Social do Insucesso Escolar. Memória e Aprendizagem em Vila Ruiva*, Lisbon, Editora Escher.

Iturra, Raúl (1990b), *Fugirás à Escola para Trabalhar a Terra. Ensaios de Antropologia Social sobre o Insucesso Escolar*, Lisbon, Escher.

Kirsch, Irwin, and Marilou Lennon (2005), "The ICT literacy framework", in Scott Murray, Yvan Clermont and Marilyn Binkley (eds.), *Measuring Adult Literacy and Life Skills. New Frameworks for Assessment* Ottawa, Statistics Canada.

Lahire, Bernard (1993), "Pratiques d' ecriture et sens pratique", in Martine Chaudron, and François de Singly (eds.), *Identité, Lecture, Écriture,* Paris, Centre Georges Pompidou.

Lahire, Bernard (2001, 2003b), *O Homem Plural. As Molas da Acção*, Lisbon, Instituto Piaget.

Lahire, Bernard (2003a), "La légitimité culturelle en questions", in Olivier Donnat (ed.), *Regards Croisés sur les Pratiques Culturelles*, Paris, La Documentation Française.

Lahire, Bernard (2004), "Formas de lectura estudantil y categorías escolares de la comprensíon de la lectura", in Bernard Lahire (ed.), *Sociología de la Lectura*, Barcelona, Editorial Gedisa.

Lash, Scott (1994, 2000), "A reflexividade e os seus duplos", in Ulrich Beck, Anthony Giddens, and Scott Lash (eds.), *Modernização Reflexiva. Política, Tradição e Estética no Mundo Moderno*, Oeiras (Portugal), Celta Editora.

Lave, Jean (1988), *Cognition in Pratice*, Cambridge, Cambridge University Press.

Lundvall, Bengt-Åke (2001), "Innovation policy in the globalizing learning economy", in Daniele Archibugi, and Bengt-Åke Lundvall (eds.), *The Globalizing Learning Economy*, Oxford, Oxford University Press.

Lyon, David (1988, 1992), *A Sociedade da Informação*, Oeiras (Portugal), Celta Editora.

Machado, Fernando Luís (1996), "Minorias e literacia: imigrantes guineenses em Portugal", in Ana Benavente, *et al.* (eds.), *A Literacia em Portugal. Resultados de uma Pesquisa Extensiva e Monográfica*, Lisbon, Calouste Gulbenkian Foundation/Conselho Nacional de Educação.

Murray, T. Scott (2003), "Reflections on international competence assessments", in Dominique Simone Rychen, and Laura Hersh Salganik (eds.), *Key Competencies for a Successful Life and a Well-Functioning Society*, Gottingen, Hogrefe & Huber Publishers.

Murray, T. Scott, Yvan Clermont, and Marilyn Binkley (2005), *Measuring Adult Literacy and Life Skills. New Frameworks for Assessment*, Ottawa, Statistics Canada.

OECD (2005), *Education at a Glance. OECD Indicators 2005*, Paris, OECD.

OECD and HRDC (1997), *Literacy Skills for the Knowledge Society. Further Results from the International Adult Literacy Survey*, Paris, OECD.

OECD and Statistics Canada (1995), *Literacy, Economy and Society*, Paris and Ottawa, OECD.

OECD and Statistics Canada (2000), *Literacy in the Information Age. Final Report of the Internacional Adult Literacy Survey*, Paris, OECD.

Olson, David R. (1994), *The World on Paper. The Conceptual and Cognitive Implications of Writing and Reading*, Cambridge, Cambridge University Press.

Reich, Robert B. (1991, 1993), *O Trabalho das Nações*, Lisbon, Quetzal Editores.

Reis, Filipe (1995), *Saberes e Contextos de Aprendizagem. Práticas Escolares e Usos Quotidianos da Escrita,* (Master's dissertation), Lisbon, ISCTE.

Reis, Filipe (1997), "Da antropologia da escrita à literacia. Algumas reflexões sobre o Estudo Nacional de Literacia", *Educação, Sociedade e Culturas,* 8.

Rey, Bernard (1996, 2002), *As Competências Transversais em Questão*, Porto Alegre (Brazil), Artmed.

Rychen, Dominique Simone (2003), "Key competencies: meeting important challenges in life", in Dominique Simone Rychen, and Laura Hersh Salganik (eds.), *Key Competencies for a Successful Life and a Well-Functioning Society*, Gottingen, Hogrefe & Huber Publishers.

Rychen, Dominique Simone, and Laura Hersh Salganik (eds.) (2003), *Key Competencies for a Successful Life and a Well-Functioning Society*, Gottingen, Hogrefe & Huber Publishers.

Schienstock, Gerad (2001), "Social exclusion in the learning economy", in Daniele Archibugi, and Bengt-Åke Lundvall (eds.), *The Globalizing Learning Economy*, Oxford, Oxford University Press.

Scribner, Sylvia, and Michael Cole (1981), *The Psychology of Literacy*, Cambridge, Harvard University Press.

Sebastião, João (1996), "Relações dos jovens com a literacia: contextos de socialização em meio operário", in *et al.* (eds.), *A Literacia em Portugal. Resultados de uma Pesquisa Extensiva e Monográfica*, Lisbon, Calouste Gulbenkian Foundation/Conselho Nacional de Educação.

Statistics Canada and OECD (2005), *Learning a Living. First Results of the Adult Literacy and Life Skills Survey*, Ottawa and Paris OECD.

Stehr, Nico (1994), *Knowledge Societies*, London, Sage Publications.
Street, Brian V. (1993), "Introduction: the new literacy studies", in Brian V. Street (ed.), *Cross-cultural Approaches to Literacy*, Cambridge, Cambridge University Press.
Teixeira, Leonor, and Miguel Fontes (1996a), "A literacia na vida quotidiana dos idosos: duas freguesias do centro histórico de Lisboa", in *et al.* (orgs.), *A Literacia em Portugal. Resultados de uma Pesquisa Extensiva e Monográfica*, Lisbon, Calouste Gulbenkian Foundation/Conselho Nacional de Educação.
Teixeira, Leonor, and Miguel Fontes (1996b), "Literacia numa vila do interior: trabalhadores fabris e do pequeno comércio", in Ana Benavente, *et al.* (eds.), *A Literacia em Portugal. Resultados de uma Pesquisa Extensiva e Monográfica*, Lisbon, Calouste Gulbenkian Foundation/Conselho Nacional de Educação.
Toffler, Alvin (1990, 1991), *Os Novos Poderes*, Lisbon, Livros do Brasil.

Chapter 3

Communication practices in the network society

Gustavo Cardoso, Maria do Carmo Gomes, and Cristina Palma Conceição

Introduction

The rapid changes that have been taking place on a global scale in the fields of technology, the economy, culture, communication, politics and interpersonal relationships are regarded by Manuel Castells as being part of the transition of industrial societies to information-based network societies.

This process of change is distinct and has specific configurations in each socio-cultural context and is both global and irreversible. For anyone moving in knowledge-based societies, there are new social integration challenges, new skills to be acquired, new technologies to master, and new forms of civic and social participation, to which they must adapt or that they have to adopt. For several reasons further explained on this chapter, Portugal is at a decisive juncture in its history with regard to many of these aspects.

The novelty of the network society lies essentially in the accelerated development of microelectronic technologies and the social effect of their use on interpersonal relations and the interaction that they establish with the different institutions making up our societies.

The idea was to analyse communication practices in the network society in Portugal,[1] based on statistical data obtained from a survey of a sample of

1 The theoretic conceptualisation behind the presentation of the empirical data is based on the book by Manuel Castells *et al.* (2003), which analysed the network society in Catalonia. In Portugal, the network society was analysed by Gustavo Cardoso, António Firmino da Costa, Cristina Palma Conceição and Maria do Carmo Gomes as part of a project at CIES from 2002 to 2004. The results came out in a book published in the meantime (Cardoso *et al.*, 2005). The study resulted in a multiple genesis - the project at the CIES post-graduate courses (in the Master's Programme in Communication, Culture and Information Technologies), and participation in international R&D networks - as part of cooperation established in 2002 with Manuel Castells and Imma Tubella at Universitat Obierta de la Catalunya.

2,450 people representing the Portuguese population. We analysed what Portuguese people do today, what they work on, how they live, who they relate with, what they think, who they communicate with, how they participate in politics, how they build their identity and how they spend their time.

Our challenge is to analyse how people communicate in a society in transition to a network society, as in Portugal.

The network society in transition

This work clearly illustrates the profound changes that took place in contemporary societies in the late 20th century in terms of technology, the economy, culture, communication, politics and everyday life in general, and also recounts some of the theoretic conceptualisations on the subject. Manuel Castells is one of the analysts who have most intensely studied the ongoing changes, aiming to understand what he calls the transition to a network society, an emerging form of social organisation enabled by new microelectronic technologies and characterised by more complex and flexible relations at a wide variety of levels (Castells, 2002, 2003a, 2003b, 2004a; Mitchell, 2003).

New information technologies and especially the internet have been attributed a key role in the emergence and affirmation of the network society. The network connection provided by the world wide web is a basic tool in the development of new kinds of relationship between people, companies and institutions, allowing coordination and effectiveness that were not possible before. But Castells also stresses that, although the internet is one of the main bases for new forms of societal organisation, it is far from being regarded as the final cause of the changes that have taken place. New technologies naturally have an important impact on social relations, but they are also the product of these same relations and their appropriation is always based on an adaptation to the prevailing needs, interests and values in each context (Cardoso, 1998; Dutton, 1999; Wellman and Haythornwaite, 2002; Katz and Rice, 2002a, 2002b; Woolgar, 2002).

At the same time as the introduction of the internet there were other important changes, especially in the more developed countries. Examples of these changes are the emergence of new economic activities, the rise of a group of highly-qualified professionals whose knowledge is based not only on advances in science and technology but also on a body of know-how indissociable from the new management tools, the expansion of new forms of governance and new social movements, and the reconfiguration of the media and their articulation on a global scale. Equally clear are some even more pressing changes in people's daily lives, such as the appearance of new cultural practices, the reconfiguration of demographic evolution patterns, an increase in new models of family relationships and growing urban concentration. In other words, while some aspects of these changes seem to be macro-social, others appear in the

daily actions of anonymous citizens, showing that the network society is also built on individuals and on the particular way in which they have been taking on the new challenges and tools at their disposal for managing new forms of relationship at a wide variety of levels. In this context, there have been a number of different wake-up calls to the emergence of renewed forms of social exclusion based not only on the issue of ownership but also on that of other central resources of the network society, such as knowledge and the resources needed to build new forms of information literacy (Cardoso, 2006).

The transition to the network society has therefore taken different forms in different parts of the world or between different social strata. It is far from being a mere reproduction of the organisation processes generated in Silicon Valley, so often regarded as the icon of the current changes. "In fact, there is no one network society (…). In the same way as industrial society was not a copy of Britain in the 19th century and was very different in Japan and the in United States, in France and in Sweden, the network society develops in each country according to the culture, history, identity and way of life of that country" (Castells, 2005).

Let us look, for example, at the development models adopted in the United States and in Finland. In both cases, we find wide use of information technologies and burgeoning new economic activities supported by investment in innovation and in training human resources. But the understanding of the role of the state and the importance attributed to social cohesion are very different. Unlike in California, Finland favours maintaining high levels of taxation and a strong welfare state, resulting in high levels of social protection and active defence of the national identity. In other contexts, the differences have to do with the maintenance of certain cultural traits, such as dense networks of sociability and family support characterising societies like those in Catalonia, unlike the USA. In other words, while some aspects are regarded as common denominators of the emerging development models - the organisation of economic, scientific or everyday activities around networks of relationships based on electronic technologies - others appear as particular appropriations or derivations of the culture and history of each region, though this is not necessarily an obstacle to the affirmation of the network society.

The network society in Portugal

An analysis of Portuguese society in its transition to the social and technological dimension of the network society is therefore doubly interesting.

In recent years, Portugal has been going through an important modernisation process, reflected in such diverse fields as the opening and restructuring of the economy, the development of science, the spread of new technologies, the schooling of the new generations, socio-professional re-composition, feminisation, progressive tertiarisation of labour, the urbanisation of the population and of

spaces, the change in demographic patterns and family life, the democratisation of the political structures, the liberalisation of the media, and the mediatisation of public spaces. These changes are definitely substantial and the rate of change cannot have been paralleled in many countries, at least in recent times.

However, this modernisation process has been far from linear or not free of obstacles or contradictions. Above all, it is far from over. Any analysis of many of the available indicators in the different dimensions mentioned shows that the country still has a long way to go to catch up with European or western development standards. The rapid rate of change can be explained not only by the dynamics triggered but also by the weakness of the starting point. There are situations in which, in spite of the high growth rates, the levels achieved are still much lower than European averages.

Portugal is thus at a crossroads, associating traits and dynamics of modernity with the remains of a more archaic society that tend to persist and stand in the way of some of the current changes. On one hand, it is facing the new challenges and paradoxes of today's societies - an aging population, the emergence of new forms of poverty, the crisis of the democratic structures or the mediatisation of politics. On the other hand, it has to deal with the backwardness caused by the maintenance of old social structures and dispositions, which are obstacles to the necessary and much spoken-of convergence process. Examples of this backwardness are economic specialisation in low-tech sectors, ongoing deficient levels of qualifications in the population, high school dropout rates, inadequate social support and limited development of the new middle classes.

The standards of family life are fast catching up with those in northern Europe, with growing female emancipation and the emergence of new forms of conjugality, but there are still differences in pay between the sexes and the division of housework is still highly unfavourable to women. Levels of consumption are rising significantly and there is a growing range of cultural activities to choose from, but household indebtedness is rising and many cultural practices are restricted to certain social strata. These are just some of the examples that enable us to talk of Portugal as a scenario of "processes of an unfinished modernity" (Machado and Costa, 1998), where innovation and an attachment to old ways intermingle and overlap.

This duality also accompanies the transition to the network society as, in terms of generation, the younger generations have higher internet use rates than previous generations, cultural practices using technology more frequently and levels of skills and output that come closer to the European averages.

It is a society where organisational structures and production in networks are springing up and living side by side with the as yet dominant models typical of industrial societies. This is particularly evident when we look at some of the most common indicators in the field of technology. According

to data for 2000, the number of internet hosts per 1, 000 inhabitants in Portugal is around 25% of those achieved in advanced economies (UNDP, 2001). On the other hand, the use of mobile phones has reached very high levels, very close to those in the Scandinavian countries for example (UNDP, 2003).

As for the use of the internet, according to data for 2003 from a representative sample of the population in mainland Portugal, around 29% of the Portuguese say that they are direct, regular users of this new technology, plus close to 6% who say that they have accessed the web more sporadically (Cardoso *et al.*, 2005). Although data from other sources do not coincide entirely for reasons of methodology, they confirm this scenario to a large extent and also show a significant growth in recent years in Portugal. According to UMIC data, the internet utilisation rate almost doubled from 2000 to 2003.

However, the levels achieved are still far below those in other European countries, especially in northern Europe, where the internet is used by more than half the population, or in the United States, where it is used by nearly 70% (European Commission, 2002). In Portugal most of the population has not yet embraced the worldwide web, and those who have begun to include the internet in their daily lives have a particular social profile, which leads us not only to expect some growth opportunities, but also some limits to the widespread dissemination of the technology in the foreseeable future.

However, thanks to this unequal distribution of the literacy required to use the internet and its concentration in an elite, Portugal has a ratio of use of available internet access that places us in fourth place in the European Union, on a par with the United Kingdom and behind only Denmark, Norway and Sweden (Cardoso, 2005). In other words, those who have the required computer literacy make intensive use of this technology and include it in its multiple dimensions of possible daily uses.

Social profile of internet users and the way they use it

Portuguese people's contact with the internet - generally scarce and recent in spite of considerable growth — is far from being uniform in the different segments of the population. Familiarisation with this technological resource is closely associated with the skills and predisposition more often found in young people and people with higher qualifications (Rodrigues and Mata, 2003; Cardoso, 2005). It is quite interesting to note the independent nature of the influence of these two variables, as shown in table 3.1.

In the younger age groups, the absence of significant academic qualifications does not necessarily mean no internet use. Although it is relatively rarer, use by poorly qualified young people seems to be clearly favoured by early socialisation with the medium or by opportunities for access through school or friends. Among older people, the absence of significant academic qualifications strongly inhibits contact, necessarily later in life, with this new

technology. But if these qualifications exist, age is not an insurmountable obstacle. Among university graduates aged 50 and over, use of the internet is above the national average.

It is the middle-aged users and those with the highest qualifications who have included the internet most in their daily lives, in spite of the significant spread of more occasional use of the technology among younger people. This may be due to the fact that older and more qualified people access the web as part of their work, which is a more propitious environment for continuous access than schools or other places like cybercafés or public libraries, where young people often go to access the internet.

In any case, in generic terms, home is the main point of internet access for the Portuguese, unlike in other, more developed countries where most people go online at work or school. However, the data collected confirm that familiarisation with this new medium tends to begin outside the home - at work for older people and at school or among friends for younger people - meaning that these places play an essential role in the growth of internet use in Portugal, especially among people with fewer monetary resources and lower qualifications.

With regard to online activities, we find that, in spite of intense use for information purposes, which is the choice of the majority of Portuguese, the internet in Portugal, as in other countries, is far from being just a means of circulating information. Especially for young people, it is a place for leisure, entertainment and socialising. For older people with higher academic qualifications, it is used for practical, professional and cultural purposes (table 3. 2). People frequently spend their leisure time browsing on the internet, often with no predefined purpose, very similar to window shopping in the street or at a shopping centre.

Communication habits: the impact of the internet

As we have seen, use of the internet widens the gap between two clearly identified groups in Portuguese society. On one hand, we have older people with low academic qualifications, unqualified jobs and fewer monetary, cultural and information resources who are often those who do not use the internet and constitute the majority of the Portuguese population. On the other hand, a substantial part of the Portuguese with higher academic qualifications, more qualified jobs and/or young people who have (and use) a number of skills to enter into modern life more easily - use the internet as a daily tool. They join collective activities, develop a series of communicative habits, have the equipment they need to use more sophisticated media and have more numerous and dense sociability networks, among other dynamics that make up what have been called information or network societies.

Table 3.1 Internet use by level of schooling and age, 2003

(percentages)

Level of schooling completed	Age group		
	15-29 anos	30-49 anos	50 e mais anos
Basic education or less	44.1	10.4	1.8
Secondary education	74.7	57.1	40.0
Higher education	90.7	79.2	37.0

Note: percentage of users in each category; p. 01 in all categories.
Source: CIES, Survey *Network society in Portugal*, 2003 (p. 01 in all categories).

Table 3.2 Field of internet use by age group and level of schooling, 2003

(percentages)

	Leisure	Practical	Socialising	Information (cultural and educational)	Information (news)	Occupational	technological	Business	Information (politics and trade union)
Age group		p<0.01	p<0.01			p<0.01			p<0.01
15-29 anos	81.8	49.8	64.1	47.2	45.3	37.8	30.8	25.2	6.3
30-49 anos	76.8	76.3	50.9	49.6	47.1	55.7	31.1	30.3	16.7
50 e mais anos	74.4	74.4	27.9	46.5	53.5	34.9	15.9	25.6	11.6
Level of schooling		p<0.01		p<0.04		p<0.01	p<0.05	p<0.01	p<0.01
Superior	77.8	72.9	56.5	54.8	48.8	64.7	31.4	33.9	20.6
Secundário	78.4	68.0	60.9	48.2	45.0	40.6	34.9	30.6	7.3
Básico	81.7	44.6	55.5	42.8	45.9	31.4	25.1	18.9	5.4
Total	79.6	59.9	57.6	47.9	46.4	43.4	30.0	26.7	10.1

Note: percentage of users who said they had at least one activity in the field.
Source: CIES, Network society in Portugal Survey, 2003.

This gap holds within it Portugal's dynamics in the transition to the network society. And if some warnings of the dangers have been given with regard to the weaknesses of this new form of social organisation, it is important, even so, to refute some more pessimistic arguments with some empirical data.

In Castells' conceptualisation of the network society, one of the most important dimensions is an analysis of communicative practices (Castells *et al.*, 2003). He feels that this analysis should consider a wide range of variables that permeate classic practices in relation to the media. In research in Portugal (Cardoso, 2006) analysis of this dimension was also extended from the same perspective as Castells. And this is why communication habits include any

form of social relationship based on communication (interpersonal, by phone, through more conventional mass media like TV, radio and newspapers or technological web communications like email, chat rooms or newsgroups). It is at this starting point that we begin our analysis of the situation in Portugal in this regard.

Interpersonal communication and sociability

One conclusion stands out from the research in Portugal and that is that internet users always indulge in these communication habits more intensely and frequently than those who do not use this technology. In fact, contrary to what one would imagine and often reported in the media as the image of those who use this technology, the internet does not confine people to isolation and solitude; it rather extends their contacts with other people (family and friends) and increases both the local and global density of these contacts. This is why it is the internet users who say that they have felt less depressed, isolated or despondent in the last year.

The internet broadens and intensifies the possibilities of contact, especially those with people who are further away. This opening up to global contacts has a special meaning in Portugal (Cardoso *et al.*, 2005).

The southern European countries like Portugal where personal and phone contacts with family and friends are of significant value, the internet has made it possible to increase these contacts. With the exception of parents, with whom people say they have frequent personal contact, all other contact can be intensified with the internet.

As a means of communication, the internet provides Portuguese users, as it does Catalonian users (Castells *et al.*, 2003), with a new form of contact to add to existing traditional means — interpersonal relations and the telephone. The latter are, indeed, the means of contact used by most Portuguese, and there has been no mass transfer from the telephone to the internet for communication.[2]

Instead of suffering abrupt reductions with the introduction of the internet in people's lives, the dense, pre-existing sociabilities in Portuguese society have intensified and grown. This is certainly, one of the specific characteristics of southern European contexts in their transition to the network society. The internet is thus a way of strengthening social relations and not one of weakening them, as some analysts expected.

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2 There is also the high rate of penetration of mobile phones in Portugal (more than 70% of the population) especially in the younger age groups.

Communication and daily life

However, if we add all the different daily practices to the sociability networks and interpersonal contact, we once again find that it is the internet users who have the greatest diversity and frequency of activities.

With the exception of the hegemonic habit of watching television (almost 100% of the Portuguese say they do it, with a slight distinction between internet users and non-users), it is those who use the internet who also listen to more radio, read more newspapers, go to the cinema more, read more books, go to more museums, go to more shows, have more hobbies, etc. They are therefore a set of people with a wider spectrum of interest who have a wider diversity of communicational, informative, recreational and cultural practices. The internet is often a source of information about a number of interests and can be used to book tickets, make travel arrangements and set up meetings with friends, among others. Once again, a new form of information has been added to pre-existing interests and has facilitated some of these activities.

The activities that the Portuguese prefer least are those involving social and political participation, such as attending demonstrations or trade union meetings, political parties or associations, practising a hobby and more erudite activities — going to the theatre, opera or concerts or going to museums, exhibitions or conferences. None of them has reached 1/4 of the Portuguese population.

These habits show significant changes in Portuguese peoples' daily lifestyle with a wider variety of activities and interests, especially in younger age groups, incorporating new information and communication technologies.

In addition to these changes, it is important to understand the impact of internet use on other communication practices. Does the internet result in changes in communication practices in daily activities involving the use of other media?

In fact, the main conclusion is that the internet does not cause any significant changes in people's daily activities. Most Portuguese internet users who said that they do each of the activities analysed said that they remained the same after they began to use the internet. However, when there are changes, they are mostly reductions in these activities, with a few exceptions. The greatest reduction was in watching television (19.2%) or activities using the TV set, i.e. watching DVDs or videos.

If people's daily lives involve multiple communication channels and practices with a wider choice of time, place and form of interaction, one thing is clear and that is, when we compare internet users and non-users, the users are the ones who use all the available technological equipment, show greater social, civic and political involvement, enjoy broader identity references, and have greater self-sufficiency in different individual and social spheres, such as work, health, and politics, among others.

Table 3.3 Communication habits and daily life by internet use, 2003 (%)

(percentagens)

Communication habits and daily	Users (n=711)	Non-users (n=1739)	Total (n=2450)
Watching TV	98.9	99.4	99.3
Watching videos or DVDs	79.3	27.3	42.4
Going out	96.4	83.2	87.1
Listening to the radio	95.1	82.6	86.2
Listening to music	97.2	70.0	77.9
Reading newspapers or magazines	94.0	70.8	77.5
Reading books	78.5	30.5	44.4
Doing nothing	40.5	38.2	38.9
Going to bars, restaurants or clubs	85.0	49.9	60.1
Going to the cinema	75.7	23.1	38.4
Going to the theatre, opera or concerts	32.8	7.5	14.9
Going to museums, exhibitions or conferences	37.7	8.2	16.8
Meeting family or friends	98.7	91.8	93.8
Playing at the computer or game console	57.2	6.8	21.5
Talking to people at home, playing with the children, etc.	91.0	81.1	84.0
Watching shows or sports	57.8	27.0	36.0
Sports or some physical activity	49.0	11.7	22.5
Attending demonstrations or trade union meetings, political parties, associations, etc.	11.0	2.6	5.0
Going to place of worship	38.5	52.6	48.5
Going to traditional events, festivals or fairs	63.2	50.7	54.4
Practising a hobby	24.7	9.2	13.7
Working at home	31.0	12.4	18.8

Source: CIES, Survey *Network society in Portugal*, 2003.

As this group is also characterised by specific sociographic dynamics such as the fact that they are younger, better educated and more highly qualified with better social and cognitive resources at their disposal, we can expect demographic changes to facilitate medium-term development into an information society based on a network society and knowledge economy in Portugal.

Communication, media and the internet

Looking at communication practices in their classic sense, i.e. those that involve the mass media such as television, radio, the press and the internet, there are some noteworthy characteristic traits in Portuguese society.

One is the dominant Portuguese habit of watching television. The people's next favourite medium is the radio followed by newspapers in third place. This is the order of preference for the three traditional media.

If we go deeper into the transition to a network society in Portugal, there is a new duality in the field of representations on the media and their generational dimension.

If we base our analysis a situation common to several developed societies — the arrival of computerisation at a shared moment in history — we

Table 3.4 Most interesting activity by age group, 1st choice

(percentages)

Activity	Age group			
	15-25	26-37	38-50	>50
Playing video games	6.7	0.7	0.6	0.1
Talking on mobile phone	6.7	4.3	1.9	1.0
Listening to music on CD	15.3	9.5	4.9	1.6
Listening to the radio	9.3	9.5	9.3	7.1
Watching television	41.2	54.9	66.0	80.4
Reading newspapers	3.9	8.3	11.3	8.3
Using the internet	16.7	12.8	5.8	0.7
Dk/nr	0.4	0.0	0.2	0.7
Total	100.0	100.0	100.0	100.0

Source: CIES, Survey *Network society in Portugal*, 2003.

may find similar results to those found in Portugal in other societies (table 3.4).

We find that, when asked about how interesting they find different information and communication technologies, different generations have some points in common but also give different answers enabling us to identify singular identity references in relation to the media. Although television is the first choice of all the different generations mentioned here, we also find that the generations who had contact with the internet in their childhood and adolescence have a much lower opinion of television than those who came into contact with computerisation later in life (41.2% *versus* 80.4%).

Where second place in terms of interest is concerned, we can divide the generations into two groups — those who came into contact with personal computers when they were children and who consider the internet to be the second most interesting technology and those who did not use personal computers and chose newspapers.

We can therefore form two clearly differentiated groups — those aged from 15 to 37 and those who, in 2003, were aged over 38.

Another difference is the way in which different generations address sound technologies like radio and CD. There seems to be a generation gap based on their individual choice of music. In other words, while the generation from 26 to 37 is on the frontier and lends equal value to the radio and the choice of music available on CD, the 15-25 generation clearly prefers the individual choice of music provided by CD, music channels on TV and mp3.

The older generations regard the radio and its predefined music and distinct technology as a good choice, although close to reading newspapers.

The 15-25 generation is also the one that lends most importance to music, with about 25% of their choices going to listening to music on CD and the

radio. They are also the only ones who consider video games and mobile phones on the same level of interest. Only the generation from 26 to 37 is somewhat similar in the interest they give to mobile phones.

A third dimension in the analysis of the media is use of these on the internet. Here, newspapers take first place, ahead of radio and television. Television is the medium mentioned least by internet users as a source of online information. (All these practices are mentioned by less than 1/5 of users, and is not one of the activities preferred by cybernauts when using the internet). We must also remember that most television websites offer contents associated with information, such as permanent news updates with a certain degree of possible interactivity, including surveys and competitions, and little else. It is also worth noting that the Portuguese do not participate much in interactive programmes by any means (mail, e-mail, phone, text message or internet).

However, regardless of the fact that the Portuguese do not use the traditional media's websites much, a vast majority (around 3/4) of internet users trust the contents made available on the worldwide web. These figures are quite close to those found in the general population for television, radio and newspapers. People certainly trust the information on television most. These figures are clearly associated with their media consumption habits. In the research done in Catalonia, where the figures for watching television were significantly lower, the Catalan population's trust in this medium was also lower. The figures were higher, for example, for the newspapers, which are read more in Catalonia than in Portugal. Here we can argue that the effect of the Portuguese people's proximity to television strongly influences their trust in the information it broadcasts. The same goes for the internet, when we look at users' levels of trust compared to that of non-users. That of non-users is much lower, either because of unfamiliarity or distance from this medium.

In any case, the internet is considered a reliable source of information by a vast majority of the population, even though they have not yet used it or do not use it often.

Conclusion

In Portugal, as we could argue for most developed contemporary societies, there is a clear articulation between the internet and other means of communication and there is no replacement or annulment of certain communication practices.

Internet users are more multi-tasking, i.e. they use the internet while the television is on, providing background sound and images, and they interconnect both uses according to preference or the appearance of more appealing contents on one or the other. This attitude does not seem to appear in non-users of the internet.

In the network society, the organisation of the media system, and therefore also of our communication practices, revolves around two different networks of interactivity. There is a highly interactive network that has the internet as its central hub and the other, with low interactivity, focussing on television. However, these networks communicate with each other and with other media by means of interpersonal communication technologies, like the phone, text messages or email.

It is because of the appearance of the internet and our appropriation of it that there is a not only new media system but also a social network organisation that is the fruit of a technology that results in a certain specifically contextualised social appropriation, of a given technological relationship with other media and platforms, and of an economic organisation that characterises the contemporaneity of our world and our lives.

References

Cardoso, Gustavo (1998), *Para uma Sociologia do Ciberespaço. Comunidades Virtuais em Português*, Oeiras (Portugal), Celta Editora.

Cardoso, Gustavo (2004), "Trends and contradictions in the broadcasting system: from interactive to networked television", in Fausto Colombo (ed.), *TV and Interactivity in Europe. Mythologies, Theoretical Perspective, Real Experiences,* Vita e Pensiero, Milano.

Cardoso, Gustavo (2006), *Os Media na Sociedade em Rede. A Cidadania entre Montras, Filtros e Notícias,* Lisbon, Calouste Gulbenkian Foundation.

Cardoso, Gustavo, *et al.* (2005), *A Sociedade em Rede em Portugal*, Porto, Campo das Letras.

Castells, Manuel (2002), *A Sociedade em Rede. A Era da Informação. Economia, Sociedade e Cultura,* Lisbon, Calouste Gulbenkian Foundation.

Castells, Manuel (2003a), *O Poder da Identidade. A Era da Informação. Economia, Sociedade e Cultura*, Lisbon, Calouste Gulbenkian Foundation.

Castells, Manuel (2003b), *O Fim do Milénio. A Era da Informação. Economia, Sociedade e Cultura,* Lisbon, Calouste Gulbenkian Foundation.

Castells, Manuel (2004a), *A Galáxia Internet. Reflexões sobre Internet, Negócios e Sociedade,* Lisbon, Calouste Gulbenkian Foundation.

Castells, Manuel (ed.) (2004b), *The Network Society. A Cross-Cultural Perspective,* London, Edward Elgar.

Castells, Manuel e Himanen, Pekka (2002), *The Information Society and the Welfare State. The Finnish Model*, Oxford, Oxford University Press.

Castells, Manuel, *et al.* (2003), *La Societat Xarxa a Catalunya*, Barcelona, Editorial UOC.

Dutton, William (1999), *Society on the Line. Information Politics and the Digital Age,* Oxford, Oxford University Press.

EC — European Commission (2002), *Towards a European Research Area. Science, Innovation*, Brussels, European Commission - Research DG.

Katz, James E., and Ronald E. Rice (2002a), "Syntopia: access, civic involvement, and social interaction on the net", in Barry Wellman, and Caroline Haythornthwaite, *The Internet in Everyday Life*, Malden/Oxford/Melbourne/Berlin, Blackwell.

Katz, James E., and Ronald E. Rice (2002b), *Social Consequences of Internet Use. Access, Involvement, and Interaction,* Cambridge, MIT Press.

Machado, Fernando Luís, and António Firmino da Costa (1998), "Processos de uma modernidade inacabada", in José Manuel Leite Viegas, and António Firmino da Costa, (eds.) *Portugal, que Modernidade?,* Oeiras (Portugal), Celta Editora.

Mitchell, William J. (2003), *Me++. The Cyborg Self and the Networked City,* Cambridge, MIT Press.

OIC — Observatory for Innovation and Knowledge (2003), *Treading the Path to the Knowledge Society. Patterns of ICT Diffusion in Portugal*, Lisbon, Innovation and Knowledge Society Unit (UMIC).

Oliveira, José Manuel Paquete de, Gustavo Cardoso, and José Jorge Barreiros (eds.) (2004), *Comunicação, Cultura e Tecnologias de Informação*, Lisbon, Quimera Editores.

Rodrigues, Maria de Lurdes e João Trocato da Mata (2003), "A utilização do computador e da internet pela população portuguesa", *Sociologia, Problemas e Práticas*, 43.

UNDP (2001*), Human Development Report 2001. Making New Technologies Work for Human Development*, New York, United Nations.

UNDP (2003), *Human Development Report 2003. Millennium Development Goals. A Compact Among Nations to End Human Poverty*, New York, United Nations.

Woolgar, Steve (ed.) (2002), *Virtual society? Technology, Cyberbole, Reality*, Oxford, Oxford University Press.

Chapter 4

Scientific culture and modes of relating to science

António Firmino da Costa, Cristina Palma Conceição, and Patrícia Ávila

Scientific culture in the knowledge society

How can we characterise the *scientific culture* of the Portuguese? How does it compare to the scientific culture prevailing at the broader European scale? And how does this scientific culture relate to what is nowadays generally known as the *knowledge society*?

Our goal here is to provide some answers to these very questions using, as a basis, a number of research projects undertaken by CIES research teams in the area of the sociology of science. Other contributions within the field of social studies of science will also be taken into account.

The starting point, however, requires a certain amount of prior conceptual clarification, although this shall be kept to a bare minimum. Other brief theoretical or methodological considerations will also be included at later stages, whenever necessary.

One can have practically endless debates on the theoretical bases and implications of the *knowledge society* concept. This concept has been used both within different contexts and meanings. We could to go back, for example, to earlier analyses such as those carried out by Touraine (1969) or Bell (1973) on the "post-industrial society". However, it is through the works of authors such as Drucker (1993) or Stehr (1994), among others, that "knowledge society" as a concept and expression emerges in an explicit manner. Notwithstanding differences in assumptions and analyses, these authors see the notion of the knowledge society as occupying a central position in describing today's world and its dynamics.

Sociologists, economists, innovation theorists and experts on international organisations have made important contributions to this topic, whether using this terminology or whether preferring others. Sometimes they concentrate on the conceptual differences; on other occasions there is agreement on the meaning. Besides the "knowledge society", it is possible to identify

concepts on this topic such as the "knowledge-based society" (Soete, 2000; Lindley, 2000), the "information society" (Lyon, 1988; and many others), the "learning society" (Conceição, Heitor and Lundvall, 2003) or the "network society" (Castells, 1996). There are also concepts that focus on central components or agents of this changing society: "abstract systems and experts" (Giddens, 1990), "symbolic analysts" (Reich, 1991), and "the creative class" (Florida, 2002), among others. In fact, these ideas underline different aspects of the contemporary world. But they are complementary and profoundly interconnected.

In this text, we recognise the notion of the *knowledge society* as giving conceptual expression to the widespread evidence that today's highly formalised and codified knowledge produced by experts in specialised institutions, with highly sophisticated procedures, represents a central, highly structural and broadly comprehensive element in the forms of organising society and in its change dynamics.

This formal knowledge is strongly present in technological innovation, economic functioning, institutional regulation, new generations socialisation, individual qualification, consumption, lifestyles, the arts and the media, environmental, biotechnological, military and other risks, along with the responses to them, as well as the contemporary dynamics of social change in general.

Science is one of the most important components of the knowledge society. This importance is usually seen as due to the growing social impact of science-based technologies in the different spheres of social life, particularly the economy, health and communications.

But there is more to it than just that. This importance is also due to the position that science holds in today's educational systems as well as in the culture of contemporary society — understanding *culture* in a broad sense, as the *web of symbols and meanings* built in the constitution of human societies.

Symbols and meanings are intrinsic elements of social phenomena at different levels. A few we may mention include: personal and group identities, individual social action, interpersonal or media communication processes, and institutionalised systems of rules. Culture in particular encompasses *highly codified forms* of practices and acts, knowledge and skills, values and norms. The basic attributes of these webs of meanings and systems of symbols are *historicity* (cumulative and transformational), *diversity* (of modes and connections) and *creativity* (of new forms and emerging meanings).

Scientific culture — an expression that has been expanding in Portuguese society for about twenty years — can thus be seen as an integral component of culture. In this sense, scientific culture emerges in the present-day social landscape not only as *one component of culture among others* (e.g. artistic, literary, philosophical, legal, political, religious, and media cultures) but also as *a highly specific component of culture* . From the outset, these specificities are

related to the knowledge content and the cognitive processes characteristic of the sciences. But they are also related to the fact that, as mentioned, the sciences are involved, in a particularly direct and influential way, in the building of the knowledge society itself.

The notion of scientific culture is also used in other forms, with meanings that blend with the one just mentioned, though they do not exactly overlap. A certain ambiguity or eclecticism in this respect may often be found in current use.

The expression may, on occasions, be used to indicate the *culture of scientists* — their specific culture as professional scientific researchers. This interpretation itself contains various connotations. It may relate especially to the specialised knowledge of professional scientists, in its highly sophisticated, formal and explicit forms. But it may also refer to implicit skills, the dispositions and intuitions acquired by the experience of research, the shared norms and ethical values that tend to govern the institutional frameworks of science and scientists' behaviour, or the cultural peculiarities of a scientific field or a research laboratory. Concepts such as the "scientific *habitus*" (Bourdieu, 2001), the "*ethos* of science" (Merton, 1973) and the "laboratory culture" (Latour and Woolgar, 1979) refer mainly to the latter aspects.

The expression is also often used to indicate something that does not exactly coincide with the specialised knowledge and skills of professional scientists. In this sense, scientific culture refers to a general body of scientific knowledge and a certain familiarity with the universe of science, to a reasonable understanding of scientific methods and the scientific conception of knowledge, and to an attitude of interest in science and a positive value attached to it. In this sense, scientific culture is understood as *a sector of contemporary scholarly culture*, along with other basic components such as artistic, literary, philosophical and historical culture. Scientific culture in this interpretation is not necessarily the monopoly of scientists: it may be shared by others with a certain degree of education, as long as some scientific training is involved.

The expression is used with an even broader connotation for the *scientific culture of the general public*. From this point of view, the main issue is the broad public dissemination of knowledge and attitudes relating to science. How far do people, in society as a whole and in each segment of the population, possess scientific knowledge, understand science or feel an interest in it?

The issue is of special relevance to the Portuguese society as it is undergoing a process of change that, from the perspective of this book, may be described — undoubtedly in highly condensed terms and at the risk of oversimplification — as a process of *transition to the knowledge society*.

The starting point could thus be reformulated as follows: how is the scientific culture of the Portuguese being shaped within the framework of the present transition to the knowledge society?

Science and society

Among the different social features of science, there is one that has warranted growing public interest and has also increasingly become a subject of sociological analysis. It is precisely the *relationship between the specialised sphere of science (knowledge, institutions, researchers)* and *those not directly involved in scientific activity*. The present chapter falls within the scope of this specific area.

There has been a trend over recent years to making this field the subject of particular attention, not only among the institutional bodies defining science policies at a national and European Union level but also among the social studies of science. These issues have become known under the expression "science and society" and, more recently, "science in society" (even though the relationship between science and society is considerably more comprehensive, involving many more aspects).

Sociological research has led to rather interesting results in this area. The same can also be said for other approaches on the topic by the social studies of science mentioned above.[1]

In a recent overview, Martin Bauer (2004) groups these studies, focused "on the frontier between science and the public", into "three paradigms", broadly appearing in a sequential way: a) studies on "scientific literacy"; b) studies on "the public understanding of science"; c) studies on "science and/in society".

Research on scientific literacy started out in the USA and European countries in the 1950s and 1960s. They were based on the idea of a "deficit in scientific knowledge" among the general public and adopted a research strategy centred on surveys assessing its basic scientific knowledge.

From the 1980s onwards, the second type of studies (on the public understanding of science) placed new emphasis in analysing people's attitudes towards science. This type of analysis was principally conducted on the basis of quantitative surveys (with scales for attitudes of trust or mistrust towards science and for opinions about the positive or negative impacts of science) and content analyses of science in the media. This time, the main concern was with a kind of "attitude deficit" of the public towards science. The main hypothesis guiding the founding studies carried out from this point of view (and some of those that followed) was that low levels of scientific literacy led to negative attitudes towards science and the latter created a social atmosphere that was detrimental to scientific endeavour.

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1 Although the authors of these studies have also sometimes exhausted themselves in internal controversies that are cognitively unproductive and obsessive demarcations that are more rhetorical than analytical, which we will not be concerned with here. This topic may be found in Costa (1996), Costa, Ávila and Martinez (2000) and Costa, Ávila and Mateus (2002).

From the 1990s to the present, the third type of studies (on science and society or, more recently, science in society) has inverted the hypothesis, assigning the "deficit" to experts in the first place. According to this, scientists and scientific institutions tend to have a knowledge deficit towards the public (or publics) as well as a deficit in the way they communicate with them. The result was an impulse towards qualitative research on particular social actors, contexts and processes, in an attempt to analyse the interactions of different people and groups with science and scientists (e.g. in school, the media or science museums) and with the technological products of science and their economic, environmental and social impacts. Various methods, particularly qualitative, have been used for this purpose, e.g. local and participant observation, in-depth interviews and focal groups, and, similarly, forms of participatory action-research have been carried out, e.g. "consensus conferences" (Joss and Durant, 1995).

Each of these approaches has produced important results and they should not be seen as exhausted. But relevant criticisms have also been raised. The substantive analyses that follow will take both the results and the criticisms into account.

Scientific literacy and attitudes towards science

Since the late 1980s, a number of surveys on the scientific culture of the Portuguese population have been carried out from the perspective of scientific literacy and the public understanding of science. Some were part of the Eurobarometer surveys promoted by the European Commission. Since the early 1990s, a number of these surveys have been carried out in Portugal on the subject of science and technology. Other studies with similar content have been carried out by the Science and Technology Observatory (Ministry of Science), in 1996/97 (OCT, 1998) and 2000 (Freitas and Ávila, 2002).

These surveys dealt fundamentally with three aspects: a) the sources and practices of information on science for the Portuguese population surveyed (aged 15 years or more); b) their scientific knowledge; c) their attitudes towards science.

As a whole, those surveyed revealed quite low levels of contact with public sources of information on science. The visiting levels for science and technology museums or natural history museums were around half in comparison to European averages. The exception was for zoos and aquaria, which registered identical levels. Similarly, the reading rate for popular science magazines and newspaper articles on science was only a third of average European levels. The exception here was the declared viewing of television programmes with scientific and technological content, which recorded oscillating values, according to the programmes on offer (OCT, 1998; Freitas and Ávila, 2002).

All these practices increase markedly with the level of education. Reading practices related to science in newspapers and magazines increased considerably among the Portuguese population in the late 1990s (Freitas and Ávila, 2002).

The levels of scientific knowledge also proved to be fairly low in comparison with European averages (Rodrigues, Duarte and Gravito, 2000). However, as a general trend, they appeared to be increasing throughout the 1990s (Freitas and Ávila, 2002). These knowledge levels also increase regularly, and to a great extent, in line with the degree of schooling of those surveyed.

With respect to attitudes, a rather similar picture emerged for the declared levels of interest in and information on scientific, technological, medical and environmental topics: comparatively low in European terms; rising throughout the 1990s (with fairly pronounced growth at the end of the decade); increasing very significantly with the education level.

But in relation to attitudes towards scientists, science and the impact of science, the Portuguese were close to the European averages (OCT, 1998; Freitas and Ávila, 2002). Generally speaking, the latter were more positive and trusting than negative and distrustful, though this ranged to a variable degree, depending on the specific topics, the countries and the population sectors.

In Portugal, trust in science as measured by these surveys generally varied in line with the scientific literacy of those being surveyed. But critical attitudes towards science, which also existed, showed no clear relationship with knowledge levels (Freitas and Ávila, 2002; Ávila, Gravito and Vala, 2000).

It is worth taking note of these results, since these relationships are at the core of the hypotheses on which the studies on the public understanding of science are founded and are also at the core of the criticisms directed at them. This matter will be taken up again in the following section.

The European Commission carried out two Eurobarometer surveys in 2005 on the topic: one entitled *Europeans, Science and Technology*, and the other *Social Values, Science and Technology*. With these surveys, some of the results referred to above can be brought up to date.

According to these surveys, the Portuguese (aged 15 years or more) have interest levels that are around half the EU25 average on topics such as "new inventions and technologies" (very interested: PT=18%; EU25 = 30%) or "new scientific discoveries" (very interested: PT = 17%; EU25 = 30%). These levels of interest increase very markedly with the degree of education.

The gap is not so wide when it comes to search for information. For example, 44% of the Portuguese surveyed reported that they read articles on science in newspapers and magazines and on the internet (regularly = 13%, occasionally = 31%), in comparison with 59% for the EU25 (regularly = 19%, occasionally = 40%).

It is important to note that one of the aspects most criticised to these approaches ("scientific literacy" and "the public understanding of science") relates to scientific knowledge. In essence, the level of scientific knowledge has been measured through lists of simple statements such as "Electrons are smaller than atoms" or "Antibiotics kill viruses as well as bacteria". Respondents are requested to state whether they consider them true or false.[2]

Nowadays, these tests are regularly criticised for being based on fragmented, limiting and de-contextualised statements. Therefore, they do not correspond to an appropriate understanding of science and do not allow a valid operationalisation of the concept of scientific knowledge. An attempt has been made to overcome these criticisms, at least in part, by adding questions on the scientific method and research procedure. However, the operationalisation of these items is also far from satisfactory.[3] But there are also arguments emphasising the opposite, particularly those stressing the methodological importance of simplicity, conciseness and comparability among indicators.

The average ratio of right answers within the EU25 for these types of items, as used by Eurobarometer in 2005, was 66%. In Portugal it was 52%. Using analogous items, the country improved by 5-6 percentage points in comparison with the 1990s. Here too, as one would expect, the right answers increased significantly with the education level.

In terms of attitude, Portugal has basically kept up with the general optimism of Europeans regarding the benefits science and technology can bring to health (EU25 = 88%; PT = 85%), quality of life (EU25 = 78%; PT = 77%), more interesting work for people (EU25 = 69%; PT = 69%) and opportunities for future generations (EU25 = 77%; PT = 71%).

The great majority of respondents consider that scientists have a positive effect on society, whether they work in universities (EU25 = 88%; PT = 80%) or industry (EU25 = 85%; PT = 78%). The majority also agree with the positive effects for society of industries producing new products (EU25 = 81%; PT = 77%), and agree that the economies of their countries can only become more competitive by applying the most advanced technologies (EU25 = 64%; PT = 73%).

Attitudes are either less generalised or more sceptical in other aspects. For example, on the issue of science's ability to help eliminate poverty and hunger in the world, 39% agree in the EU25 whilst 37% disagree. There are large variations amongst countries. In Italy, 50% agree with this statement whereas in Slovenia this figure is down to 18%. In Portugal, 43% agree and 22% disagree.

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2 The answers considered correct for these two items are, in the first case, "true" and, in the second, "false".

3 More detailed examination of these criticisms can be found in OCT (1998), Ávila, Gravito and Vala (2000), Rodrigues, Duarte and Gravito (2000), and Bauer (2004), and in other texts such as Ávila and Castro (2003) or Pardo and Calvo (2002 and 2004).

There is a greater negative attitude towards the ability of science and technology to make the Earth's natural resources inexhaustible. In the EU25, as a whole, only 23% agree while 54% disagree. Again, there are large variations between countries. In Portugal, 35% agree and 33% disagree.

Furthermore, in the EU25 as a whole, most people (60%) think that science forces our lives to change too quickly. But it is a highly variable attitude. In Greece, those with this opinion amount to 94%, whereas, at the other extreme, in Ireland they remain at 42%. In Portugal they amount to 71%.

Respondents implicitly recognise that certain issues relating to science and its impacts are ambivalent. For example, 57% of the EU25 respondents (53% for Portugal) consider science and technology to be responsible for most of the environmental problems that we face today. Only 20% disagree (16% for Portugal). On the other hand, when faced with the statement that science and technology do not play an effective role in improving the environment, 50% disagree (40% for Portugal) and only 28% agree (29% for Portugal).

The same may be said for the general assessment on the impact of science. In response to the statement that the benefits of science are greater than any harmful effects it may have, those who agree are clearly in the majority (EU25 = 52%; PT = 60%) against those who disagree (EU25 = 14%; PT = 6%). It should be noted that the variation per country is fairly wide here, in contrast to some of the preceding items. In the EU25, agreement varies between 65% in Poland to 39% in the Netherlands. Near average attitudes are held by countries such as Finland, Ireland and France (all with 50%), Sweden (51%), Denmark (52%), and Malta and Belgium (both with 53%).

Thus it seems that, once again, the "first classical hypothesis" of research on the public understanding of science does not bear scrutiny, i. e. the hypotheses that higher levels of scientific literacy necessarily result in more positive attitudes towards science.[4] This lack of a direct and linear relationship has been much discussed. In response to the empirical invalidation of the hypothesis, criticisms have pointed in two directions.

Some authors argue that the methods were wrong. For example, as we have seen, it is possible to criticise the ways in which scientific knowledge levels were measured, or even the notion of "scientific knowledge levels". Or a critique can be made that the way of measuring attitudes was excessively aggregated and polarised. Science and its impacts have many different dimensions and, understandably, positive and negative aspects and varying degrees of positivity and negativity may be assigned to them simultaneously.

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4 One just has to compare these positive attitude levels with the correct response levels in the scientific knowledge test for the same countries: Malta (51%), Portugal (52%), Ireland (60%), Poland (61%), France (69%), Belgium (70%), the Netherlands (74%), Finland (74%), Denmark (74%) and Sweden (79%). It is easy to see that a relationship such as that suggested by this hypothesis does not exist.

Others argue that, on the contrary, the problem was not so much in the methods but in the facts. Certain expert researchers in the field have re-examined the data from earlier Eurobarometer surveys and, on the basis of these analyses, have formulated a "second classical hypothesis" of studies on the public understanding of science (Durant *et al.*, 2000). According to this, it would, essentially, be a matter of providing better contextualisation and taking account of possible turning points in historical processes. The first hypothesis would apply for countries still at the stage of becoming industrial societies and implementing mass education. Within a general framework of low scientific knowledge, as this knowledge improves the basic tendency would be towards an increase in absolute trust in the benefits of science. In countries already at an advanced stage of schooling and post-industrialisation, a more effective and widespread knowledge of science would be accompanied by a propensity towards critical judgment and even a significant degree of scepticism towards its impacts and potential.

Although this second hypothesis is more up-to-date and sophisticated than the first, it does not seem to satisfactorily fit the facts either, as was seen in the brief comparison above between scientific knowledge and attitudes to science in different countries.

As a whole, the two kinds of criticism — of the instruments used (concepts and methods) and the supposed facts (in the first and second classical hypotheses) — seem to be relevant. Nothing would be gained, however, in "throwing the baby out with the bathwater". There are a whole set of concepts, research methods, factual knowledge and explanatory hypotheses within these studies that represent important sociological acquisitions.

Within the "third paradigm" referred to by Bauer, the rejection of earlier research lines has sometimes been exaggerated, with these assets being neglected. The policies, initiatives and analyses carried out within the perspective of "science in society" has been drawing renewed and productive, even essential, attention to social contexts and actors, communicative interaction, participative intervention, qualitative studies and action-research. However, as Bauer also suggests, this does not invalidate cross-section and/or time series comparative analyses but rather calls for them, in a process of reciprocal completion and validation. This in turn calls for the use (clearly not exclusive) of standardised indicators and extensive surveys. Accordingly, it makes sense to perfect them on the basis of what has already been achieved and critically evaluated, instead of always "reinventing the wheel".

Indeed, this was attempted in the 2005 Eurobarometer surveys on science, from which we have been presenting some data. The results are undeniably important, yet other steps need to be taken. The following section refers to a sociological investigation in which we looked to provide some contributions in this direction.

From lay people to the public: modes of relating to science

Science in the knowledge society has emerged not only as a *form of knowledge* and *research process*, with specific and cognitive characteristics developed over recent centuries, but also as an *institution* and *culture*. Today, science is one of society's central institutions and scientific culture represents one of the basic components of contemporary culture.

Although the expression "scientific culture" may be understood in a variety of ways, its core reference in all these meanings is the institution of science. Scientific culture is the culture prevailing in the institution of science and/or the culture about this institution prevailing in society in general.

To understand many of the questions that have arisen today about the relationship between science and society, it is important to take into account the institutional nature of science in present-day knowledge society. Also to be taken into account are the most important social processes that in the present context are transforming society, science and their relationship.

It has been commonplace, in both the social sciences and the public sphere, to underline two central processes that have proved decisive in contemporary social change: the process of *technological innovation* and the process of *globalisation.*

These processes are undoubtedly of major importance. Yet there are two others that have received less attention yet are presently just as critical: one is the process of *change in people's ways of life*; and the other is the process of *change in the ways people relate to institutions*.

The first of these processes encompasses aspects such as the drastic changes in birth rates and life expectancy, the fundamental changes in women's occupational and social status, the spread of mass education, the importance acquired by technologically-mediated communication and the growth of environmental concern on the public consciousness. All of this has brought along basic changes in the structure of the population, cultural values and the organisation of daily life. Accordingly, *ways of life* are undergoing intense transformation, thus impacting on various social spheres, such as the economy and the state.

But we should also pay more analytical attention to the second process. We have not solely been witnessing changes in social structure and the ways of life. Nor is it only institutions that have been placed under strain and undergone transformation. Just as important, if not more so, is the ongoing trend towards a highly significant change in the *ways people relate to institutions*. In general terms, this change may be characterised as a tendency of citizens to move from the social status of *lay people* to the social status of *publics* in relation to the institutions.

This change has been occurring at variable rates and with variable intensities in a cluster of institutional spheres of advanced modernity, e.g. the state, religion, school, law, art and sport — as well as in science.

People's relationships with all institutions now tend to be more diversified, more informed and more demanding. As a general rule they no longer reflect most people's previous sense of distance, or pure and simple alienation from these institutions, even less the traditional fluctuation between extreme attitudes of subservience and hostility towards the institutions and their office holders and experts. But nor do they reflect full and direct affiliation or highly specialised knowledge and skills, such as those of politicians, priests, teachers, lawyers, artists, sports professionals — or scientists.

In general terms, these relationships can be characterised as now consisting of *public-like social relations*, i.e. relationships of citizens with institutions, arising from selective but effective awareness, with varying degrees of interest and information, semi-informed expectations and a certain critical capacity towards these institutions — which in this case is science.

This change has to a large extent been driven by the increasing influence in contemporary social life of mechanisms associated with the economy (markets), education (school) and communications (the media).

People thus tend to be involved in a specific, asymmetric relationship with scientists (as happens with specialists in other institutional spheres). In this relationship, the former, though not occupying the social status or performing the occupational role of the latter, still exercise growing and effective influence over their activity, in terms of social demand and public legitimacy. Consequently, they ultimately interfere, more or less directly, in the economic, political and cultural conditions of that activity.

There is, however, an important caveat: this new social status (the "public of science") is neither unique nor homogeneous. On the one hand, other relationships with science remain or emerge. They range from those largely alienated from and ignorant about it to those with actual and more or less intense participation in scientific initiatives and activities or in clubs, associations and movements in which contact with science is more informed and active. On the other hand, the public-like social relationship, itself, takes different forms.

From this point of view, the question of people's scientific culture may be raised again. Fundamentally, it is important to identify the relationship of people who are non-specialists with the specialised institution of science.

However, there are still a number of unsolved problems in the usual extensive analyses of people's scientific culture: a) the measurement of scientific knowledge, which is carried out in a highly debatable manner using lists of "quiz questions" like those of television contests; b) the use of indicators of attitudes to science that are often highly artificial or unrealistic (this aspect improved quite significantly in the latest Eurobarometer surveys, though not completely); c) the focus of the analysis on attitudes, as if people's relationship with science were only, or above all, of this nature, with rather less attention therefore being given to the *social practices of relating to science*; d) the interpretation of

the responses to the different survey items, which is carried out in a highly fragmented manner as if every attitude, opinion or behaviour were of isolated significance, irrespective of the manner in which these items combine with each other to produce "patterns of scientific culture" or, more broadly speaking, *modes of relating to science*.

In a piece of research work on *the public of science* (Costa, Ávila and Mateus, 2002) it was possible to make some progress in overcoming these problems, especially the final three.[5]

The investigation included an extensive survey of a representative sample of the Portuguese population aged 15 to 74 years, as well as a series of other research activities using qualitative methods.[6]

One of the hypotheses, supported by the accumulated sociological knowledge, was that the social relationships in question concern not only *conceptions and attitudes about science* but also, more decisively, *practices of relating with science*. In addition, the hypothesis was made that the latter would probably be more important than the former in a characterisation of the significant social diversity potentially observable in this respect.

Accordingly, the questionnaire included a large set of indicators relating, precisely, to *practices associated with the relationship with science*: contact with science information sources (books, magazines, newspapers, television, radio, the internet, museums, exhibitions, meetings and activities); contexts in which science knowledge and information is used (school, studies, occupational activity, interpersonal sociability, intellectual fulfilment and civic participation); and the direct experience of scientific research in some phase of the respondent's personal trajectory.

Added to these were other indicators directly linked to them, e. g. those relating to *self-evaluations* and *dispositions* regarding not only the possession but also the acquisition and use of scientific knowledge: the self-evaluation of scientific knowledge; the self-evaluation of scientific training for occupational, cultural and civic purposes; the reasons for reading or failing to read

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5 The first could not be confronted directly. The attempt was not made to measure scientific knowledge levels directly or to make a direct measurement of reflexive and operative capacities to understand, debate, apply or produce scientific knowledge — which should be contained in an appropriate concept of scientific literacy (Ávila and Castro, 2002). This aspect can be picked up on another occasion. In this research, these items were partially substituted by others relating, on the one hand, to practices of acquiring science information and using scientific knowledge in different contexts and, on the other, to self-evaluation of scientific knowledge and to the interest in improving it or the willingness to do so.

6 In particular, interviews (with scientists, publicists, journalists, specialists, teachers and students), observation of outlets for periodicals, contact with science publishers, and press analyses, along with another, more restricted, questionnaire survey of subscribers to a scientific culture magazine (*Colóquio/Ciências*, published until 2000 by the Calouste Gulbenkian Foundation, which sponsored this research on science publics).

about science; the willingness to improve scientific knowledge; and the preferred ways of improving it.

Furthermore, *conceptions and preferences* regarding science and scientific information were not neglected: epistemological understanding of science; attitudes on the consequences of science advancements (on people, society, the economy, culture and the environment); and the preferred content of, and ways of dealing with, science information.

Finally, in order to investigate the relationships between these analytical dimensions and important *social characterisation* parameters, socio-cultural, socio-educational, socio-occupational and socio-demographic variables were included in the questionnaire.

However, just as important, if not more so, as the dimensions and indicators included, was the analytical strategy used. Essentially, the information was submitted to a series of multivariate analyses, combining an extensive set of indicators concerning practices of relating with science and certain key self-evaluation, disposition and attitude indicators.[7] In this way, it was possible to find patterns of the relationship with science that were clearly differentiated, consistent and interpretable: *the modes of relating to science* prevailing among the population surveyed.

The main result of this research was, then, the identification of *seven modes of relating to science* (in the sense of Weber's ideal types) in present-day Portuguese society, corresponding to seven segments into which it is possible, in this respect, to decompose the population studied.

The first four of these modes of relating to science cover a little more than a third of the population studied and may be considered as meaning great or significant *proximity* to science. The other three include almost two thirds of the population. In these, the modes of relating to science mean *distance.* But it is crucial to note that there are various different ways of being close to or distant from science. Hence the seven modes of relating to science (MRS).

Every MRS was able to be characterised in detail, in terms of the science-related practices, dispositions, conceptions and attitudes that form it.[8] In addition, it was possible to investigate the links of these MRS with social attributes and lifestyles.

In an overall analysis, proximity to science is found to be closely related to proximity to the educational system, in particular the highest levels, and

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7 Principal component factor analyses were used to condense the information from the various sets of indicators and cluster analyses were used in order to find typologies.

8 A detailed description of each of these seven modes of relating to science and an equally detailed analysis of their connections with social structural variables and with various areas of behaviour, information, attitude and evaluation regarding science can be found in Costa, Ávila and Mateus (2002).

Table 4.1 Modes of relating to science (MRS)

MRS	%
Committed	2.3
Insiders	9.2
Beginners	7.8
Self-taught	17.7
Indifferent	22.6
Benevolent	28.0
Withdrawn	12.4
Total	100.0

Source: Costa, Ávila and Mateus (2002).

proximity to highbrow culture and new technologies. It also reveals itself as closely related to the use of science in the social contexts of work, study, civic activity, leisure and sociability.

No less important, however, is the fact that the different MRS do not simply follow the distribution of the population by educational level, age-group, social class or lifestyle. The resources and opportunities structurally accessible, in particular in the educational sphere, play a great role in the probability of access to science and an interest in it. Yet, despite the predominant trends, there are significant cases of the presence of modes of relating closely to science in almost all social categories, whatever the characterisation parameter considered.

Perhaps even more importantly, it has thus become possible to analyse any item involving the practices of relating to science or the attitude towards it, not in itself, in an isolated and fragmentary manner, but in the specific form in which this item takes part of the different MRS. Within the scope of each of these different MRS, the same attitude or the same practice, as captured through the standardised indicators, may ultimately have rather different social meanings.

The prior characterisation of the different MRS, with analysis of each indicator of attitudes and practices relating to science only being carried out subsequently to this and with these indicators being contextualised within the framework of each MRS, allows highly significant increases in intelligibility and explanatory capacity. Moreover, it would be difficult to argue that these overall patterns, the MRS, do not influence each item of practice or attitude regarding science and the social meaning of that item.

Among many other possible examples, a simple illustration of the importance of this typology building to improve the analytical understanding of the phenomena under study can be found in the fact that, as a general average, around 50% of the population surveyed declares that it wishes to improve its knowledge of science but, decomposed in accordance with the seven MRS, this disposition is seen to vary regularly, after all, between 98% among the *committed* and 11% among the *withdrawn*.

Another example concerns the extended debate in the social studies of science on the relationship between scientific knowledge and attitudes to science. The *concept* of modes of relating to science and the *analytical strategy* followed allowed contributions to further clarification of the question. It could be seen that the public may simultaneously hold positive and negative assessments of the possible consequences of science for people, society and the environment. What tends to distinguish the different segments of the public is not so much the degree of negativity but, rather, of positivity. It is the positive evaluations, above all, that vary: generally the greater the proximity to science, the higher they are. In contrast, negative evaluations are more or less constant in all the modes of relating to science. This set of results does not support the two "classical hypotheses" on the public understanding of science, referred to above. It opens the way to new interpretations that provide greater clarification of the situations found in the different countries and population segments on the issue of the relationship between scientific knowledge and attitudes to science.

The typology of the modes of relating to science is an analytical variable that allows an integrated interpretation of isolated indicators, transcending a superficial and easily mistaken reading of them. In particular, it prevents the relationships with other variables, such as those of social characterisation, from being established prematurely, in a limiting comparison with fragmentary indicators of practices and attitudes regarding science. It allows them, rather, to be established in a dense and duly theoretical form that is sociologically interpretable in a more precise and profound way.

In its multi-dimensional form and its content relating to contextualised practices, the typology also represents another step in the pursuit of a connection between extensive-quantitative analyses and intensive-qualitative analyses, a pursuit that it is essential to carry out in this and other fields of sociological research.

Scientific culture and the public sphere

Besides its multifaceted presence in people's practices and attitudes, scientific culture has been the subject of specific and purposeful action in the public sphere — from science popularisation to science in the media and from scientific policies to social movements.

The movement to popularise science, which has coexisted with science itself from the beginning, became more widespread and systematic in countries such as the United States of America, the United Kingdom and France in the period between the two world wars and, particularly, after the Second World War. The lectures by scientists for non-specialist publics, the science journalism, the popular science publications, the science museums and, later, the science centres are central elements in this dynamic (Lewenstein, 1992, 1995; Gregory and Miller, 1998; Bucchi, 2004).

In Portugal, initiatives to disseminate science were considerably fewer for a long time, although the examples of pioneers such as Bento de Jesus Caraça or Rómulo de Carvalho (Duarte, 2000) should be highlighted. Different factors help explain this picture: the long-lasting dictatorship until 1974, the lack of freedom of speech at the most varied levels, the limited importance of the national scientific community, and the educational deficit of most of the population (Gago, 1990; Caraça, 1993; Costa, Ávila and Mateus, 2002).

The far-reaching transformations arising from the democratic regime after 1974 created the right conditions for a progressive change in this situation. In a pioneering research work in this field, Machado and Conde (1988) specifically report the rise and expansion throughout the 1980s of publishing projects in this area, the growing presence of scientific and technological topics in the Portuguese media, and the gradual involvement of scientists in dissemination projects to wider publics.

Since then, the area of the dissemination of science has asserted itself progressively. It not only sees itself now as a space for public communication of the advances of science but also, in some cases, for debate on the nature of scientific knowledge, its relationship with the fields of politics and economics, its ethical dilemmas and the risks associated with some of its applications (Machado and Conde, 1988; Mendes, 2003; Mendonça, 2006).

Despite a certain amount of resistance, the intention of breaking the traditional social isolation of science has been emerging in the Portuguese scientific community (Gago, 1990), in line with what has been happening in other countries. The forms and conceptions have been of all kinds and shapes (Gago, 1995). The progressive attribution of responsibility to scientists and research units for communicating with non-specialist publics is an undeniable fact, though, especially since the 1990s (Costa *et al.*, 2005).

The action of specialised publishers and the growing media interest in these matters contributed to affirmation of the area of the dissemination science (Duarte, 2000; Costa, Ávila and Mateus, 2002; Mendes, 2003; Mendonça, 2006). Other forms of dissemination, some of which were carried out recently in Portugal, include the programme *Ciência Viva*/Living Science (Miller *et al.*, 2002; Costa *et al.*, 2005), to which we shall return later, television programmes devoted to science and technology (e.g. *2010* and *4 x Ciência*) and the growing availability of internet sites with information on these issues.

With regard to the printed press, studies carried out still indicate a relatively limited amount of writing devoted to science and technology in Portugal, though they also point to a rising trend. Another interesting piece of data is connected with the type of newspaper in which these articles appear. While it was clearly the reference newspapers that gave the most space to scientific and technological questions in the 1980s, in subsequent years these topics have also been included in more popular publications (Machado and Conde, 1988; Duarte, 2000; Casaleiro, 2000; Mendes, 2003).

Generally speaking, they deal particularly with health, the environment, space exploration and, more recently, information technologies. This shows that scientific areas are not given equal prominence. For example, discoveries in astronomy and biology seem to attract considerably more journalistic attention than other areas (Gonçalves and Fonseca, 2006). On the other hand, issues connected with scientific policy or typical scientific work (theories and hypotheses, research methods, scientific debate) tend to be exploited much less in most periodicals. Priority is given essentially to information on results and advances of science, in particular in areas with more immediate and recognised implications for people's daily lives (Duarte, 2000; Mendonça, 2006).

An aspect that has traditionally aroused a certain amount of discomfort is the possibly difficult relationship between scientists and journalists. The former would tend to ascribe a lack of rigour to the latter in the media treatment given to science information. The latter would tend to charge the former with a lack of will or training to communicate with journalists (Nelkin, 1995; Weingart, 1998; Peters, 2000; Granado and Malheiros, 2001). However, developments observed more recently show that a convergence is moving towards recognition, at least in principle, of the need to combine skills (scientific and communicational) in the dissemination of science (Costa, Ávila and Mateus, 2002). They also show that scientists and research units are moving closer to the rules prevailing in the media (Mendonça, 2006).

In recent years, as has happened in other countries, interest has also been growing in topics related to controversial aspects of science and its applications, e. g. cloning and the environmental risks of certain technologies. Specific examples are the cases of "Foz Côa" or "co-incineration", topics that received great media coverage throughout the country (Gonçalves, 2001 and 2003). What is at stake here is no longer the public understanding of certain scientific concepts or theories alone but also the citizens' ability to understand the mechanisms of science and deal with scientific knowledge in contexts in which it can be applied (Gago, 2003).

The controversy around these two cases, to cite only a couple of examples with the greatest media coverage, cast the spotlight on the debate among different scientists, different scientific areas and different feelings regarding the problems at stake, making clear the provisional and fragmented nature of scientific knowledge. It also showed the frequent use today, in the public sphere, of sources of scientific authority as such, often more than the use of scientific knowledge and arguments per se, to justify the positions in hand.

However, as in other countries, the relationship of the Portuguese people and institutions with scientific authority is far from linear. If, in certain environments, scientific authority has been put into question, in others it is accepted without significant discussion. An example of this point is the growing use of scientific expertise in forensic situations, where it is difficult for judges to

question the results, and the opportunities to appeal against the decisions tend to be limited (Costa and Nunes, 2001; Costa, Machado and Nunes, 2003).

The relationship with science in the public sphere can also take other, particularly interesting, forms. This was shown in a piece of sociological research on the programme *Ciência Viva*/Living Science.[9]

This programme was launched in 1996 by the then recently formed Ministry of Science and Technology, later giving rise to the National Agency for Scientific and Technological Culture — Living Science. The programme has a number of fundamental activities.

Some of these activities are the promotion of Science and Technology Week and Scientific Culture National Day, when many scientific research laboratories, institutes and centres open their doors to visits by schoolchildren, teachers and those who are interested, thus offering direct contact with research and research activities. In addition, there are the "Living Science in Summer" initiatives, such as astronomy, geology or biology on the beach or in other places where it is possible to go out and meet people in leisure situations.

The main lines of *Ciência Viva*/Living Science activities also include the scientific occupation of young people in the holidays with short trainings periods in research units, with the aim of stimulating scientific vocations. In addition, they have involved the creation of the Knowledge Pavilion in Lisbon and a network of science centres (Living Science Centres), which have been multiplying in various municipalities throughout the country, with the involvement of town councils and other entities, as well as scientists.

One of Living Science's most important activities has been directed at promoting experimental learning of science. The starting-point for this initiative was the evidence that, in the national education system, the teaching of science was more discursive and rhetorical than active and experimental. Moreover, there was a serious lack of equipment and training for science teaching.

An annual call for Living Science projects was thus organised, aimed at kindergartens as well as basic education schools (Grades 1-9) and secondary schools (Grades 10-12). The event registered great participation and rapid growth. Around 200 projects were presented in the first call and around 1000 in the fifth. Living Science projects spread to schools throughout the country. They involved hundreds of thousands of students. They mobilised teachers and schools at all basic education levels and secondary level. In the first cycle of basic education (Grades 1-4), surprisingly, the growth in the number of projects from call to call was even greater than in the others.

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9 This research is presented in detail in Costa *et al.* (2005).

A large number of teachers joined in the project. Their participation was reflected in initiatives and voluntary work, generating the preparation and implementation of projects and introducing experimental work into schools. Another decisive aspect was the involvement of researchers and scientific research units in these projects, also voluntarily, to support the teachers and pupils in basic and secondary education.

The educational and local (i. e. families, associations and local councils) impact was highly significant. Networks of schools and partnerships with other institutions were formed around these projects. The Living Science Forum, organised annually as show-window for projects and a place for exchanging experience, became events of great symbolic and relational intensity, boosting the formation of a collective identity.

This all resulted, finally, in the emergence of an apparently improbable social movement around the promotion of scientific culture (Costa *et al.*, 2005). Among the various analytical perspectives possible, it is important to stress here that this is a particularly interesting example of another way that people relate to science. The people involved no longer represent the social status of *lay people*, alienated and removed from science, nor only the social status of *science public*, though this dimension is also present. Another relationship emerges here, that of a *social movement*, in its specificity of non-routine collective action, with the deliberate involvement of a group of social actors around a common cause, which implies some sort of social change.

In this case, the social actors involved are teachers and schoolchildren, scientists and research units, science writers and journalists, associations and local governments, and so on. In broad terms, the common cause is the promotion of scientific culture. And the social changes, whether present implicitly or formulated explicitly, extend from changes in school, in the sense of more experimental and inclusive learning, to changes of a much greater order, that is, changes to a cognitively advanced society.

In other words, the core of this movement ultimately represents what this chapter is about: scientific culture and ways of relating to science in the transition to the knowledge society, in Portuguese society and in the European context.

References

Ávila, Patrícia, and Paula Castro (2003), "Compreender a ciência: o Inquérito à Cultura Científica dos Portugueses", in Maria Eduarda Gonçalves (ed.), *Os Portugueses e a Ciência,* Lisbon, Publicações Dom Quixote.

Ávila, Patrícia, Ana Paula Gravito, and Jorge Vala (2000), "Cultura científica e crenças sobre a ciência", in Maria Eduarda Gonçalves (ed.), *Cultura Científica e Participação Pública,* Oeiras (Portugal), Celta Editora.

Bauer, Martin W. (2004), "The vicissitudes of 'public understanding of science': from 'literacy' to 'science in society'", in João Caraça *et al., Science Meets Society*, Lisbon, Calouste Gulbenkian Foundation.

Bell, Daniel (1973), *The Coming of the Post-industrial Society*, New York, Basic Books.

Bourdieu, Pierre (2001), *Science de la Science et Réflexivité*, Paris, Raisons d'Agir.

Bucchi, Massimiano (2004), *Science in Society*, London, Routledge.

Caraça, João (1993), *Do Saber ao Fazer. Porquê Organizar a Ciência*, Lisbon, Gradiva.

Casaleiro, Pedro (2000), "Os visitantes dos museus e os média da ciência" in Maria Eduarda Gonçalves (ed.), *Cultura Científica e Participação Pública*, Oeiras (Portugal), Celta Editora.

Castells, Manuel (1996), *The Rise of the Network Society*, Mass. (USA), Blackwell.

Conceição, Pedro, Manuel V. Heitor, and Bengt-Ake Lundvall (2003), *Competence Building and Social Cohesion in Europe. Towards a Learning Society*, Cheltenham (UK), Edward Elgar.

Costa, António Firmino da (1996), "Ciência e reflexividade social", in Maria Eduarda Gonçalves (ed.), *Ciência e Democracia*, Venda Nova, Bertrand Editora.

Costa, António Firmino da, *et al.* (2005), *Cultura Científica e Movimento Social. Contributos para a Análise do Programa Ciência Viva*, Oeiras (Portugal), Celta Editora.

Costa, António Firmino da, Patrícia Ávila, and Margarida Senna Martinez (2000), "Sociologie d'un laboratoire de biotechnologie", *Cahiers Internationaux de Sociologie*, 109.

Costa, António Firmino da, Patrícia Ávila, and Sandra Mateus (2002), *Públicos da Ciência em Portugal,* Lisbon, Gradiva.

Costa, Susana, and João Arriscado Nunes (2001), "As atribulações da ciência 'impura': a harmonização da biologia forense e a diversidade dos sistemas jurídicos" in João Arriscado Nunes, and Maria Eduarda Gonçalves (eds.), *Enteados de Galileu? A Semiperiferia no Sistema Mundial da Ciência*, Oporto, Edições Afrontamento.

Costa, Susana, Helena Machado, and João Arriscado Nunes (2003), "O ADN e a justiça: a biologia forense e o direito como mediadores entre a ciência e os cidadãos" in Maria Eduarda Gonçalves (ed.), *Os Portugueses e a Ciência,* Lisbon, Publicações Dom Quixote.

Drucker, Peter F. (1993), *Post-Capitalist Society*, New York, Harper Collins.

Duarte, Joana (2000), *De Ptolomeu a Gutenberg. A Divulgação Científica em Portugal* (master's degree thesis), Lisbon, ICS-UL.

Durant, John, *et al.* (2000), "Two cultures of public understanding of science and technology in Europe", in Meinolf Dierkes, and Claudia von Grote (eds.), *Between Understanding and Trust. The Public, Science and Technology*, Amsterdam, Harwood Academic Publishers.

European Commission (2005), *Europeans, Science and Technology*, Special Eurobarometer 224.

European Commission (2005), *Social Values, Science and Technology*, Special Eurobarometer 225.

Florida, Richard (2002), *The Rise of the Creative Class*, New York, Basic Books.
Freitas, Eduardo de, and Patrícia Ávila (2002), *Inquérito à Cultura Científica dos Portugueses* (Final Report), Lisbon, OCT.
Gago, José Mariano (1990), *Manifesto para a Ciência em Portugal*, Lisbon, Gradiva.
Gago, José Mariano (1995), "Prefácio" in Rómulo de Carvalho, *A Física no Dia-a-Dia*, Lisbon, Relógio D'Água Editores.
Gago, José Mariano (2003), "Formação e erosão dos saberes em sociedades de informação e de risco", in AAVV, *Cruzamento de Saberes, Aprendizagens Sustentáveis*, Lisbon, Calouste Gulbenkian Foundation.
Giddens, Anthony (1990), *The Consequences of Modernity*, Cambridge, Polity Press.
Gonçalves, Maria Eduarda (2003), "Imagens públicas da ciência e confiança nas instituições: os casos de Foz Côa e da Co-incineração" in Maria Eduarda Gonçalves (ed.), *Os Portugueses e a Ciência*, Lisbon, Publicações Dom Quixote.
Gonçalves, Maria Eduarda (ed.) (2001), *O Caso de Foz Côa: Um Laboratório de Análise Sociopolítica*, Lisbon, Edições 70.
Gonçalves, Maria Eduarda, and Rui Brito Fonseca (2006), "A biologia na imprensa portuguesa entre 2000 e 2004", *Biologia e Sociedade*, 1.
Granado, António, and José Victor Malheiros (2001), *Como Falar com Jornalistas sem Ficar à Beira de um Ataque de Nervos*, Lisbon, Gradiva.
Gregory, Jane, and Steve Miller (1998), *Science in Public*, Cambridge, Basic Books.
Joss, Simon, and John Durant (1995), *Public Participation in Science. The Role of Consensus Conferences in Europe*, London, Science Museum.
Latour, Bruno, and Steve Woolgar (1979), *Laboratory Life. The Social Construction of Scientific Facts*, Beverly Hills (California), Sage Publications.
Lewenstein, Bruce V. (1992), *When Science Meets the Public*, Washington, AAAS.
Lewenstein, Bruce V. (1995), "Science and the media", in Sheila Jasanoff, *et al.* (eds.), *Handbook of Science and Technology Studies*, Thousand Oaks (California), Sage Publications.
Lindley, Robert M. (2000), "Economias baseadas no conhecimento", in Maria João Rodrigues (ed.), *Para uma Europa da Inovação e do Conhecimento*, Oeiras (Portugal), Celta Editora.
Lyon, David (1988), *The Information Society. Issues and Illusions*, Cambridge, Polity Press.
Machado, Fernando Luís, and Idalina Conde (1988), "A divulgação científica em Portugal: do lado da produção", *Sociologia, Problemas e Práticas*, 5.
Mendes, Hugo (2003), "Visibilidade da ciência nos mass media" in Maria Eduarda Gonçalves (ed.), *Os Portugueses e a Ciência*, Lisbon, Publicações Dom Quixote.
Mendonça, Helena (2006), *Jornalismo e Ciência* (master's degree thesis), Lisbon, ISCTE - Lisbon University Institute.
Merton, Robert K. (1942, 1973), "The normative structure of science", in Robert K. Merton, *The Sociology of Science. Theoretical and Empirical Investigations*, Chicago, The University of Chicago Press.

Miller, Steve, *et al.* (2002), *Benchmarking the Promotion of RTD Culture and Public Understandig of Science*, Brussels, European Commission.

Nelkin, Dorothy (1995), *Selling Science. How the Press Covers Science and Technology*, New York, Freeman.

OCT/MCT (1998), *Relatório do Inquérito à Cultura Científica dos Portugueses 1996/1997*.

Pardo, Rafael, and Félix Calvo (2002), "Attitudes toward science among the European public: a methodological analysis", *Public Understanding of Science*, 11.

Pardo, Rafael, and Félix Calvo (2004), "The cognitive dimension of public perceptions of science: methodological issues", *Public Understanding of Science*, 13.

Peters, Hans Peter (2000), "A interacção entre jornalistas e peritos científicos: conflito e cooperação entre duas culturas profissionais", *Comunicação e Linguagens*, 27.

Reich, Robert B. (1991), *The Work of Nations*, New York, Alfred A. Knopf.

Rodrigues, Maria de Lurdes, Joana Duarte, and Ana Paula Gravito (2000), "Os portugueses perante a ciência", in Maria Eduarda Gonçalves (ed.), *Cultura Científica e Participação Pública,* Oeiras (Portugal), Celta Editora.

Soete, Luc (2000), "A economia baseada no conhecimento num mundo globalizado", in Maria João Rodrigues (ed.), *Para uma Europa da Inovação e do Conhecimento*, Oeiras (Portugal), Celta Editora.

Stehr, Nico (1994), *Knowledge Societies*, London, Sage Publications.

Touraine, Alain (1969), *La Société Post-industrielle*, Paris, Denoel-Gonthier.

Weingart, Peter (1998), "Science and the media", *Research Policy*, 27.

Chapter 5

Higher education students
Contexts and social origins

Rosário Mauritti and Susana da Cruz Martins

One of the issues that has regularly made its presence felt in sociology is the analysis of educational qualifications as a key component in the configuration of societies and their development processes. This is certainly one of the areas in which we can clearly see both the growing importance of the transverse processes taking place worldwide in the context of globalisation and the national differences that persist, though they themselves are also undergoing change.

Within this framework, the present chapter begins by stressing the specific contributions of research carried out in Portugal over recent years on the topic of higher education students. Then, with the last decade as its analytical reference, it offers an assessment of the expansion at this educational level in Portugal and evaluates the different probabilities of access, according to the students' social origins. Finally, in the third part, it places the dynamics of socio-educational expansion within a comparative perspective encompassing the European Union.

An object with a presence in Portuguese sociology

Higher education students represent a population segment with a considerable social protagonism, as young students with potentially significant social destinies: they are often involved in the most significant dynamics of social change in present-day societies. Their social and analytical relevance is clearly seen in the numerous Portuguese studies that take higher education students and graduates as the object of their analysis.

From the late 1960s to the early 1970s the sociological work produced in Portugal was marked by Adérito Sedas Nunes' work, which concentrated on university students' social origins (Nunes, 2000).[1] From the mid-1980s this initial work was the subject of new analytical investigation through an ISCTE-based research programme on higher education students (Almeida,

Costa and Machado, 1988; Machado, Costa and Almeida, 1989; Costa, Machado and Almeida; 1990). Against a background in which the expansion of access to higher education was gaining prominence, the research carried out at the time sought to analyse university students from a twin point of view: a social characterisation, on the one hand, and their value systems on the other. The developments in this programme in the 1990s produced results at a research level, e.g. Casanova (1993a and 1993b). At a later stage, in a partnership between CIES and the OPJ (Permanent Observatory for Youth), the same questionnaire was applied to a representative sample of degree students in the country, in the various geographical areas and fields of study (Mauritti, 2002; Almeida *et al.* 2003; Machado *et al.*, 2003).

Besides the research mentioned above, a broad array of investigations and the associated analyses were developed within Portuguese sociology on the theme of young students in general and those in higher education in particular. Among the different contributions of importance, it is possible to mention certain research lines that constitute the field of sociological analysis in question. At a more general level, a series of researches on youth, school and cultural practices are to be noted, such as Lopes (1997 e 2003); Fernandes *et al.* (1998); Silva (1999) and Abrantes (2003). With regard to the topic of higher education students, the analytical advances present in longer term projects should be noted, e. g. work that examines the data gathered from the institutional surveys of school enrolments, carried out for a number of years by the Ministry of Education (Cruz, *et al.,* 1995a, 1995b); the work based on a national survey with the central topic of social action in schools (Balsa, *et al.*, 2001); and, thirdly, the work produced under the observation system for the path of higher education graduates to employment. The latter work was an INOFOR (Institute for Innovation in Training) initiative and also involved the application of a "pathway survey", carried out in 2001. This line of research also contains specific analytical studies, complemented with the use of their own instruments, e. g. the studies centred on academic trajectories and graduate employment processes in the Lisbon region (Alves, 2000 and 2005; Alves, 2003) and Oporto (Gonçalves, Parente and Veloso, 2001). There are other more localised studies, e. g. Arroteia and Martins (1998) at the University of Aveiro; Fernandes (ed.), (2001) at Oporto University; and Estanque and Nunes (2002 and 2003) at Coimbra University.

With regard to CIES research, at present an international project is being carried out in the field of higher education students' socio-economic conditions — the Eurostudent survey — of which the initial results are Martins, Mauritti and Costa (2005) and HIS (2005). Though this kind of international

1 See Adelino Gomes (2005) for the analysis of the emergence of studies covering university graduating youth studies in Portugal.

perspective has little visibility for the moment, it is decisive both from the point of view of the enrichment of analysis issues and perspectives and the possibility of comparing the generally shared aspects and dynamics and the unique features of the situations encountered among higher education students in different European countries. This perspective is all the more important in the strong context of the Europeanisation of educational policies applying to this level of teaching.

Access to higher education in Portugal: trends and patterns

Access and certification

In the last 30 years, access to higher education has undergone a distinct opening up process. It was in the 1980s that the direction of this growth gave the clearest signs that, at a level of political perspectives and social expectations, this was a one-way process with repercussions for the improvement of educational levels in Portuguese society. Though over an extended time-span the increase is seen to be continuous, it has been difficult to narrow the gap with Europe, given the recent slowdown in this growth and, especially, the enormous lag in the country's qualifications structure at the time of the change to democracy.

Thus, from an initial reading of the trends described in figure 5.1, it is important to underscore the highly significant rise in the number of students entering higher education in Portugal. In a period of slightly more than a decade (1991-2002), the overall total of young people attending this educational level rose from around 190,000 students to nearly 400,000. On the basis of the same time-span, almost 67, 000 young people on average have enrolled for the first time in the first year of bachelor and graduation degree courses. On average, over 50,000 graduates have been produced per year (ISCED 5A and 5B).

One of the indicators to be noted in figure 5.1 is the predominance of young women. They form a clear majority in the total enrolment, as well as in the sub-set of those enrolling for the first time in courses at the first cycle of higher education (accounting for 57% in the two indicators). Moreover, as the annual flows of new graduates show, young women are more likely to complete their higher studies than young men (almost two thirds of those graduating are women).

Yet, if these are the overall higher educational trends, it is still important to note that, especially since 1998, there seems to have been a slow-down in the expansion in number of students enrolled and graduates produced each year. For example, the average annual growth rate in total enrolments fell from 11% in the first half of the decade to no more than 3% per year between 1998 and 2002. What factors can be holding this growth back, when in spite of

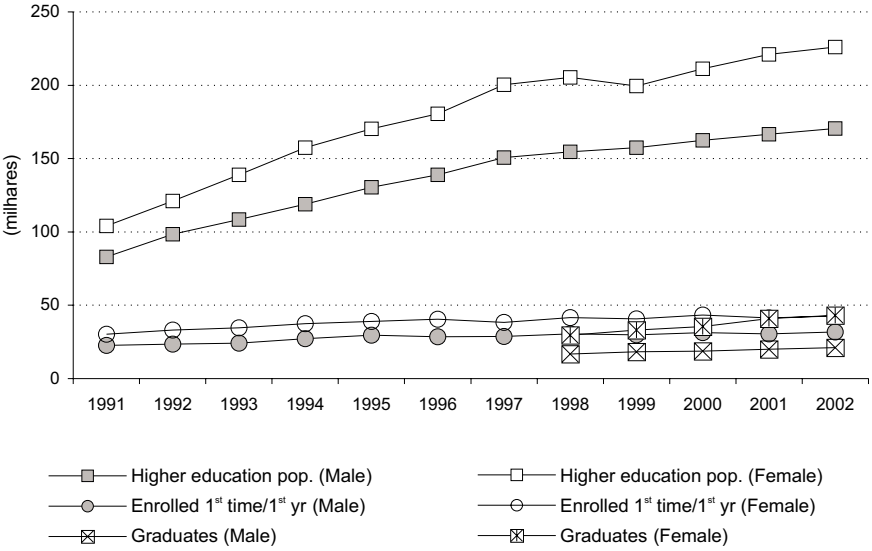

Figure 5.1 Students in higher education and graduates, by gender, 1991-2002 (absolute values)

Sources: First-year students enrolling for the first time: 1990-1996, DGES/MCIES; 1997-2002, OCES/MCIES. Population in higher education and graduates from the system: INE, http: //www. ine. pt/PI/genero/Principal. aspx (04-01-2005).

the great expansion in higher education (particularly in the 1980s) Portugal is still far from the proportion of graduates that minimally reflects the average European Union standard?

Without our entering into a great discussion of the issue, the following broad reasons are to be noted here: i) perhaps the most prominent: the fall in the number of 12th grade pupils as a combined result of the lower birth-rate and the accentuated early-leaving rates in the secondary system; ii) increasing graduate unemployment — especially in the fields of education, humanities, social science and business management; iii) as a corollary of the latter, the current opinion in the media and certain public debates on educational policies that there are too many graduates in Portuguese society at present; and finally, iv) as a reaction to the latter two factors, a possible absence of investment or incentives on the part of families, especially those with fewer resources, who no longer see a degree certificate as a guarantee of future career success for their children — a factor that is proportionally more relevant when the families are the main support for studies at this level (Martins, Mauritti and Costa, 2005).

Various researches report the value of a higher education diploma on the labour market, whether from the adaptability and employability standpoint or at the level of the return on investment in education (see, for example, Costa, *et al.*, 2000; Portugal, 2004). Nevertheless, the factors mentioned

above, often presented deceptively, can help to maintain and intensify the social divisions in the relative probabilities of access to higher education in general and to certain so-called "more elitist" qualifications in particular (Mauritti, 2002: 88-96).

Social origins

One of the central issues in studies on higher education students is the characterisation of their social origins as a dimensional axis of differentiation in this segment. Some of the original studies on the relationship between school and social inequalities already voiced this concern (Bourdieu and Passeron, 1964, 1970; Boudon, 1973; Coleman (ed.) 1966; Bernstein, 1975).

Portuguese sociological production in this area has also been intense and allows us, today, to have secure analyses regarding the relationship between higher educational options and the characterisation of social origins.[2] An analysis of class origins is, thus, one of the main dimensions of this characterisation, integrating *socio-professional* and *socio-educational indicators* in a co-ordinated manner.[3] This is seen to be fundamental as it is considered that, for the students' educational careers, the characterisation of their households of origin has an influence on the probability of higher education access and, also, the type of qualification achieved.

From the indicators in table 5.1 we can see that 58% of higher education students come from the social categories with the most social, cultural and economic capital at their disposal — the entrepreneurs and executives and the professionals and managers. However, it is not possible to assess these two categories as equal, as there is a strong prevalence of social origins among the professionals and managers (40%). The latter, moreover, are the greatest holders of qualifications that can be reflected in the educational careers of their children. These students represent a very strong dynamic of social reproduction, exceeding a third of the universe as a whole. In comparison with the Portuguese population, this category seems over-represented (with more than double the percentage value), revealing a higher education system with a narrow social recruitment base. The greater presence of students from this category may indicate two things. The first is a powerful reproductive effect in which the students' educational careers coincide with the preceding generation, demonstrating that a family's more favourable position in the social structure influences access chances. The second, simultaneously, is the expansion of this category in Portuguese society (also affecting the parents'

2 See the references indicated above.

3 On the subject of the clarification, importance and operationalisation of these indicators, see Machado, Ávila and Costa, (1995); Costa (1999); Almeida, *et al.* (2003); Machado, *et al.* (2003).

age-group), which also raises the probability of the parents' being noted as the social origin of the younger generation in higher education. This trend is reinforced in the broader European context (Costa *et al.*, 2000; Mauritti, Martins and Costa, 2004).

If, on the one hand, the presence of these origins demonstrates strong social reproduction, on the other, it does not mean the other categories are insignificant, in particular those with the fewest resources (table 5. 1). It is, therefore, a question of a *double recruitment pattern* in which, along with logics of social reproduction mentioned above, social mobility processes are launched into the space of higher education (Almeida, Costa and Machado, 1988; Machado, *et al.*, 2003).

Table 5.1 also provides the *class recruitment index*.[4] If we focus on the relationship between those higher education students with professional and manager origins and those with industrial worker origins, the ratio is 8: 1. If that demonstrates a highly selective system, it is also the greatest difference encountered. Even the entrepreneurs and executives — the top category of the social structure, though with a dominant profile that is not very highly qualified — send as many students as the self-employed and twice as many as employees. Regarding difference by gender, the social recruitment index is slightly more broadly based for female students than for their masculine counterparts.

Although the students' parents' social structure distinctly ignores the distribution of the class situations of the Portuguese population in the age-group to which they predominantly belong, the presence of other social categories, tracing rising trajectories via qualifications, reveals an education system expanding to other social strata, with signs of development since the decade of the change to democracy (Machado and Costa, 1998; Sebastião, 1998; Almeida, *et al.*, 2000). The category with the closest relative proportions in the two distributions, students' parents and the population, is that of entrepreneurs and executives and the self-employed. In the salaried categories with fewest occupational resources and qualifications it is among the industrial workers that a greater difference in the ability to put their children through higher education can be noted and it is among the employees that a greater probability of doing so is to be seen (though with a gap of 10% between them and the reference age-group in the Portuguese population).

With regard to differences in the higher education sub-systems, access is narrowest in the public universities, whereas the recruitment base is most differentiated in the polytechnics (confirming other studies such as those of Balsa, *et al.)*. The socio-occupational structure of student origins in the private

4 For more details of the operating and conceptual procedures followed in this index, see Almeida, Costa and Machado (1988: 142-143); Machado, Ávila and Costa (1995: 112); Costa (1999: 235-245); Machado, *et al.* (2003: 49-60).

subsystem is very similar to that of the public universities, though in the private segment there is a notable enlargement in the entrepreneur and executive category. The latter class situation (without the inclusion of liberal professionals) displays profiles that differ greatly from the Portuguese reality and often reveal greater economic than cultural capital. Finally, the wider social recruitment for polytechnic education may have a double, perhaps conflicting, interpretation, reflecting not only a more democratic image of access to higher education but also, within it, the persistence of socially selective processes that place students in different types of education, with their concomitant opportunities.

The part that women are playing in higher education as a whole confirms earlier research (Grácio, 1997; Machado and Costa, 1998; Almeida *et al.*, 2000). In all subsystems, they broaden the social base, revealing their dynamism in educational processes (tables 5.1 and 5. 2). Their secondary school careers with greater success and broader generalisation (INE, 2002), combined with increased participation rates in higher studies, indicate more secure educational trajectories for female students.

From a complementary perspective, an analysis of the socio-educational indicators, also related to the students' household of origin, very much coincides with that of the class situations (table 5.2). Inequalities in qualification resources are greatly reflected in differences in access to higher education. The fact that there are four times the number of parents with a higher education in relation to the reference age-group in Portuguese society identifies cultural capital as decisive in educational careers. It is well known that highly qualified households of origin are over-represented and the weight of parents with the first cycle of basic education or less is reduced to almost a third in relation to the population at large.

The educational recruitment index shows a large dichotomy between those whose parents have a higher education and the others. The ratio between the former and households of origin with at least one parent educated to secondary level is 2:1 — and even greater for the other households.

However, admission to higher education, too, abides by internal selective processes. This aspect is at the root of the unequal nature of the various higher education subsystems. From this point of view, as can be seen in table 5.2, state polytechnic education is more open in its social recruitment than the other subsystems, as far as the characterisation of households is concerned. This is in spite of the fact that around a fifth of these students' parents have a higher education, which therefore indicates that the mesh of the net is still too fine to allow an intake that reflects the socio-educational structure of the society. The sub-systems in which selectivity is most pronounced are private higher education and public universities (with 43% and 41% of parents, respectively, the product of a higher education). The higher patterns for private education may, however, be due to the inclusion of the Catholic University in

Table 5.1 Social class origins of higher education students, comparison with the Portuguese population (%) and class recruitment index

Social class	Household of origin										Portuguese population in 2001 (aged 45-54)	CRI		
	Public education						Private education			Total				
	University			Polytechnic										
	MF	M	F	MF	M	F	MF	M	F			MF	M	F
Household of origin (7 categories)														
Entrepreneurs and executives	14.0	13.7	14.4	17.2	21.3	14.4	23.4	18.9	25.1	17.6	_	_	_	_
Professionals and managers	46.6	51.2	42.4	26.9	30.7	24.2	44.5	51.9	41.6	40.4	_	_	_	_
Self-employed	5.2	4.0	6.3	7.9	8.0	7.5	5.0	4.3	5.1	5.9	_	_	_	_
Multi-active self-employed	5.4	4.5	6.3	6.7	3.1	9.4	3.8	3.9	3.9	5.3	_	_	_	_
Employees	12.3	12.0	12.1	12.5	11.1	13.6	9.6	9.4	9.7	11.6	_	_	_	_
Industrial workers	7.8	7.3	8.4	15.4	14.2	16.3	5.9	6.4	5.8	9.4	_	_	_	_
Multi-active employees	8.7	7.3	10.1	13.4	11.6	14.6	7.8	5.2	8.8	9.8	_	_	_	_
Household of origin (5 categories)														
Entrepreneurs and executives	14.0	13.7	14.4	17.2	21.3	14.4	23.4	18.9	25.1	17.6	14.7	4	4	4
Professionals and managers	46,6	51,2	42,4	26,9	30,7	24,2	44,5	51,9	41,6	40,4	16,2	8	9	7
Self-employed	10,6	8,5	12,6	14,6	11,1	16,9	8,8	8,2	9,0	11,2	8,7	4	3	5
Employees	21,0	19,3	22,2	25,9	22,7	28,2	17,4	14,6	18,5	21,4	32,4	2	2	2
Industrial workers	7,8	7,3	8,4	15,4	14,2	16,3	5,9	6,4	5,8	9,4	28,0	1	1	1

Sources: Martins, Mauritti and Costa, 2005; INE, 2002.

Table 5.2 Socio-educational origins of higher education students (%), comparison with the Portuguese population (%) and school recruitment index

Educational background	Household of origin										Portuguese population1 (Aged 45-54)	SRI		
	Public education						Private education			Total				
	University			Polytechnic										
	MF	M	F	MF	M	F	MF	M	F			MF	M	F
Higher education	40.8	45.7	36.7	20.4	24.2	17.5	43.4	49.0	41.2	35.7	9.8	10	13	9
Upper secondary	16.2	17.7	14.3	16.6	17.4	16.1	16.5	17.0	16.4	16.4	8.9	5	6	5
Basic cycle 3 (lower secondary)	13.0	11.9	14.2	13.0	12.5	13.2	12.9	10.9	13.9	13.0	10.0	4	4	4
Basic cycle 2	11.4	8.5	13.9	17.9	17.1	18.8	10.1	7.0	11.0	12.9	8.8	4	4	4
Up to cycle 1	18.6	16.2	20.9	32.1	28.8	34.4	17.1	16.1	17.5	22.0	62.5	1	1	1

Sources: Martins, Mauritti and Costa, 2005; INE, 2002.

the sample, since, if students pursuing qualifications in this institution are removed from the analysis, the education of the households of origin is the same as in the state universities.

A comparative view on a European scale

As we stressed above, in recent years Portugal has witnessed a marked expansion in education at the higher levels. The processes of social recomposition involved in such dynamics, either in relation to the breadth of the social universes included or to the cultural empowerment and life-style changes, still incorporate a certain social selectivity or even new social exclusions, as has been seen. We still cannot tell if this expansion in higher education will, even so, be enough to underpin the positive inclusion of Portugal in the modernisation processes that are moving through present-day societies. This is particularly so in a Europe driven by the goals of competitiveness, sustainable economic growth and social cohesion, goals that are explicitly fuelled by a recognition of the key role of knowledge and information.

Thus, table 5. 3 resumes the analysis of socio-educational recompositions, on this European scale. We can begin by examining the rates of participation in the educational system by the youngest age-groups in the population. The data relates to the five-year period immediately prior to the recent enlargement of the EU.

In this table, looking first at the EU15 group of countries, we can see that, for the 15-19 age-group, European participation in the education system is around 85%, falling significantly among the higher age-groups (just over 40% for the 20-24 year-old group and about 15% for the 25-29 age-group). The strong female representation is conspicuous in all countries, particularly for the ages corresponding to the normal secondary and higher education cycles (up to the age of 24), with the women systematically recording participation rates that are higher than or at least equivalent to those of their male counterparts.

But if this is a pattern that cuts across the various contexts, certain differences between countries still show up in their young people's participation rates in the educational system, especially that of the age-group that normally precedes entry to higher education. With compulsory schooling up to the 9th grade (3rd basic-education cycle or ISCED 2) Portugal appears at the lowest threshold of this indicator. Its relative results were very close to Italy's in 1998 but, as it essentially maintained the same pattern in 2002 (in contrast to Italy), the gap between it and its European partners worsened, even in relation to the new Member States. Slovakia, for example, starts from a slightly lower position and reaches 2002 with five more percentage points.

In the higher age-groups (20-24 and 25-29 years of age), the countries with the lowest relative rates of participation in the education system are

Greece, at the beginning of the period under discussion, Ireland, Austria and the United Kingdom, in 2002, and, among the group of new member states in particular, Slovakia and the Czech Republic. This is in spite of the fact that the enormous effort to raise the numbers of young people in the education system is most conspicuous in the EU's new partners.

But does this data show that our country thus presents a more advantageous educational model in these age-groups? Not necessarily. It may mean that, in these two age-groups, the rate of participation is quite low in the countries mentioned above because part of the population of this age has already completed their studies or, possibly, even their higher education. The fact is that, here in Portugal, the repeat rates for the 2nd and 3rd basic cycles and, in particular, the secondary cycle are still rather high (ME, 2004). This means that, though still in the system, many young people may not be attending the level to be expected at their age: higher education. This is corroborated in the study of those recently qualifying. We are going to discuss this aspect on the basis of a reading of the weight that secondary and higher education certificate/degree-holders represent in the population of the various countries making up the European Union at present.

Let us stay with these two educational levels to report the different dynamics — in terms of the historical background, socio-cultural patterns and educational policies — that mark the educational/qualifying processes of the different countries' populations. These can be seen in the relative incidence of secondary or higher education in age-groups of the working-age population that, in principle, has finished its education (25-34 years of age). It is also observable, in the case of higher education, in the proportion of graduates in this younger age-segment and in the 25-64 age-group as a whole.

In fact, considering the weight of certificate/degree-holders at the two educational levels in the sub-group of the population aged between 25 and 34, the differences between countries are enormous. For an average European pattern in which, in this group of ages, over 80% of the population has at least a secondary education (of whom an average of a 1/4 have acquired a higher education qualification), we encounter a scale with countries like the Czech Republic, Slovakia and Sweden at the top (with 90% for the combined results) and Portugal, on its own, at the bottom (where the weight of certificate/degree-holders at the two educational levels does not exceed 40%).

Closer analysis of the distributions in the various countries reveals significant distinctions, within this overall pattern, in their educational processes. Some are highly oriented towards mass secondary schooling (as in the great majority of the new member-states and, also, countries like Austria, Germany and — to a slightly more modest extent — Greece, the Netherlands, Italy and Luxemburg). Others are more oriented towards simultaneously qualifying their populations at a secondary and higher level (as in Lithuania, Cyprus, Sweden, the United Kingdom, Finland, Denmark, France and Belgium). Spain

Table 5.3 Young people in the education system and graduates, by age-group and gender, 1998-2002

(percentages)

	Countries	Sex	Participation in the education system[1]						Graduates 2002[2]		
			1998			2002			Upper secondary	Higher education	
			15-19	20-24	25-29	15-19	20-24	25-29	25-34	25-34	25-64
EU15	Germany	HM	91.6	36.3	13.9	**90.1**	38.1	16.3	63.9	21.0	22.3
		M	92.1	38.0	10.6	90.5	40.1	13.2	63.4	19.8	17.8
	Áustria	HM	–	–	–	81.5	29.4	10.3	67.8	17.4	16.9
		M	–	–	–	82.2	32.1	9.6	63.3	18.5	15.4
	Belgium	HM	85.3	40.6	9.3	89.6	38.2	5.8	39.8	36.3	27.9
		M	86.4	42.3	8.4	91.2	40.3	6.4	38.1	41.0	28.5
	Denmark	HM	90.3	55.0	34.5	88.7	55.3	35.0	54.6	30.6	27.4
		M	91.6	55.4	35.7	88.5	**58.3**	37.9	50.4	35.7	29.9
	Spain	HM	80.2	44.3	15.3	81.9	43.4	16.1	22.3	36.6	24.4
		M	84.7	49.6	16.8	85.5	48.4	17.6	22.5	40.2	23.9
	Finland	HM	86.1	47.8	24.0	80.4	56.1	26.7	**49.4**	38.2	32.4
		M	89.8	52.7	24.9	85.8	61.3	27.7	44.5	46.6	36.0
	France	HM	95.6	53.5	11.4	**94.6**	53.2	11.7	43.3	35.2	23.5
		M	**96.5**	55.2	11.9	95.6	56.6	12.8	41.1	38.0	24.3
	Greece	HM	80.5	29.3	4.4	86.8	36.3	6.1	50.8	23.4	17.6
		M	80.7	30.2	4.4	87.6	38.1	6.1	51.2	26.5	16.5
	Netherlands	HM	89.7	50.5	24.4	80.7	35.3	6.2	**49.3**	28.0	24.9
		M	88.4	47.7	19.7	81.6	35.2	5.2	49.3	29.7	22.3
	Ireland	HM	–	–	–	81.6	29.0	3.5	52.9	30.7	20.8
		M	–	–	–	86.3	31.9	3.1	50.4	37.1	26.5
	Italy	HM	75.4	35.8	16.5	80.8	38.2	15.6	47.3	12.4	10.4
		M	77.6	39.8	16.5	83.1	42.2	16.3	48.2	14.1	10.2
	Luxemburg	HM	88.6	40.4	11.9	91.3	47.8	13.9	45.8	22.6	18.6
		M	89.7	36.3	11.1	91.1	47.5	13.9	47.5	21.7	15.6
	Portugal	HM	71.6	32.4	9.5	72.4	34.7	10.7	21.2	16.1	11.4
		M	74.1	36.4	8.7	77.6	38.3	11.4	22.2	20.3	12.8
	U. Kingdom	HM	–	–	–	75.3	31.0	13.3	56.1	33.5	29.4
		M	–	–	–	77.3	34.4	17.1	55.4	33.6	28.6
	Sweden	HM	**90.9**	42.6	24.9	88.4	41.7	22.4	60.8	30.7	26.4
		M	**92.6**	47.0	27.8	89.4	46.4	24.3	57.7	34.2	30.0
New EU Member States	Cyprius	HM	–	–	–	–	–	–	44.2	41.0	29.1
		M	–	–	–	–	–	–	43.2	42.9	27.3
	Slovakia	HM	69.4	17.4	1.1	78.6	22.1	2.9	81.7	11.8	10.8
		M	70.7	19.2	0.5	**79.4**	25.1	3.1	78.7	13.9	11.0
	Slovenia	HM	–	–	–	–	–	–	66.6	19.0	14.8
		M	–	–	–	–	–	–	**61.9**	25.3	16.4
	Estonia	HM	–	–	–	–	–	–	61.9	27.6	29.6
		M	–	–	–	–	–	–	58.0	35.6	35.3
	Hungary	HM	78.2	26.5	7.4	87.5	37.7	10.6	67.0	14.4	14.1
		M	78.9	27.9	7.8	88.2	38.7	10.9	64.7	16.3	14.5
	Latvia	HM	–	–	–	–	–	–	67.3	18.2	19.6
		M	–	–	–	–	–	–	68.2	22.8	22.0
	Lithuania	HM	–	–	–	–	–	–	46.7	41.5	44.0
		M	–	–	–	–	–	–	43.6	49.0	50.9
	Poland	HM	**91.0**	30.8	5.7	95.9	53.8	14.9	74.1	16.1	12.2
		M	**92.5**	31.4	**5.0**	**96.8**	56.1	14.7	71.3	19.4	13.7
	Czech Republic	HM	77.1	17.1	1.8	88.3	25.7	2.9	81.9	11.9	11.8
		M	79.1	16.8	1.7	89.2	26.6	2.8	82.0	11.5	10.0

Note: Malta is not included as information relating to the indicators under analysis does not exist for that country.
Sources: 1) OECD, Education at a Glance 2004; 2) Eurostat, Employment Survey, 2002; Ireland, 2001. Portugal, INE, 2002.

has the distinction of being the only EU country in the age-group in question in which the relative weight of higher education certificate-holders is greater than that of secondary school certificate-holders. Finally, Portugal's secondary education patterns are close to its neighbour's but there is a clear gap between them as far as graduates are concerned (table 5. 3). In other words, among us, the clear educational deficit at the lower level is not compensated by any increase in education/training at the higher level, thus betraying the fact that large sections of the younger people drop-out school prematurely or exit the system at an early stage.

Nowadays, higher education is the arena in which development policies and strategies for competitiveness are played out, with serious implications for national societies and, thus, the relationships between them. If we focus our analytical perspective purely on this, the highest qualification level, it is countries like Lithuania (with an apparent loss in the younger of the two age-groups), Cyprus, Finland, Spain and Belgium that stand out — all with figures of between 35% and 45% for the 25-34 age-group. If the first two countries represent the processes of opening up their societies, where the precise impact of such credentials is still not known, the others take their high qualifications as one of the most decisive parameters for positioning themselves — in the hierarchy of competence, opportunities and even, broadly speaking, quality of life — within a European Union that is ever more demanding from a viewpoint of strengthening the information and knowledge society.

In terms of the socio-educational reconfigurations, a comparison of the two age-groups considered reveals higher education processes that are very different, though connected in a dynamic, mentioned above, that cuts across all contexts: the strong female performance. Among those contexts in which the re-composition of higher level qualifications is most intense are Spain, France, Ireland and, for Eastern Europe, Cyprus (with increases of 10% or more in the difference between the two age-groups). In this context, Ireland should be noted, as the case registering the most positive development, even if it is not unexpected in view of the weaker starting point in terms of qualifications. With regard to Portugal, one of the countries with the greatest deficit in qualifications in the 25-64 age-group, it is not assuming a sufficiently robust growth dynamic in the European environment.

Against the background of globalisation, these trends to upgrade the qualifications of the population leave Portugal in a highly unfavourable position. This is the situation for 2002, but its roots lie in the past: in 1986, when the country entered the Community, it already lagged too far behind to catch up without a great effort (Costa, *et al*. 2000). Now, twenty years later, we report limited progress towards European aims at this dawn of the century.

References

Abrantes, Pedro (2003), *Os sentidos da Escola,* Oeiras (Portugal), Celta Editora.

Almeida, João Ferreira de, António Firmino da Costa, and Fernando Luís Machado (1988), "Famílias, estudantes e universidade: painéis de observação sociográfica", *Sociologia, Problemas e Práticas*, 4, pp. 11(44.

Almeida, João Ferreira de, *et al.* (2003), *Diversidade na Universidade. Um Inquérito aos Estudantes de Licenciatura*, Oeiras (Portugal), Celta Editora.

Almeida, João Ferreira de, Luís Capucha, António Firmino da Costa, Fernando Luís Machado, and Anália Torres (2000), "A sociedade", in António Reis (ed.), *Portugal Anos 2000: Retrato de um País em Mudança*, Mem Martins (Portugal), Círculo de Leitores, pp. 36-72.

Alves, Marina Gaio (2003), *A Inserção Profissional de Diplomados de Ensino Superior Numa Perspectiva Educativa. O Caso da Faculdade de Ciências e Tecnologia* (PhD thesis), Lisbon, FCT/UNL (cyclostyled).

Alves, Natália (2000), *Trajectórias Académicas e de Inserção Profissional dos Licenciados, 1994-1998*, Lisbon, University of Lisbon/Gabinete de Apoio ao Estudante.

Alves, Natália (2005), *Trajectórias Académicas e de Inserção Profissional dos Licenciados, 1994-1998*, Lisbon, University of Lisbon.

Arroteia, Jorge Carvalho, and António Maria Martins (1998), *Inserção Profissional dos Diplomados pela Universidade de Aveiro. Trajectórias Académicas e Profissionais*, Aveiro (Portugal), University of Aveiro.

Balsa, Casimiro Marques, *et al.* (2001), *Perfil dos Estudantes do Ensino Superior. Desigualdades e Diferenciação*, Lisbon, Edições Colibri.

Bernstein, Basil (1975), *Langage et Classe Sociale. Codes Socio-linguistiques et Contrôle Social*, Paris, Les Éditions de Minuit.

Boudon, Raymond (1973), *L'Inégalité des Chances: La Mobilité Sociale dans les Sociétés Industrielles*, Paris, Armand Colin.

Bourdieu, Pierre, and Jean-Claude Passeron (1964), *Les Héritiers. Les Étudiants et la Culture*, Paris, Les Éditions de Minuit.

Bourdieu, Pierre, and Jean-Claude Passeron (1970), *La Reproduction. Éléments pour une Théorie du Système d'Enseignement,* Paris, Les Éditions de Minuit.

Casanova, José Luís (1993a), *Posições e Disposições: Trajectórias Sociais e Recomposição do Habitus* (master's degree thesis), Lisbon, ISCTE — Lisbon University Institute(cyclostyled).

Casanova, José Luís (1993b), *Estudantes Universitários: Composição Social, Representações e Valores*, Lisbon, Institute of Social Sciences of the University of Lisbon and Portuguese Youth Institute.

Coleman, James S. (ed.), (1966), *Equality of Educational Opportunity*, Washington, Government Printing Office.

Costa, António Firmino da (1999), *Sociedade de Bairro. Dinâmicas Sociais da Identidade Cultural*, Oeiras (Portugal), Celta Editora.

Costa, António Firmino da, *et al.* (2000), "Classes sociais na Europa", *Sociologia, Problemas e Práticas*, 34, pp. 9-46.

Costa, António Firmino da, Fernando Luís Machado and João Ferreira de Almeida (1990), "Estudantes e amigos: trajectórias de classe e redes de sociabilidade", *Análise Social*, XXV (105-106), pp. 193(221.

Cruz, Manuel Braga da, *et al.* (1995a), *O Desenvolvimento do Ensino Superior em Portugal: A PGA e os Estudantes Ingressados no Ensino Superior*, Lisbon, Institute of Social Sciences of the University of the University of Lisbon and Ministry of Education /DEPGEF.

Cruz, Manuel Braga da, *et al.* (1995b), *O Desenvolvimento do Ensino Superior em Portugal. Situação e Problemas de Acesso*, Lisbon, Institute of Social Sciences of the University of Lisbon and Ministry of Education /DEPGEF.

Estanque, Elísio, and João Arriscado Nunes (2003), "Dilemas e desafios da Universidade: recomposição social e expectativas dos estudantes na Universidade de Coimbra", *Revista Crítica de Ciências Sociais*, 66, pp. 5-44.

Estanque, Elísio, Nunes, and João Arriscado Nunes (2002), "*A universidade perante a transformação social e as orientações dos estudantes: o caso da Universidade de Coimbra"*, Coimbra (Portugal), Oficina do CES, 169. At http: //www. ces. fe. uc. pt/publicacoes/oficina/ oficina. php (July, 2003).

Eurostat (2002), *Employment Survey, Quarter Four, 2002*, Eurostat, United Kingdom.

Fernandes, António Teixeira (ed.) (2001), *Estudantes do Ensino Superior no Porto. Representações e Práticas Culturais*, Oporto, Edições Afrontamento.

Fernandes, António Teixeira, *et al.* (1998), *Práticas e Aspirações Culturais. Os Estudantes da Cidade do Porto*, Oporto, Edições Afrontamento and Muncipal Council of Oporto.

Gomes, Adelino (2005), "A JUC, o jornal encontro e os primeiros inquéritos à juventude universitária: contributos para a história das modernas ciências sociais em Portugal", *Sociologia, Problemas e Práticas*, 49, pp. 95-115.

Gonçalves, Carlos Manuel, Cristina Parente, Luísa Veloso (2001), "Licenciados em sociologia: ritmos e formas de transição ao trabalho", *Sociologia. Revista da Faculdade de Letras do Porto*, 11, pp. 31-94

Grácio, Sérgio (1997), *Dinâmicas da Escolarização e das Oportunidades Individuais*, Lisbon, Educa.

HIS (2005), *Eurostudent Report 2005. Social and Economic Conditions of Student Life in Europe 2005. Synopsis of Indicators.* At http: //www. his. de/Abt2/Auslandsstudium/Eurostudent/ index. htm (June, 2005).

INE (2002), *Censos 2001. Resultados Definitivos. XIV Recenseamento Geral da População; IV Recenseamento Geral da Habitação (8 volumes)*, Lisbon, Instituto Nacional de Estatística (Statistics Portugal).

INOFOR (1999a), *As Relações entre a Educação e o Emprego dos Diplomados do Ensino Superior (I, II, III), Sistema de Observação dos Percursos de Inserção dos Diplomados do Ensino Superior*, Lisbon, INOFOR/Instituto para a Inovação na Formação (Institute for Innovation in Training).

INOFOR (1999b), *Educação, Emprego e Transição para a Vida Activa. Uma Aproximação ao Caso Português, Sistema de Observação dos Percursos de Inserção dos Diplomados do*

Ensino Superior, Lisboa, INOFOR/Instituto para a Inovação na Formação (Institute for Innovation in Training).

INOFOR (1999c), *Inquérito-Piloto aos Diplomados do Ensino Superior, 1999*, Lisbon, INOFOR/ Instituto para a Inovação na Formação (Institute for Innovation in Training).

INOFOR (2002), *Inquérito de Percurso aos Diplomados do Ensino Superior 2001. Síntese de Resultados, Lisboa,* INOFOR/Instituto para a Inovação na Formação (Institute for Innovation in Training).

Lopes, João Teixeira (1997), *Tristes Escolas. Práticas Culturais Estudantis no Espaço Escolar Urbano*, Oporto, Edições Afrontamento.

Lopes, João Teixeira (2003), *Escola, Território e Políticas Culturais*, Oporto, Campo de letras.

Machado, Fernando Luís, and António Firmino da Costa (1998) "Processos de uma modernidade inacabada", in José Manuel Leite Viegas and António Firmino da Costa (eds.), *Portugal, que Modernidade?*, Oeiras (Portugal), Celta Editora, pp. 17-44.

Machado, Fernando Luís, and António Firmino da Costa (1998) "Processos de uma modernidade inacabada", in José Manuel Leite Viegas and António Firmino da Costa (ed.), *Portugal, que Modernidade?*, Oeiras (Portugal), Celta Editora, pp. 17-44.

Machado, Fernando Luís, António Firmino da Costa and João Ferreira de Almeida (1989), "Identidades e orientações dos estudantes: classes, convergências, especificidades", *Revista Crítica de Ciências Sociais*, 27/28, 189(209.

Machado, Fernando Luís, António Firmino da Costa, and João Ferreira de Almeida (1989), "Identidades e orientações dos estudantes: classes, convergências, especificidades", *Revista Crítica de Ciências Sociais*, 27/28, 189(209.

Machado, Fernando Luís, *et al.* (2003) "Classes sociais e estudantes universitários: origens, oportunidades e orientações", *Revista Crítica de Ciências Sociais*, 66, pp. 45-80.

Machado, Fernando Luís, Patrícia Ávila, and António Firmino da Costa (1995), "Origens sociais e estratificação dos cientistas", in Jorge Correia Jesuíno (ed.), *A Comunidade Científica Portuguesa nos Finais do Século XX*, Oeiras (Portugal), Celta Editora, pp. 109-133.

Machado, Fernando Luís, Patrícia Ávila, and António Firmino da Costa (1995), "Origens sociais e estratificação dos cientistas", in Jorge Correia Jesuíno (ed.), *A Comunidade Científica Portuguesa nos Finais do Século XX*, Oeiras (Portugal), Celta Editora, pp. 109-133.

Martins, Susana da Cruz, Rosário Mauritti, and António Firmino da Costa (2005), *Condições Socioeconómicas dos estudantes do Ensino Superior em Portugal*, Lisbon, DGES/MCTES.

Martins, Susana da Cruz, Rosário Mauritti, and António Firmino da Costa (2005), *Condições Socioeconómicas dos estudantes do Ensino Superior em Portugal*, Lisbon, DGES/MCTES.

Mauritti, Rosário (2002), "Padrões de vida dos estudantes universitários nos processos de transição para a vida adulta", *Sociologia, Problemas e Práticas*, 39, 85-116.

Mauritti, Rosário (2002), "Padrões de vida dos estudantes universitários nos processos de transição para a vida adulta", *Sociologia, Problemas e Práticas*, 39, 85-116.

Mauritti, Rosário, Susana da Cruz Martins, and António Firmino da Costa (2004), "Classes socais numa perspectiva comparada: estruturas europeias actuais e instrumentos de análise", *Actas do V Congresso Português de Sociologia. Sociedades Contemporâneas, Reflexividade e Acção*, Braga, 12-15 May 2004. At http: //www. aps. pt/vcongresso/ateliers-pdfs. htm (May, 2004).

Mauritti, Rosário, Susana da Cruz Martins, and António Firmino da Costa (2004), "Classes socais numa perspectiva comparada: estruturas europeias actuais e instrumentos de análise", Actas do V Congresso Português de Sociologia: Sociedades Contemporâneas, Reflexividade e Acção, Braga, 12-15 May 2004. At http://www.aps.pt/vcongresso/ateliers-pdfs.htm (Maio, 2004).

ME (2004), "Insucesso e abandono escolar em Portugal". At http://www.min-edu. pt/Scripts/ASP/destaque/estudo01/docs/sintese. pdf (Fevereiro, 2005).

ME (2004), "Insucesso e abandono escolar em Portugal", at http://www.min-edu. pt/Scripts/ASP/destaque/estudo01/docs/sintese. pdf (Fevereiro, 2005).

Nunes, Adérito Sedas (2000) "A população universitária portuguesa: uma análise preliminar" and "O sistema universitário em Portugal: alguns mecanismos, efeitos e perspectivas do seu funcionamento", in A. Sedas Nunes, *Antologia Sociológica*, Lisbon, Institute of Social Sciences of the University of Lisbon.

Nunes, Adérito Sedas (2000) "A população universitária portuguesa: uma análise preliminar" and "O sistema universitário em Portugal: alguns mecanismos, efeitos e perspectivas do seu funcionamento", in A. Sedas Nunes, *Antologia Sociológica*, Lisbon, Instituto de Ciências Sociais da Universidade de Lisboa.

OECD (2004), *Education at a Glance 2004*, Paris, OECD:

Portugal, Pedro (2004), "Mitos e factos sobre o mercado de trabalho português: a trágica fortuna dos licenciados", *Boletim Económico*, Banco de Portugal (Bank of Portugal), March 2004. At http: //www.bportugal.pt/publish/bolecon/docs/ 2004_1_3_p. pdf (February, 2005).

Sebastião, João (1998), "Os dilemas da escolaridade", in José Manuel Leite Viegas and António Firmino da Costa (eds.), *Portugal, que Modernidade?* Oeiras (Portugal), Celta Editora, pp. 311-327.

Sebastião, João (1998), "Os dilemas da escolaridade", in José Manuel Leite Viegas and António Firmino da Costa (eds.), *Portugal, que Modernidade?* Oeiras (Portugal), Celta Editora, pp. 311-327.

Silva, Catarina Lorga da (1999), "Educação e formação profissional", in Alexandra Lemos Figueiredo, Catarina Lorga da Silva and Vítor Sérgio Ferreira, *Jovens em Portugal. Análise Longitudinal de Fontes Estatísticas 1969/97,* Oeiras (Portugal), Celta Editora.

Silva, Catarina Lorga da (1999), "Educação e formação profissional", in Alexandra Lemos Figueiredo, Catarina Lorga da Silva e Vítor Sérgio Ferreira, *Jovens em Portugal: Análise Longitudinal de Fontes Estatísticas 1969(1997,* Oeiras (Portugal), Celta Editora.

Chapter 6

Qualified professionals and the knowledge society

Maria de Lurdes Rodrigues, Luísa Oliveira, and Helena Carvalho

Introduction

Assuming that society as a whole has already attained reasonable levels of education, the training of the so-called advanced human resources, i. e. graduates and post graduates is one of the essential pillars of the *knowledge society*.

In Europe, this model of society is presented as an alternative to the development model which prevailed in the post-war period and ran its course in the 1980s. It seeks to relaunch the foundations of the Old Continent's competitiveness model but in new moulds. Undergraduate and postgraduate training asserts itself as one of the key pillars in this new model of competitiveness that is capable of generating the wealth to sustain the European social model.

However, this project is also one of economic and social inclusion and hence of European integration. As EU countries are quite different from each other, this immediately raises the problem of to what extent each country has the possibilities and capacities to participate in this societal project.

It is within this framework that the development of the education levels of the employed population is analysed in this text, focussing particularly on the case of Portugal. An attempt is made to identify the salient features of the sectorial insertion of these professionals and, hence, their contribution to the development of these sectors.[1]

1 This analysis is based on the 1991 and 2001 Census, information provided by the INE under the MCES/INE protocol, which allows free access to data for research purposes.

The demands of advanced training and the new model of competitiveness

For a better understanding of the problem, it is necessary to clarify what is understood by the new model of competitiveness and how it generates advanced training needs.

The term "model" refers to one specific set of factors supporting competitiveness. For the purpose of simplicity and our objectives here, two ideal types can be used: the conventional and the new model of competitiveness. The first, typical of post-war development, gained shape from a set of circumstances that were coherently coordinated to allow business profitability, wealth creation and a more balanced model of the social distribution of wealth than its predecessor. Following the New Deal and the appearance of the so-called Fordist development model (Boyer, 1981), a social contract emerged that would give the wage earning classes access to consumer goods hitherto reserved for the elite. This phenomenon, often termed mass consumption, involved the formation of large markets of standardised products in which competition was basically defined on the basis of price and exchange-rate policy and operated as a regulating mechanism of competitiveness between countries.

This model was intrinsically associated with a Keynes-inspired macro-economic policy. It allowed three decades of expansion, full employment and better living conditions and gave people universal access to education, health care and assistance in sickness, old age and unemployment.

Mass production was based on large-scale manufacture and took advantage of the technological innovation of automated equipment and increased rationalisation in the organisation of work — the transition from Taylorism to Fordism. It used low-skilled labour at a time when the profile of the population sustaining this model also had low levels of schooling.

The ideal type of this competitiveness model is based on reducing the cost of factors that not only allow consumer prices to fall but also increase earnings on capital. This pattern progressively wore itself out as it generated and extended social well-being. This meant the decline of Fordism which had provided the possibility to overcome the 1930s crisis. It was necessary to invent a new development model and to negotiate a new social contract.[2]

Governments attempted to return to liberalism as they searched for a solution to the problem at a time of rising unemployment. Thatcherite Britain was the paradigmatic example of this where the number of poor, including the unemployed, was the highest in Europe.

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2 See Luc Soete (2002) on the subject. As an alternative, he presents "cognitive Keynesianism" and a new social contract that permits a development model based on a new competitiveness model that he terms "knowledge-oriented".

Academic circles spoke of an economic crisis and a crisis in economic theory and the controversy between Keynesianism and liberalism was reignited.

This impasse led to the "resuscitation" of Schumpeter — a fairly marginalised author in economic theory — due to his idea of "crisis as creative destruction".

According to the author "(…) the fundamental impulse that sets and keeps the capitalist machine in motion is driven by new objects of consumption, new methods of production and transport, new markets, new types of industrial organisation — all these elements created by capitalist initiative (…)" (Schumpeter, 1996: 116). And later, "(…) the opening up of new domestic or foreign markets and the development of productive organisations (…) represent examples of the same process of industrial mutation (…) that unceasingly revolutionises the economic structure *from the inside*, continually destroying its old elements and continually creating new elements. This process of *creative destruction* is the fundamental aspect of capitalism (Schumpeter, 1996: 117).

This is how the dead-end of the crisis came to be seen as an opportunity for development and how innovation became the key to the profitable application of capital and wealth creation. In the last two decades the so-called neo-Schumpeterians have gained ground in academia and in their ability to influence political circles.

From a more sociological perspective, it can be said that this emergent form of development is a huge process of the social invention of needs that allow the rapid construction of new — very high-tech[3] — products and new markets.

This is the creative dimension of the crisis which is manifested in the emergence of new internal and external demands on companies: new production processes, equipment based on new technologies, work organisation methods, and services specialising in building markets, new raw materials, products and management methods, new sectors of activity and, naturally, the right education levels for the creation and implementation of this model.

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3 Technological sophistication is an important criterion for two essential sociological reasons: i) it makes the process of imitation more difficult and, therefore, intensifies the stratification among companies, regions and countries and ii) taking advantage of the new technologies, it allows rapid product obsolescence and, thus, the "refreshing" of the markets at an unprecedented level. It is easy to understand that together the two factors mutually strengthen each other.

From competitiveness through price to competitiveness through innovation

The abovementioned development model has been greatly strengthened by the advances in science and technology, at a time when very recent science-based sectors of activity are emerging with promising economic potential. If the car industry, the heavy metalwork industry, petrochemicals can be considered the base sectors of the Fordist model, then microelectronics, telecommunications, robotics and biotechnologies will be the base of the new kind of development.

However, the 'new technologies', namely the ICT, are more than just new sectors, they can be used by all sectors of economic activity giving rise to greater productivity and far-reaching changes in production methods.

Price remains an important factor in competition but its importance is relative insofar as entering the market before all other competitors is the decisive factor for gains in business profitability so that advantage can be taken of the period in which it is possible to sell without competition. The imitation and dissemination of technology is extremely important but declines progressively as the market becomes saturated. Hence, the invention of new products acquires utmost importance in that it allows the systematic creation of new markets. There are two other major consequences of this model: science represents a new productive factor,[4] like capital and labour; and completely different skills based more on "intellectual work" (the so-called "knowledge workers") that demand higher levels of education are required to sustain this model.

In light of the above, the following table summarises the characteristics that define the two standard models[5] of competitiveness. The aspects we consider most relevant to the problem in hand are specified.

The transition from one model to the other demands betting in the creation of new companies and the development of new sectors. Different authors have also argued that it is possible to modernise traditional sectors through innovation on the basis of knowledge accumulated locally;[6] this implies the recomposition of the business base and heavy investment in education and training. Indeed, there is broad consensus among experts on the unavoidable link between education levels — so-called human capital (Becker, 1964) —

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4 Even though science and its applications have always fuelled economic growth, this issue is posed nowadays in a completely new way. See Luísa Oliveira (2008) for a more detailed study of this question.

5 Standard models — in the sense that each type tells us what is specific to this model in relation to the other and not what is exclusive. In fact, no companies, regions, sectors or countries are characterised by one of these types.

6 See Luísa Oliveira and Raul Lopes (1996) on the innovation and recomposition of skills in traditional sectors, namely the glass and moulds sectors.

Table 6.1 Ideal types of competitiveness models (basic characteristics)

Factors	Conventional competitiveness model	New competitiveness model
Products	Same products or diversification of "*standard products*"	New products
Length of product cycle	Fairly high	Very low
Work organisation	Fordist	Multi-specialised teams (semi-autonomous groups)
Standard profile of job qualifications	Low-skilled	High-skilled
Executive rate	Low	High
Importance of postgraduate training	Low or non-existent	Fundamental
Type of training	Uniform	Diversified
Basis of competition	Product price	Rate of new products
Productive factors	Tangible factors (capital and labour)	Tangible factors (capital and labour) and intangible factors (S&T)

and economic growth, as well as between those levels and technical progress (Krueger and Lindahl, 2001). Or, as Aghion and Cohen said more recently, "(…) the stock of human capital conditions the ability of a country to innovate and/or catch up with more developed countries (…)" (Aghion and Cohen, 2004: 19).

The development of the education levels of the working population in Portugal

It is a known that the education levels of the Portuguese population are lower than other countries and that this is one of the greatest obstacles to its transition to another model of competitiveness that fosters the knowledge society.

Table 6.2 shows the gap between OECD countries and Portugal at the secondary and higher education levels.

Despite this disadvantageous position and its significance in terms of the country's competitive disadvantages, technical capacity and difficulties in integrating in a Europe of knowledge, Portugal has gone a long way in closing the gap in recent decades. This is illustrated in table 6.3.

These indicators have undoubtedly evolved significantly in just four decades. When the investment the country makes in education is occasionally referred to as being unproductive — given the results in comparative

Table 6.2 Education levels of the population by age group in Portugal and OECD countries (%)

Country	25-64	25-34	35-44	45-54	55-64
Percentage of the population that has completed secondary education					
Portugal	20	32	20	14	9
Average for OECD countries	64	74	69	60	49
Percentage of the population that has completed higher education					
Portugal	9	14	10	7	5
Average for OECD countries	23	27	24	21	15

Source: OECD, Education at a Glance 2003 (pp. 47-60).

Table 6.3 Education levels of the population in Portugal (%)

(percentages)

	1960	1970	1980	1990	2000
Illiteracy rate	33.0	26.0	19.0	11.0	9.0
Students enrolled in higher education versus population aged 18-22	6.0	7.0	11.0	23.0	53.0
Percentage of the population with a middle or higher level of education	0.8	1.6	3.6	6.3	10.0

Source: General Censuses.

Table 6.4 Education levels reached by the employed population (1991-2001)

Years	No schooling	Basic Ed. (cycle I; grades 1-4)	Basic Ed. (cycles II & III; grades 5-6 / 7-9)	Secondary education	Higher education
1991 (4.129,7)	171,158 (4.0%)	1,881,002 (45.5%)	1,178,586 (28.5%)	471,096 (12.0%)	420,847 (10.0%)
2001 (4.650,9)	83,165 (2.0%)	1,426,674 (30.6%)	1,335,535 (29.6%)	1,026,680 (22%)	778,893 (17.0%)

Source: General Censuses, 1991 and 2001.

terms — it is perhaps forgotten that we not only began much later but our starting point was different. One of the perverse effects of our historical specificity is that the democratisation of access to education has benefited primarily the younger generation. For example, the 9% illiteracy rate in 2000 is a matter of concern that is due largely to the fact that there are still segments of the older generations in the working population who had no access to schooling or did no more than compulsory education which was 4-6 years at the

time. Serious, though not always continuous, investments[7] have undoubtedly been made in adult education in order to resolve this problem.

Table 6.4 shows the evolution of education levels of the employed population in the 1990s in greater detail.

As can be seen, there is a positive evolution at all levels, with less educated groups declining significantly while more educated groups show a considerable increase. It is particularly interesting to note that the rate of employed people with secondary education rose from 12% to 22% between 1991 and 2001 and also that higher education rose from 10% to 17% in the same period.

Segmentation in employment

It is known that historically the levels of schooling have restricted access to the ranks of the various occupations, thus contributing to defining the segmentation of the labour market on the one hand (Piore and Sabel, 1984) and to drawing a certain profile of social stratification on the other.

The 2001 census was used to select a set of indicators[8] with the aim of characterising the segmentation of the employed population in Portugal, taking into account qualification levels, occupations, sectors of activity,[9] gender, and age. The theoretical assumption was made that the "primary segments" would be closest to the typical patterns of the knowledge society and that the "secondary segments"[10] would theoretically be the most critical and warranting special attention.

A multiple correspondence analysis was performed in order to understand what configurations appear in the occupational field in Portugal when selected indicators are combined.[11] The interpretation of the relative positions of the multiple categories of the indicators used led to the identification of both the segments that define a certain stratification of the employed population

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7 The creation of ANEFA is an example of this; ANEFA is an institution with great potential to respond to the adult education problem. For an analysis of this question, see Isabel Melo e Silva, José Alberto Leitão and Maria Márcia Trigo (2002).

8 The indicators are as follows: qualification level, occupation, sex, age and sector of activity.

9 For the economic activities of the industrial sector, we used the Classification of Manufacturing Industries by Technology Intensity adopted by the OECD and Eurostat. Services were classified by knowledge intensity on the basis of the classification presented by the OECD in the collection Science, Technology and Industry Scoreboard (2001 and 2003).

10 Our use here of the expression "primary segments" is influenced by the theory of segmentation, which means that "primary" and "secondary" refer, respectively, to the most and the least qualified segments (Michael Piore and Charles Sabel, 1984).

11 Also known as homogeneity analysis (HOMALS). For an explanation of this multivariate analysis method, see Helena Carvalho (2004).

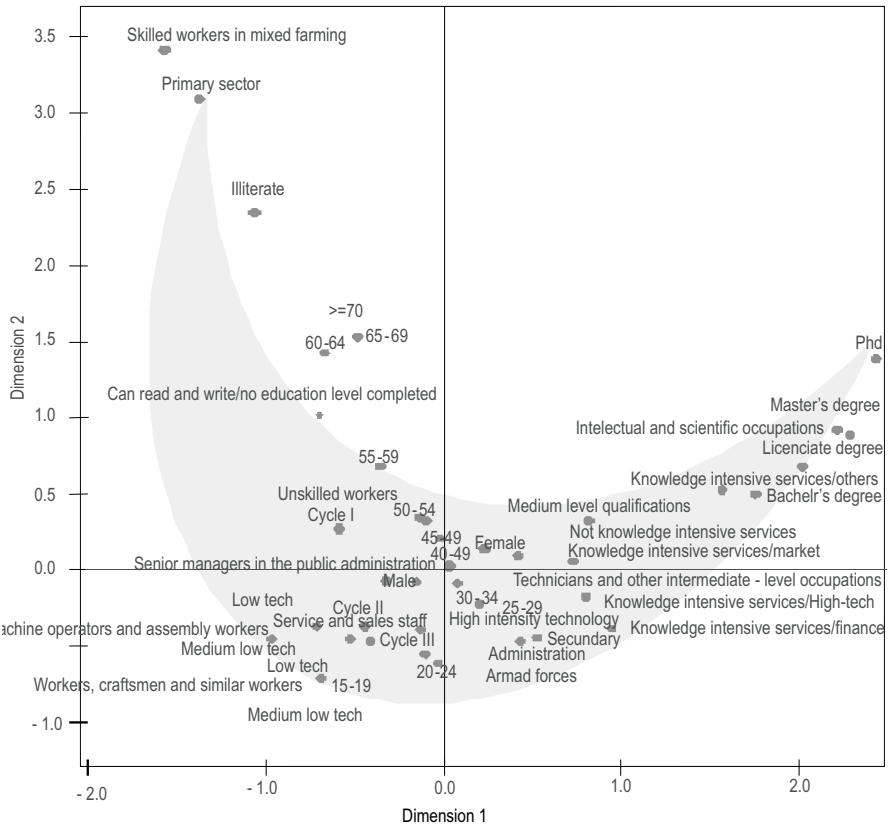

Figure 6.1 Segmentation of the employed population in Portugal

and the indicators that contributed most to the definition of these segments and, therefore, their relative importance.

On examining the distribution of the indicators in the plane defined by the two axes, we see that the positions of the qualification levels present a shape that is roughly parabolic (figure 6.1). Indeed, the qualification levels are distributed in a hierarchical form that starts with illiterate people, those who can read and write but have no education level, and the intermediate levels of Cycles I, II and III (Grades 1-9) — with the latter two corresponding to the vertex of the parabola; these are followed by secondary education and the middle, *bachelor* (3-year degree course), licentiate degree (4-5 years), master's and PhD levels in an upward movement. This distribution of qualification levels

is quite well accompanied by occupation and also, to a certain extent, by sectors of activity.[12]

The structuring effect of the first dimension must be stressed before moving on to a more detailed interpretation of the association between these indicators. It produces a kind of *dualisation of the employed population*, according to the qualification criterion, whether expressed in qualification levels, occupations or even sectors of activity. It is as though there were an opposition between older, less educated workers, less skilled occupations and technologically less intensive sectors[13] (dimension 1) and more highly educated workers, more highly skilled occupations and more knowledge intensive sectors (dimension 10).

The second dimension produces another distinction and contrasts the two extreme situations observed above — on the one hand, the older, less educated workers and, on the other, those who have higher levels of education, with more skilled professions — with what might be called *intermediate segments*. The latter include younger workers (15-39 years of age) who have completed Cycles II and III (Grades 5-9) as well as workers with a secondary education (Grades 10-12), those with manufacturing occupations, clerical workers, the Armed Forces and intermediate technicians.

In addition to this general reading of the two most important dimensions, the groups that stand out in figure 6. 1 may also be characterised and considered as *segments of the employed population*. Two of these segments, already referred to above, are positioned at the extremes of the parabola. Another four are intermediate segments which are spread along this same parabola in a relative hierarchy according to the qualification criterion. Reading from left to right, from the top left-hand quadrant, we have:

— *segment A* associates people who are illiterate or have very low education levels — they can read and write but have not completed Cycle I or a similar level —, unskilled workers, older workers (over 50 years old) and the sector. This segment is itself stratified due to the inclusion of workers from the sector with skilled occupations, such as skilled workers in mixed farming;

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12 These are also the indicators that contribute most to the definition of the first axis. Age and sex, in contrast, make a relatively minor contribution. This can be confirmed in figure 6.1, through the proximity to the origin of not only the male and female categories but also most of the age groups.

13 In spite of the presence of the medium/high-tech sector; this is justified in that it is a sector that includes manufacturing — and not design — activities and hence, also, proximity to the category of workers. In this respect it is worth underlining the margins of ambiguity in the labelling and classification processes for statistical purposes and also in the taxonomies — for all their usefulness for certain purposes — as Alain Desrosières and Laurent Thévenot (2000) describe well.

— *segment B* covers senior managers in the public administration and senior and top business managers and has a marked proximity to the male sex;
— *segment C* associates certain occupations — machine operators and assembly workers, labourers and factory workers, craftsmen and similar workers, service and sales staff — in younger age groups, with Cycle II and III qualification levels and with a significant group of activity sectors referred to here as low tech, medium low tech and medium high tech sectors and non-intensive services in market knowledge. They are essentially all the industry sectors and a group of services associated with wholesale and the distribution of electricity, gas, water etc. In spite of its proximity to the origin, it should be noted that the male sex is represented in the quadrant containing *Segments B* (as mentioned above) and *C*;
— *segment D* associates technicians and other intermediate-level occupations, administrative and similar workers and the armed forces with secondary education, aged between 25 and 39 years, in the so-called high tech activity sectors, intensive services in high tech knowledge and knowledge intensive financial services. These sectors include industries that, by their nature, demand a rather more skilled workforce, e. g. the pharmaceutical industry, telecommunications equipment manufacturing (among others), services linked with telecommunications, computing… and other services linked to economic activities involving financial intermediation, insurance and other related activities;
— *segment E* associates medium level qualifications with the female sex, with a basic concentration in knowledge intensive market services and other services that are not knowledge-intensive. The first sector covers various transport activities and other services to companies, including legal, advisory, accounting, auditing and similar activities. The second sector essentially involves the public administration, various association activities, etc;
— lastly, *segment F*, associates higher qualification levels with intellectual and scientific occupations and other knowledge intensive services, which basically means all teaching and cultural activities in a broad sense.

Generally speaking, some important conclusions can be drawn from this analysis. The first is that there is a marked segmentation in the employed population — a segmentation that is stratified according to academic qualification levels, occupation and sector.

Secondly, the strata at the bottom of this hierarchical pyramid are very unskilled and include in particular the older workers who are also the least educated, i.e. illiterate, without a school certificate or with just the first cycle.

Immediately above this stratum in this hierarchical organisation, the analysis pinpoints the group of younger people with very low education levels, i. e. those who have not completed compulsory education and those who have reached only that level. While the historical reasons behind the configuration of the segment covering older people is well-known, as mentioned above, the situation of the younger group is of great concern and can only be explained by failure and premature exit from basic education. This means that the project for universal basic education has not yet been fulfilled.

It is also important to note that these young people have a place in the labour market, both in services and industry, in various sectors that are knowledge and technology intensive to varying degrees. They probably represent a segment of undifferentiated labour that is good for sectors that are also very unskilled in Portugal[14] despite their classification.

Another conclusion drawn, or question raised by this data is that the most knowledge intensive sectors, be they in the high tech or finance field, are associated with an intermediate level of occupation and medium levels of schooling, including secondary. Moreover, the degree and post graduate levels of education "are moving away" from these sectors and concentrating, above all, in activities linked to education and culture. But the building of the knowledge society assumes that these groups with degrees and postgraduate qualifications spread across the entire productive sector and society in general, in that they play a fundamental role as intermediaries between university and industry and are a key vehicle for disseminating the scientific and technical knowledge. The extension of our analysis to graduates and those with higher degrees is therefore justifiable. This follows in the next point.

Degree-holders and the knowledge society

In 2001, the breakdown of holders of higher education certificates by academic degree reveals that 93.4% were graduates and 6.6% had postgraduate degrees (table 6.5) and just 2% had a PhD. In terms of evolution, it is found that the number of graduates more than doubled in both categories.

So which sectors of activity most absorb these first and higher degree holders? What are the subject areas? What occupations do they enter? How can the occupational space of this segment of the employed population be characterised?

The Multiple Correspondence Analysis combining these indicators i. e. activity sector, occupation and study area, allowed us to identify two axes structuring the occupational space under analysis (figure 6.2).

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14 On this, see Luísa Oliveira (2004).

The first axis (dimension 1) separates the sectors linked to health, education[15] and cultural activities, and the related occupations and study areas, including the exact and natural sciences, and sets them against all other sectors, occupations and study areas.

The second axis (dimension 2) produces another interesting distinction, positioning the study areas associated with culture, social sciences, law, commerce and administration on the one side and science and technology on the other.

With regard the first axis, it should also be noted that it is quite complex to interpret (dimension 10) the association of the sectors with occupations and study areas — with the exception of the health and education sectors (dimension 1) due to the relative proximity of many of these sectors. This can be attributed, essentially, to two causes. On the one hand, most occupations — with the exception of health and education professionals mentioned above — are distributed over different sectors of activity and in some cases with very similar relative weights. On the other hand, there is also no linear correspondence between areas of education and sectors of activity.

The configurations of these associations is clarified by a cluster analysis[16] which indicates eight clusters or segments, the characteristics of which are described below.

Cluster 1 (C1) may be defined as the *health cluster*, with a relative weight of 11.5%. It includes almost all the health professions[17] and study areas covering health (98.7%), particularly associating itself with the sector other knowledge intensive services.[18]

Clusters 4 and 6 (C4 and C6) are *education clusters*. They are distinguished by the fact that *cluster* 4 (7.2%) includes particularly the education occupations referred to here as intellectual — higher, secondary and Cycle II and III teachers — whereas *cluster* 6 (24.1%) includes these as well as mid-level staff such as basic education teachers, kindergarten staff, etc. Another interesting difference between these two education clusters is that the first includes the study areas linked with science and technology and has the exact and natural sciences as a distinctive feature — whereas *cluster* 6 covers the areas more closely connected with arts and humanities, education sciences, teacher training etc. They are both strongly associated with the 'other knowledge intensive services' sector.[19]

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15 The sectors classified as other knowledge intensive services are, basically, education, human health and veterinary activities, and media- and culture-related activities strictly speaking.

16 For a detailed explanation of the technical aspects of the connection between homogeneity analysis and cluster analysis, see Helena Carvalho, op. cit., Chapter 6.

17 From doctors and nurses to mid-level staff such as specialised professionals, midwives, traditional medicine specialists, etc.

18 Which includes human health and veterinary activities, as already mentioned.

19 Which includes all education activities.

Table 6.5 Distribution of degree-holders in the population resident in Portugal, by degree, 1991 - 2001

Degree	1991		2001	
	Nº	%	Nº	%
Bachelor and licentiate degree	255,863	93.6	629,297	93.4
Master's and PhD	17,372	6.4	44,797	6.6
Total	273,235	100.0	674,094	100.0

Source: INE, General Census, 1991 and 2001.

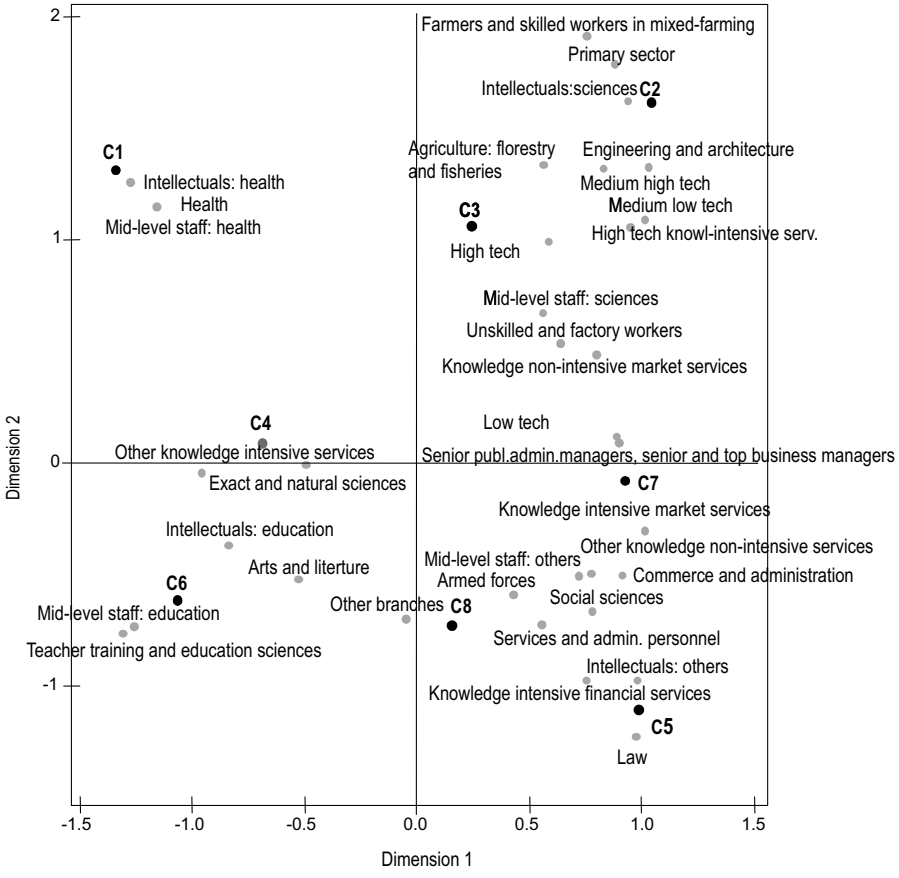

Figure 6.2 Occupational area of first and higher degree holders

Cluster 8 (C8 with 9.4%) may be termed the cluster of the armed forces and specialised mid-level staff in the public administration. Accordingly, it is best characterised by the professionals in the armed forces and the specialised staff *mid-level staff: others*. This cluster contains a varied set of study areas and the main feature in this area is its multi-disciplinary nature. Indeed, while *other branches* is the area that defines it, *par excellence*, other areas have a relatively important weight although they are not typical, e.g. the social sciences, and commerce and administration. The sectors that mark the cluster distinctively are other knowledge intensive services[20] and other knowledge non-intensive services.[21]

Cluster 5 (C5 with 17%) is the services and public administration cluster. It is distinctive from the occupational viewpoint because it includes the majority of *intellectuals: others*[22] and administrative and service personnel. The predominant study areas are law and social sciences, as well as commerce and administration. The associated sectors are as follows: knowledge intensive financial services, other services that are not knowledge intensive and knowledge intensive market services.[23]

Cluster 7 (C7 with 13.6%) is that of senior management in the public administration, senior and top management in business, the study areas covering commerce and administration and including social science graduates, and other study areas with less weight. The most important sectors in this group are the low tech sector — which, generally speaking, means industries with low added value — and services not intensive in market knowledge, which are basically commercial activities.

Clusters 2 and 3 (C2 and C3) are the clusters for industries and services with greater added value. Cluster 3 (3.2%) is characterised by the inclusion of a large percentage of science intellectuals, as well as mid-level scientific staff in the various study areas associated with science and technology, in particular agriculture, forestry and fisheries. The sectors that distinguish this cluster are those that are included in the high-tech group, although the sector knowledge intensive high tech services is also well represented in this cluster.

Finally, cluster 2 (14.1%) is the cluster, *par excellence*, of the study areas of engineering and architecture; like the previous cluster, it also includes a large

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20 Besides education and health, to which we have alluded, the other sectors included in this group are cultural activities (cinema, radio, television, and other artistic activities, along with news agencies, libraries, record offices, museums, etc.).

21 Which include the public administration, defence, the legal system, security, civil defence, etc. and activities connected with economic, trade union and employers' organisations and other associations.

22 Which include specialists in administrative and commercial occupations, archivists and similar personnel, public administration specialists, etc.

23 This group also includes various transport and hire sectors, as well as activities covering auditing and tax consultancy, architecture, engineering, etc.

part of agriculture, forestry and fisheries. It is characterised by the inclusion of intellectual professionals in the sciences and farmers and skilled workers in mixed-farming. These professionals are distributed over various sectors, as seen above, but the most marked features here are the primary sector and medium high tech sectors, as well as the medium low tech sectors and knowledge intensive high tech services.

This information is summarised in table 6.6. It presents the most distinctive features of the eight clusters characterising the employment segmentation of first and higher degree holders, their relative weight and the way in which sex and the different education degrees considered in the area under analysis are associated or not with each of these clusters.[24]

In short, it can be said that many of the study areas cut across the various sectors and that the effort made to educate qualified professionals has had a significant impact, in particular on building and strengthening the public health and education sectors, whose segments represent 42.8% of the total. The impact has also benefited the public administration. It must also be stressed that the segment covering knowledge intensive high tech industries[25] and services[26] paradoxically represents just 3.2% and that the total for knowledge intensive high tech industry[27] and services[28] amounts to 17.3% of the total weight of all segments.

This means that industry and a significant part of services with greater added value only absorb a small percentage of highly qualified professionals: it is clear that the construction of the knowledge society in Portugal requires these sectors to be more receptive to these professionals if they are to expand and upgrade.

Conclusion

Following an analysis of the employed population in Portugal from the perspective of building the knowledge society, it can be concluded that we have an *occupational space* that is stratified according to the criterion of skills,

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24 It should be mentioned that age was also considered for the characterisation of the clusters. However, there were no important differences, since there is no association between typology and age (Cramer's V ˜ 0).

25 High tech sectors refers to industrial manufacturing activities that cover pharmaceutical products, electronic components, other telecommunications equipment, measuring, optical, photographic and filmmaking instruments and apparatus, aircraft and spacecraft, etc.

26 Knowledge intensive high tech services include postal and telecommunications services, computer consultancy and related activities, the maintenance and repair of office machines and computer equipment, etc, in addition to R&D activities in the physical and natural sciences and social and human sciences.

27 Clusters 2 and 3 also cover the whole of industry.

28 See note 27.

Table 6.6 Summary of the characterisation of the occupational area of first and higher degree holders

Segmentation in employment	Dominant features of the segments	Other characteristics of the segments
Health segment (cluster 1, with 11.5%)	– Health professions – Study areas involving health – Other knowledge intensive services	Women Bachelor Licentiate degree [(1)]
Education segment I (cluster 4, with 7.2%)	– Basic (Cycles II and III), secondary and higher education teachers – Exact and natural sciences – Other knowledge intensive services	Women Licentiate degree Master's PhD
Education segment II (cluster 6, with 24.1%)	– Basic education teachers (Cycle I), kindergarten teachers etc. – Arts and humanities, education sciences, teacher training etc – Other knowledge intensive services	Women Bachelor Licentiate degree
Segment covering Armed Forces and mid-level public administration specialized staff (cluster 8, with 9.4%)	– Armed Forces professionals and other mid-level specialized staff – Social sciences, commerce and administration, other branches – Other knowledge intensive services; other non knowledge -intensive services	Women Licentiate degree
Services and public administration segment (cluster 5, with 17%)	– Other intellectuals, admin. Personnel and services – Law, social sciences, commerce and administration – Knowledge intensive financial services; Other non knowledge-intensive services; Knowledge intensive market services	% Women slightly / > % Men Licentiate degree
Segment covering senior public administration. managers and senior and top business managers (cluster 7, with 13.6%)	– Senior public administration managers, senior and top business managers – Commerce and administration, social sciences – Low tech sectors; Knowledge intensive market services	Men ≈ Women Bachelor Licentiate degree
Segment covering industries and services with greater added value (cluster 3, with 3.2%)	– Intellectual professionals in the sciences, mid-level staff in the sciences – Science and technology – High tech; Knowledge intensive high tech services	Men ≈ Women Bachelor Licentiate degree
Segment covering the primary sector and other industries and services (cluster 2, with 14.1%)	– Intellectual professionals in the sciences, farmer and skilled workers in mixed-farming – Engineering, architecture, agriculture, forestry etc. – Primary sector; Medium high tech sector, medium low tech sector, knowledge intensive high tech services	Men Bachelor Licentiate degree

[(1)] Though (for obvious reasons) the licentiate degree category seems to have the greatest weight among all the clusters, we chose to put it as a characterizing, though not distinguishing element. The other qualification levels – bachelor, master and PhD – will then make the distinction

whether that is reflected in qualification levels, occupations or even in the sectors of economic activity. In this stratification, the segments closest to the top of the hierarchy are also those that are closest to the ideal-type profile of the so-called knowledge society, though they coexist with broad economic sectors that absorb manpower that has little or not even the compulsory schooling.

If we just consider the segment of the employed population with first and higher degrees — as a rough indicator of so-called knowledge workers —, it can be seen that these workers are distributed over all sectors of activity; however, this distribution reflects quite an imbalance in favour of the public sector, especially in the health and education sectors which absorb most of these workers. This situation reflects the effort made in recent decades to open up and democratise education from pre-school to higher levels and to ensure the growth and modernisation of the health and social security systems, as well as the personnel for the central and local public administration.

The limited size (3. 2%) of the segment that includes industries and services with greater added value is also indicative of the Portuguese situation: it is known, at least theoretically, that this segment is the most apt for improving technological innovation. Expansion in this segment and, therefore, the effort to build the knowledge society involve boosting competitiveness and innovation in the other segments of the private sector, which demands a greater opening up of these sectors to qualified professionals.

It must also be stressed that there is no correspondence between study areas, activity sectors and even occupations — with the exception of highly specific areas such as those linked to health -, which confirms the thesis of the lack of linearity between education and employment.

References

Aghion, Philippe, and Élie Cohen (2004), *Éducation et Croissance,* Paris, La Documentation Française.

Becker G. (1964), *Human Capital. A Theoretical and Empirical Analysis, with Special Reference to Education*, New York, Columbia University Press.

Boyer, Robert (1981), "Les transformations du rapport salarial dans la crise: une interprétation de ses aspects sociaux et économiques", *Critiques de l'Économie Politique*, 15/16, pp. 185-228.

Carvalho, Helena (2008), *Análise Multivariada de Dados Qualitativos. Utilizações da Análise de Correspondências Múltiplas com o SPSS*, Lisbon, Edições Sílabo.

Desrosières, Alain, and Laurent Thévenot (2000), *Les catégories socio-professionnelles*, Paris, La Découverte.

Göttelmann, Gabriele (1989), *Stratégies d'Innovations Technologiques et Politiques Educatives*, Paris, UN.

Krueger Alan B., and Mikael Lindahl (2001), "Education for growth: why and for whom?", in *Journal of Economic Literature*, XXXIX, pp. 1101-1136.

Lindley, Robert M. (1999), "Knowledge-based economies: the European employment debate in a new context", in *International Hearing for the Portuguese Presidency of the European Union*, Lisbon, Cabinet of the Prime Minister.

Madelino, Francisco (2003), "Produtividade, política de emprego, externalidades-questões de financiamento: o caso português", in *Sociedade e Trabalho*, 21, Lisbon, Ministério da Segurança Social e do Trabalho, pp. 28-58.

Mattelart, Armand (2003), *Histoire de la société de l'information*, Paris, La Découverte.

Moniz, A. Brandão (ed.) (2001), *Futuros do Emprego na Sociedade da Informação*, Lisbon, Direcção Geral do Emprego e Formação Profissional.

OECD (2003), Education at a Glance, Paris, OECD.

OECD, Science, Technology and Industry Scoreboard - 2001.

OECD, Science, Technology and Industry Scoreboard - 2003.

Oliveira, Luísa (2004), "Causas do desemprego e da precariedade: à procura do modelo perdido?", paper to the panel on *Desemprego e Precariedade: a outra face do trabalho*, V Congresso Português de Sociologia sobre *Sociedades Contemporâneas, Reflexividade e Acção*, Braga (Portugal), University of Minho.

Oliveira, Luísa (2008), *Sociologia da Inovação*, Lisbon, Celta Editora.

Oliveira, Luísa, and Raul Lopes (eds.) (1996), *Estudo socioeconómico da Marinha Grande e Área envolvente, avaliação de potencialidades*, Lisbon, Ed. IEFP.

Piore, Michael, and Charles Sabel (1984), *The Second Industrial Divide, Possibilities for Prosperity*, New York, Basic Books.

Ranson, Stewart (1994), *Towards the Learning Society*, London, Cassel.

Rodrigues, Maria de Lurdes (2003), "Qualificação da população activa em Portugal 1991-2001", in AAVV, *Novas Políticas para a Competitividade*, Oeiras (Portugal), Celta Editora, pp. 257-266.

Rodrigues, Maria de Lurdes, and João Trocado Mata (2003), "A utilização de computador e da Internet pela população portuguesa" in *Sociologia, Problemas e Práticas*, 43, pp. 161-178.

Schumpeter, Joseph A. (1996), *Ensaios. Empresários, inovação, ciclos de negócio e evolução do capitalismo*, Oeiras (Portugal), Celta Editora.

Silva, Isabel Melo, José Alberto Leitão, and Maria Márcia Trigo (2002), *Educação e Formação de Adultos, Factor de Desenvolvimento, Inovação e Competitividade*, Lisbon, Ad Litteram.

Soete, Luc (2000), "Towards a 'European' Learning Society", paper to the seminar *Towards a Learning Society, innovation and competence building with social cohesion for Europe*, Cascais (Portugal).

Chapter 7

Transformation and resistance
Technology, economy and society

João Freire

About ten years ago, I published an analysis of the main "modernising changes" that had affected companies and organisations since Portugal joined the EEC using sociological research done until then as my main source of information (Freire, 1998).

"Change" and "modernity" were concepts that questioned the whole continuum of this project but that I discussed in my own research, in a study of the functioning of corporate organisations and people's direct and intermediate jobs, which occupied my time particularly from 1989 to 1992 (for example: Freire *et al.,* 1995 and Freire, 1996).

Because the exercise must be more synthetic (while the field of analysis is broader, as the title indicates and you will see below) it seems preferable to use as our source of information research work that we have done - most which at the CIES - and set to the challenge of making some interpretations of the development of Portuguese society in the final years of the 20th century, a time frame that is understandable and justifiable but that I will not limit too strictly, leaving that for another time. Let us just say that, roughly speaking, we are addressing the period following Portugal's accession to the European communities, i. e. around 20 years of prosperity interspaced by some recessions and including two successive cycles of political governance led by the Social Democratic Party and Cavaco Silva and by the Socialist Party and António Guterres.

The changes experienced by Portuguese society are still the focus of our attention, although with a broader frame of reference. We can say that if, on one hand, companies as basic functional units of the economy continue to be the centre of our concerns, the categories of analysis used mean we can now consider not only industrial organisations (as we did in the early 1990s) but also service providers in a model of working system that I have already called "corporate" and that tends to blur the differences between "sectors" (primary, secondary and tertiary), in benefit of a "general model", marked by the

so-called information and communication technologies (ICTs) and by the paradigm of "flexible management", dominant, winning references in our globalised economy.[1] In this framework, we still have the main differentiation that we think is relevant for "modern" (rather than "traditional") micro-companies as they conjugate flexibility and intensive use of ICT with a small affective, interactive responsible staff.

One of the consequences of this is a blurring of the different organisational cultures forged in traditionally differentiated institutional contexts. We are thinking of "bureaucratic" cultures (often found in public and state bodies), "service" cultures (in some other public services or in associations) and even "pedagogical" cultures (in schools) and "scientific" cultures (in research organisations) and how they are currently being attacked by the "business" culture (company, initiative, results), which is absolutely dominant in the economic sphere.

The diffuse concept of "crisis" which has been looming over the "public services" (health, education, social security, transports, information, etc.) and their respective different forms of "privatisation" or "incorporation" as an alternative to their funding by the State Budget clearly shows where we can extend the "corporate model" and the mixed and modulated forms of its application.

Another case of extending the references of these analyses is the different incidence of space and (physical) distance on processes as a result of the changes in the perception of time and duration caused by new ICTs and the mass media. We can appropriately say that we are experiencing world events "live and in real time". Synthetically, though too simplistically, we could say that "place" and "isolation" are only apparent, which may mean some loss of sense of that which has so far been considered "singular" (specific to or typical of a place or community) and the temptation of thinking that we look at "everything" (i. e. *anything*) as if it was part of a "general process", with reproductions, adaptations and reactions but with no place for authenticity or surprise.

Within this framework, comparative methods (e. g. between Portugal and Europe or of "regional inequalities" in the country) would need to be revised. In any case, in practical terms, we will only consider an occasional comparison with international data.

Changes in companies

This was the subject that first started a line of research aimed at following some of the main effects of Portugal's joining Europe in 1986.

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1 See Freire (2001), in particular chapters 1.5 and 1. 7. I also analysed "production systems" for material production and an embryonic "PWU (processing-work-user) operating system", for analytic applications in services.

In this first research (Freire *et al.,* 1991), we examined two main types of change — *technological and organisational* —, while devising a new concept of *production system* and creating two systematic indices of forms of organisation and management of corporate organisations: one regarding *structure* and the *organisational functioning*.

Using a representative sample of Portuguese industrial companies with more than 20 employees, we found that between 1986 and 1990 inclusive, there had been considerable investment in improving production equipment. Eighty-three percent of the companies had bought new machines and in more than half the cases (58% of the total) they were automated production machines or systems, 62% had made improvements in product control and 57% had changed their layout with new production lines or reorganisation of the work process. Also, 54% had moved to new premises and 41% had improved logistics (warehousing and internal movements of materials that the French call *manutention*). In addition to these changes in manufacturing processes, 88% of the companies surveyed had computerised their services and processes, although often to an elementary extent (we were in the 1980s!), for example, limited to salary processing or stock management.

On the other hand, 58% of these companies had made organisational changes, though only 29% sought greater worker participation or involvement in organising tasks[2] or the production process.

Finally, with regard to detecting signs of socio-cultural change in workers' behaviour within the companies, the most obvious was a desire for more socialising between co-workers (around 45%), less interest in joining trade unions (41%) and latent dissatisfaction with repetitive manual work (expressed quite irregularly and differently depending on the source of information: 22% according to the company's human resource director, but 41% according to line supervisors!).

The main reasons given for making changes in the companies were basically divided between the need to increase production (to meet demand), improve product quality and reduce production costs (to face up to competition). The main difficulties encountered were a shortage of qualified personnel, technical problems caused by the changes, problems with reorganising the work process and poorly trained workers. On the other hand, there was a general recognition of the lack of any significant attitudinal resistance by the workers to technical and organisational changes.

For coming years, the companies expected to continue to invest in equipment and facilities but with greater emphasis on improving quality control to meet the demands of the new European markets. Almost a third of the companies expected to invest in "research and development" (R&D).

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2 Job enlargement, job enrichment, etc.

However, all together, the analysis confirmed that we were looking at a dominant situation of large-scale specialisation in production based on very poorly qualified labour (Taylor-Ford model), for export (clothing, footwear, etc.) and, on the other hand, there were clear signs of excessive bureaucracy, formalisation and rigidity in organisational processes and of social micro-cultures that were highly separated and hierarchised.

Ilona Kovács has been one of researchers dealing most with this subject, with countless empirical studies of cases in Portugal. Recently, reviewing the changes in previous years, she said that the Portuguese situation had a lot of contradictions. She wrote, "The logic behind the modernisation of companies that invest in new technologies, whose competitiveness has been based on low salaries, may develop either towards a neo-Taylorist-Fordist model or towards the lean production model". And she adds, "One of the weakest points of companies' modernisation processes is the low level of worker involvement". On the other hand, "Companies with traditions of customer and quality oriented production find it easier to adopt principles based on new production, not only lean production, but also the anthropocentric model, with particular emphasis on the development of collaboration with customers and partnerships with suppliers in enhancing human resources (…), improving the information-communication system and implementing participative management methods" (Kovács, 2002: 107).

These comments illustrate the author's basic concerns that an acceptable model of work organisation should have employees and their quality of life as a basic reference and her conclusions that the adoption of a certain technology (especially current ones, thanks to their flexibility) does not necessarily mean adopting a single, inevitable model of worker involvement.

António Brandão Moniz has also devoted considerable work to researching the same subject. Using one of the many cases analysed as an example, the fishery sector, the author concluded,

> In addition to the available technological potential (shipbuilding, aquaculture, processing, canning, quality control, onboard instruments), it is mainly the potential arising from scientific knowledge and management strategies that will change present conditions. And this means profound cultural change with regard not only to the need to foster vocational training but mainly ethical aspects (responsible fishing, responsible consumption, use of scarce resources) and social and management aspects (negotiation, working conditions, quality of life at work, job security, joint accountability) (Moniz, 2000: 16).

Once again the focus is on the interdependence of factors conditioning quantitative and qualitative levels of productive outputs and the importance of socio-cultural variables.

Discounting certain nominal and conceptual fluctuations (the use of terms like modernisation with different meanings, etc.), the conclusions of these sociologists' research essentially converge with our own.

It was on the basis of these and other research works that, in 1997-98, we concluded that a decade after joining the EEC, our companies had experienced "changes, yes, modernisation, very little!" It was said,

> It is worth noting the size of the investment in improving technological production equipment and processes (and services), including materials, control, quality, commercial promotion, etc., with visible results in terms of productivity. This process, which benefited largely from community funds, helped many companies survive the shock of the opening-up of the markets. However, its results were highly conditioned by structural economic constraints — increasing competition, not only from Europe — and the contradictory effects of government economic policies (exchange, credit, tax, etc.). This effort towards technological and economic modernisation was not accompanied by similar attention or results in terms of the social and cultural dimensions of change. There was no lack of discussion and promotion of ideas as to the importance of "human resources", but possibly because many strategies failed and the "counterintuitive" effects of these processes were not avoided. Crucial points such as articulation of the concept of policies (e. g. education and vocational training) with their application in the field or the mediation between the resources at society's disposal (financial, infrastructural, procedural) and the way in which they can be used by the different players and micro-social entities, are among the main reasons why the systems seised up (Freire, 1988: 304-305).

In the 1990s, the question of innovation associated with competitiveness ran its course in Portugal, in terms of some government policies,[3] corporate practices,[4] theory and scientific research (see among others: Godinho and Caraça, 1999; Conceição and Ávila, 2001; Oliveira, 2008).

In 2001, 10 years after the first, we conducted another extensive survey using sampling of Portuguese companies, now extended to the tertiary sector and micro-companies. There were 51 industrial companies that we had surveyed in 1991 and were now revisited for a longitudinal analysis.

Benefiting from the conceptual advances in the meantime, we prepared a more elaborate collection of concepts, including:

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3 For example, the so-called information society, first with the Mission for the Information Society which later became the Operational Programme for the Information Society.

4 Several cases of best practices, always quoted a lot in official speeches and in the press, and may others in sectors as different as banking, motorways, vehicle inspection and repair, printing and publishing, biotechnologies, moulds and other exporting industries, military technologies, etc.

— a distinction between technological and organisation changes (classic), but here with a third essentially *social* dimension, such as express reference to people (their needs, plans and hopes), to the demands of citizenship in society, to articulation between micro and macro-realities (e. g. between the problems of urban transports and the complexity of the automobile mega-cluster) or between the company and the natural environment to which it belongs, etc.
— a clear conceptual differentiation between "simple" *change* (which only alters what already exists from an essentially quantitative point of view: more production, more consumption, etc.), *innovation* (potentiating later auto- and hetero-development with qualitative implications for the processes) and finally the concept of *modernisation*, which introduces to this terrain dominated by rationality of economic calculation values and references typical or civilisational modernity (some of them possibly classifiable by some as "post-modern"), such as the self-sufficiency of subjects or the basic equality and dignity of them all (e. g. "control of environmental effects", "the search for equality of people of both sexes", "special treatment for the disabled", etc.)
— a specification of the indicators adopted for the above concepts for the necessary analytical procedures, which this time were more synthetic and interpretative and less descriptive than 10 years before. To give an idea of this, we can say that we mainly explored *inter-sectoral* differences, considering the following aggregated analysis categories: industry and energy (including the extractive industries, water supply, etc), construction and public works, trade and catering, and services (including transports, financial and all other services). We also made a separate analysis of micro-companies (1 to 10 employees), whatever their activity.

Considering those obtained 10 years ago, the results of this research were very interesting and can be summarised as follows:

— industry is the sector of the economy where change, innovation and even modernisation seem to be most visible and significant. The dynamics of change are still found in most companies. However, this tells us nothing about how competitive they are, in view of the external differences and the dynamics of the countries that competed with us in the same period;
— "merely" technological changes continue to prevail over organisational and social change, although perhaps less clearly than 10 years ago;
— it is very instructive to see that, according to the data, there are more social processes (including innovation and modernisation) than organisational processes (of any kind). This shows the effects of the changes that

occur in the society inside our companies, while also illustrating persisting needs (often mentioned) in management (people, processes, projects, etc.);
— it is also interesting to note that "modernisations" (in their different dimensions) are more likely to occur in our companies than innovations. This once again shows not only companies' openness to society, but also our great difficulty in "changing creatively", which is not the same as the famous Portuguese "knack" for solving problems;
— although the inter-sectoral differences between industry, trade and services are clear, they seem to be getting more blurred in several aspects;
— there are clear differences in the results in the human dimension of companies. It is important to note the emergence of micro-companies where, in spite of their specificity and obvious limitations, we can see in them all the phenomena of change, innovation and modernisation found in larger organisations;
— in spite of the positive aspects observed, there are still many companies that are not dynamic, unproductive and badly managed, especially in trade, catering and some services and in many of the smaller companies.

We have already mentioned the fact that these new social and management problems also apply to types of organisation other than corporate ones. The most blatant case is certainly the public administration. Regarding the public administration (which we were unable to investigate directly), some reflection tells us that certain principles and parameters of its "reform" (so needed and apparently always being postponed) are not limited to mere "privatisation" of activities (previously done by employees and from "a point of view of unquestionable expense", now "corporised"), to the multiplication of forms and uses of the so-called "autonomous administration" or to the different forms of "public-private partnerships".

On the subject, we put forward three ideas with some degree of analytical novelty (Freire, 2003). First, was the idea that the so-called hard core *sovereign functions of the state* should not be confused with the "public administration", but rather considered in terms of its statutory apparatuses (almost always of an institutional-professional nature) and include the following different areas: elected political bodies, justice, the diplomatic service, the armed (and militarised) forces, the security, police, prison and protection forces, state intelligence services, public finance and services and institutions preserving the nation's historical heritage.

Second, we thought it was necessary to separate the concept of public administration from that of "services in the public interest". The latter should be reserved for services that, on one hand, are of interest to the general population (or important sectors) without being directly subject to the cost of

producing these services and, on the other hand, that can be provided by public institutions (and their employees) or on the free initiative of citizens or economic and social institutions. It is an alternative — or combination of the different possibilities — that must be determined with some pragmatism, for reasons of efficiency and economy. In any case, these services should be maintained under public authority, subject to controls of effectiveness and to principles of equity defined by the government — a visible entity whom citizens-consumers can hold accountable for any insufficiencies on the part of these services. This will include activities such as education, health, social security, transports and the media.

Finally, in what is left over of the public sector — which we would call the public administration, including central, decentralised, regional and local administration — there would have to be a reconfiguration stabilising essential institutions (sparing them from the effects of frequent changes in political orientation), allowing inter-departmental coordination (vital in certain fields), with the parallel restructuring of professional profiles in the public service based on segmentation of this nature: front office employees, administrative staff, decision makers, directors, coordinators, supervisors, specialists in inspection, control, auditing, appeals and arbitration, inspectors and enforcers of standards, tasks and processes, and finally experts in inspections, exams, assessments and other specialised acts.

This type of reconsideration of the *public domain* may be useful at a time of such hesitation, confusion, and "low-intensity ideological battles" in which we are living after decades of advances in "collectivism" and a still fresh "neo-liberal counter-offensive".

Let us return now to the world of economic and social activity. In a recent study using electronic ICTs[5] to which 933 urban entities with web mail responded, 4% of which were public, 6.5% in the tertiary sector and 89% companies (70% private limited companies, 16% public limited companies and 3% sole traders), we found, as expected, that there was a considerable number of public entities in the sectors of "education, health and solidarity" and "security, protection and control activities and institutions", with around 25% of the total in each of these activities. There were many public limited companies in "industry, construction and energy" (23%), "security, protection and control activities and institutions" (25%), "technological, research and planning activities" (26%) and, naturally, "financial and insurance activities" (45%). Finally, there was a substantial drop in private limited companies, which predominate in Portugal, in the "tourism, culture and leisure" and "education, health and solidarity" sectors,

5 This study was carried out in 2003, under the title *"Trabalho e cidade"* ("Work and the City") and shortly presented by the author during his "Last Lesson". See Freire (2004 and 2005).

in which, on the other hand, *tertiary sector* organisations[6] are present in force (with 25% and 19%, respectively). As we can see, an intentional, different re-categorisation of the concept of *sector of activity* shows some characteristics that the traditional classification can conceal.

However, more important to what we are dealing with here is how up-to-date the working processes are, indicated by the type of employee and the use of certain equipment by these entities. There are three relevant indicators. With regard to the *percentage of employees with university degrees in the organisation*, "financial and insurance activities" (71%), "technological, research and planning activities" (67%) and "education, health and solidarity" (63%) stood out, while those with the lowest qualifications were "industry, construction and energy" and "transports, retail and catering" (around 20%).

Let us now look at the *percentage of employees currently using computers or automatic computerised equipment*. On analysing this variable we find that the use of these kinds of equipment is almost total in "financial and insurance activities" and "technological, research and planning activities" and very intense in "education, health and solidarity" and other services. Curiously, "industry, construction and energy" is just the opposite and is the only sector where slightly less than half the employees have computers (48%).

In the third indicator, *purchases on the internet,* the average of 53% contrasts with the 13% (of all Portuguese companies) found in 2001 by Eurostat, which placed Portugal at a relatively low level compared to the rest of the European Union (Eurostat, 2001), or with 18% calculated in the same year by the Science and Technology Observatory (Observatório das Ciências e das Tecnologias, 2000-2001) — taking into account the differences in method and year of the survey.

In spite of the limitation inherent to the type of study, our results tend to show that a sizeable segment of Portuguese companies has been developing and updating in terms of technologies used and working processes and commercial activities. A crucial problem lies in the quantification of this "vanguard", in relation to all the country's companies and organisations and the perception and strategies of their institutional representation strategies and public influence (associations, federations, etc.).

Intense mobility and communication

The *information and communication technology* (ICT) sector is today considered to be a sensitive indicator of a winning type of economic growth in international competition. According to the last international source quoted, Portugal was on a level with the other European countries in terms of the percentage of

6 Including cooperatives, foundations, charities and other non-profit making associations.

companies using computers (89% in 2001), and companies' access to the internet and in a more backward group for companies with their own websites and involved in e-commerce.

In 1999 (according to the OCT *cit.*), the ICT sector in Portugal was used by about 100, 000 people, which corresponded little more than 3% of total employment, but their salaries were practically twice the national average. Half of them were in the "retail, repair and services" sub-sector. Compared to other countries, the percentage of the sector in total employment and average annual growth rate was quite flattering to Portugal, well above the EU average.

As for the number of people who use computers and the internet regularly, a study by Rodrigues and Mata (2003), working the data from official surveys from 2000-2001-2002, shows that in 2002, 47% of the Portuguese[7] used computers and 32% used the internet. These figures are, however, very unevenly distributed within the universe of reference. For example, if we consider the student population, the percentage of computer users rockets to 96% and internet users to 87%, while the figures are only 15% and 6%, respectively for pensioners and retirees. According to the authors, the use of these ICTs is mainly related to people's age and level of schooling.

In order to achieve a better understanding of the conditions of and obstacles to the use of technological tools, the authors classified the population in to three user groups: the "naturals" (students and highly educated people), the "criticals" (inactive, uneducated "computer-illiterate" people or pensioners) and the "potentials" (active people - around half of the total — of all ages with levels of education and other basic conditions) who are only moderately involved (35% use a computer and 14% the internet) and are therefore the most interesting group and who can be expected to progress sooner or later. It is mainly in this last group that the question of cost (buying a PC and connecting to the internet) really arises. In any case, reasons associated with an occupation or activity are those most often mentioned as explaining the use of ICTs. This is why they use them mainly at work.

It is also worth mentioning that the obstacle to computer use posed by *not knowing* (or not knowing enough) how to operate the equipment or the proper procedures (language, software, interaction with machines, etc.) seems to be quite small (2% to 7% who had not yet bought their own computer, depending on the user segment in question). However, this item seems to be *hidden* by other more pressing reasons, such as "too expensive" (17% to 28% of cases), "no use" (6% to 37%), "not a primary need" (4% to 10%) or "no children of school age" (1% to 6%) according to the three types of use: criticals,

7 The universe of reference according to stable international criteria includes residents aged 15 to 64.

potentials and naturals). In fact, for the potential users, the way of learning these new codes, languages and know-how shows insipient "formal" learning processes. Almost half learnt "from friends", a quarter were self taught ("practice") and only the other quarter through "formal" learning (school, courses, etc). We cannot therefore rule out the fact that the difficulties of self-study or informal learning (with friends or co-workers here and there) could be an important impediment to actual appropriation — first intellectual, enabling them to understand what a computer can do; then operational, mastering programmes and "exploring" the machines) — of these new ICTs by more people.

Let us briefly look at another point. As we all know, the penetration of *mobile phones* in Portugal has been massive and extremely rapid in the corporate, business and professional sphere and in the private sphere, reaching a wide variety of social types and groups. The mobile phone is a common tool today, used intensely every day. It has created a market of more than 9 million user/consumers units.[8]

The economic importance of this "immaterial economy" is visible and it has grown very fast. For example, according to official data from the public regulator (Anacom, 2003), revenue from the telecommunications sector in Portugal went up by an average of 15% a year from 1999 to 2003, to about EUR 7.1 billion. This sector's weight in the Portuguese GDP was 5.4% in 2003. Investment in the same year was nearly EUR 790 million, which was 2.7% of the national gross fixed capital formation. On the other hand, employment in the sector has gone down in recent years, probably due to technical progress in more traditional sub-sectors like landlines (automation of exchanges, etc.), among others. The 19,648 jobs in 1999 went down to 15,433 in 2003, which is an annual average drop of 5%. One of the characteristics of these new "technologically intensive" sectors is that they grow without creating jobs and may even reduce employment. Therefore, there is no quantitative importance in terms of jobs corresponding to their economic and socio-cultural importance. In fact, the weight of the telecommunications sector in total national employment was only 0.3% in 2003.

We also know that the rate of technical creation and innovation is impressive. One of the reasons for the success of mobile communication is the user-friendliness of the cell phone and its primary language - the human voice (and now real-time video images) - compared to the written language of the computer. It is also perhaps due to the nature of the psychomotor gesture of dialling rather than the grammar required in a command given to

8 In 2004, there were 9,636,000 mobile telephone services subscribers (Anacom, 2004b), 26 internet service providers and 5,527,670 customers with dial-up access, which cannot be regarded as internet users, as the same people are often customers of several ISPs (Anacom, 2004a).

computer software. These technical, mental and cultural difficulties are sometimes insurmountable barriers for certain types of people, not only because of lack of education or more advanced age but also because the culture they have learned is different from that of the new ICTs, instilled in particular with the *literary culture* that was absorbed by the higher qualified strata of previous generations. On the other hand, young people socialised in today's technological context seem to show a particular facility and enthusiasm for the tactile-audio-visual *communicational culture* associated with these devices.

Finally, we should remember the importance of *private cars*, especially in terms of their use in everyday life and the importance of this cluster to the economy (ours and the world's). We can quote some data from an official study on the subject, based on the movements of commuters in the Lisbon Metropolitan Area between 1991 and 2001 (INE, 2003). In spite of the increase in availability and quality of public transports, the percentage of those using their cars to commute to work or school went from 24% to 44% 10 years later, when it reached 1,381,000 people. In additional to a possible desire for comfort and economy, this type of decision is generally rational, as travel time is smaller, though it is doubtful whether the same can be said for the cost, as there are no credible data to confirm this. Another official study (INE, 2000) only showed that transportation represented 15% of a household's average annual expenditure, with 8.5% corresponding to public transports, 49% to private cars and 40% to paying for the vehicle. The apparent unequal (decreasing) use of private cars during the month seems to indicate that these behaviours deserve more in-depth study.

On the other hand, as a factor of production and employment, cars represent a sector of considerable economic and social importance, even in Portugal, which is not a manufacturing country. According to government sources (Direcção-Geral de Transportes Terrestres, 2002), the number of cars and vans on the road grew by an annual average of 6.4% between 1993 and 2002, when it reached 3. 8 million, which corresponded to 374 per 1, 000 inhabitants (224 in 1993), or 0. 7 vehicles per home (i.e. approximately per family) in 2001, as opposed to 0.4 a decade before.

Regarding employment, the 2001 census data (INE, 2003: *Quadro* 6.32) indicate more than 120,000 employees worked for the automobile sector, 23,507 in industrial "manufacture" (vehicles, trailers and components) and 97,362 in "commerce and repairs" (including "parts and accessories").

In any case, with regard to our concerns, it is logical to think that work activities and, secondarily, the demands of consumption, leisure and social relationships in an urban (and, *a fortiori*, metropolitan) context are powerfully structured over space and time (mainly daily and weekly) *taking into account* the possibilities opened up by these two artefacts: the car and new ICTs.

The two "anchorage points" are still certainly work (qualifications, salary, location, etc.) and family/home (composition, expenses and type, cost, location). But the multiple possible combinations - from which a certain insertion social in the social structure arises (real and symbolic, momentary and in transit) - often (and more and more) include the consideration of the utility/cost of these two products, which are certainly capital goods but also durable consumer goods that wear out and become obsolete fairly rapidly

Knowing that both these production sectors depend at the same time on demand from private consumers, the public administration and companies, it is worth making a last, limited incursion into the Portuguese people's economic and work perceptions in a multi-annual time lapse, including the reference period.

Perceptions and attitudes

Taking advantage of Portugal's inclusion in the annual ISSP surveys,[9] the team that has been studying "Portuguese social attitudes"[10] decided in 1997 to include a module entitled "Economic and work perceptions", from we can now present some original data[11].

The respondents were asked to give opinions, evaluations and forecasts as to the economic life of their family. We have included here the results of their evaluation of the family's economic situation (table 7.1), short-medium term forecasts as to the respondent's employment situation (table 7.2), his or her salary (table 7.3), the family's economic situation (table 7.4), the family's consumption and/or investment plans (table 7.5) and their expectations as to their children's future (table 7.6). The percentages have been rounded up or down. The comments following the tables are based on a bivariate analysis.

Our first impression from these data is the drop in savings in 2000, which, together with other indicators shows a considerable change in consumption expectations at the end of the period. A more detailed analysis shows that younger, more qualified people, those scientific and technical

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9 *International Social Survey Programme*. See presentation of project in Cabral, Vale and Freire (2000).

10 Directed by Manuel Villaverde Cabral and Jorge Vala and hosted at Instituto de Ciências Sociais da Universidade de Lisboa (Institute of Social Sciences of the University of Lisbon). See volumes published in the catalogue of "Imprensa de Ciências Sociais", "Atitudes Sociais dos Portugueses" collection for 1997 and subsequent years.

11 ext by João Freire "A evolução de alguns indicadores laborais em Portugal no período 1997-2000" was supposed to be a chapter in a book publishing the results of the module. As the publication was cancelled some of the data in the text have been used here and some from the unpublished 1997 to 2000 surveys with authorisation from Institute of Social Sciences of the University of Lisbon. The methods used in these surveys are described in the publications quoted, especially in Manuel Villaverde Cabral *et al.* (1998).

Table 7.1 Families' current economic situation, 1997-200

(percentage in colun)

Assessment	1997	1998	1999	2000
Able to save	36	42	40	23
Spend everything	32	27	29	51
Have to go without goods	25	25	25	22
Have to run up debts	7	6	6	4

Source: ISSP, 1997-2000.

Table 7.2 Forecast of occupational situation (in 2 or 3 years), 1997-2000

(percentage in colun)

Forecast	1997	1998	1999	2000
Much better than now	7	6	7	2
Better than now	32	40	35	33
Same as now	49	44	49	56
Worse than now	12	10	9	9

Source: ISSP, 1997-2000.

Table 7.3 Forecast of salary (in 2 or 3 years), 1997-2000

(percentage in colun)

Forecast	1997	1998	1999	2000
Much better than now	7	6	9	2
Better than now	48	56	48	34
Same as now	37	32	37	50
Worse than now	8	6	6	14

Source: ISSP, 1997-2000.

occupations, public employees and residents in the north tended to save more.

This indicator is supposed to be sensitive to perception of the situation, as the time frame given enables the respondents to make a rational personal forecast, with factors that they can mostly affect (not to say control). The results shown here are relatively stable, with a slight rise in 1998 and a drop in 2000. The fact that around one third of the respondents said that they expected their working life to improve in the short-medium term shows reasonable confidence in their own professional capacities and the economic situation of their companies and their sectors of activity. On the other hand, around half of the sample expected their occupational lives to remain the same, which, being a

Table 7.4 Forecast of family's economic situation (in 2 or 3 years)

(percentage in colun)

Forecast	1997	1998	1999	2000
Will be able to save	40	46	44	27
Will spend everything	32	27	28	43
Will have to go without goods	22	22	23	25
Will have to run up debts	6	5	5	5

Source: ISSP, 1997-2000.

Table 7.5 Short/medium term plans for spending / investment(2 to 3 years)

(% of affirmative answers)

Plan	1997	1998	1999	2000
Holiday in Portugal	47	47	49	14
Foreign holiday	18	17	17	3
Furniture / appliances	39	40	38	20
First car (1)	11	11	8	1
Change cars	23	21	17	5
Second car (2)	9	7	6	2
Buy first home (1)	15	17	15	1
Move house	14	15	13	2
Second home (2)	7	7	4	1

(1) Percentage of those without (car or home);
(2) Percentage of those with (car or home)

Source: ISSP, 1997-2000.

modest threshold (given the unsatisfactory circumstances of many), corresponds to a certain legitimisation of the current economic and social system.

The most favourable expectations are naturally correlated to lower age, while stability (same as now) is related to higher age. Academic and vocational qualifications seem to be associated with forecasts of progress. On the other hand, pessimistic forecasts are made especially by the self-employed.

A comparison of these results with those of the previous table is very interesting, as the percentages in the two central categories are practically reversed showing strong expectations of ongoing improvement in income. In other words, there seems to be optimism as to the growth of the economy, which will have the effect of raising purchasing power. However, the assessment in the last year is much more pessimistic.

As in the previous question, we find a close correlation of more favourable expectations with younger age and more moderate ones (same pay as now) with the older age group. Female respondents, those with less schooling, industrial and agricultural labourers and the self employed also had more moderate expectations as to future salary (than the above averages).

There are clear variations in the ability to save marked by the short- and medium-term assessment of the situation, in contrast with the stability of indebtedness and the need to postpone buying certain goods. Pessimism about saving is certainly clear in 2000.

In a closer analysis, we can see the trend towards a more favourable assessment of the ability to save by men and people with higher academic and vocational qualifications. This trend also increases in reverse proportion to age.

These data on plans for buying or investing are perhaps the truest reflection of families' economic possibilities permitted by the situation. These indicators show immediate expenses (holidays), expenses linked to home comfort and functionality (including domestic appliances and therefore computers, mobile phones, etc.), more or less essential and everyday physical mobility (buying a car in different circumstances) and, finally, larger, longer-term investments in housing (divided into different types of need).

The figures are of different significance depending on the family income and their needs, including between different types of goods, but they all point to clearly negative expectations as to the economic situation, visible in 1999 and overwhelming in 2000.

In view of these results, we can put forward two or three general considerations. The first and most important has to do with the predominant trend in social attitudes underlying the answers in these surveys. We can identify a phase of considerable positiveness and "optimism" in the respondents' evaluations and expectations which reaches its height in 1998, followed by a downward trend towards loss of confidence and reduced expectations in 2000.

Having said this, we also have to say that, in these assessments and forecasts made by ordinary people on socio-economic matters, there will have been a considerable effect not only of the economic situation but probably even more of the public's social representations and images of this situation. In other words, the opinions expressed in response to concrete questions are highly permeable to the media and inter-communicative dynamics generated in the sphere of collective opinion phenomena.

In these terms, and ignoring other factors, including those of a technical and methodological nature,[12] we can perhaps give a rapid description of the public information and opinion in these years at the end of last century

The period between 1997 and 2000 in Portugal corresponds to a time of apparent general internal and external economic prosperity and the best phase of the socialist governments headed by António Guterres. This government

12 Changes in method always have a disruptive effect on these longitudinal analyses, whether they are in the survey tool, or calculation conditions or sample selection. The validity of the results is usually weakened as we also found in this small study. On these and other points, see also Freire (1999).

Table 7.6 Expectation for children's future, 1997-2000

(percentage in colun)

Expectations	1997	1998	1999	2000
Better than theirs	19	19	19	11
A little better than theirs	47	52	54	54
About the same	18	16	19	23
Worse than theirs	16	13	8	12

Source: ISSP, 1997-2000.

came into power in 1996 after a feeling of "difficulty" at the end of Cavaco Silva's second government (which had gone through a great economic recession in 1992), 1996-97 saw the consolidation of the government's socially most visible initial measures, such as the guaranteed minimum income, the cancellation of the Foz Côa Dam, the strategic concertation agreement, the suspension of university fees, admission to the payroll of thousands of previously temporary civil service employees, etc. This was followed by measures such as adjustments in civil service careers (whose mentor had been Cavaco Silva in 1989), the leap forward in scientific policy, and Portugal's golden year, 1998, in public opinion, with Expo 98 and Saramago's Nobel Prize. 1999 was a "dramatic year", with the events in Timor and a "final frustration", with an incredible 115-115 tie in the parliamentary elections ruling out the expected absolute majority for Guterres' second term. 2000 was therefore a "down year", with a political climate marked by a fall in government popularity and national self-esteem, with a Portuguese presidency of the European Union that mobilised the attention of the prime minister and other government members but that the public did not understand or appreciate.

In these conditions, the data collected in these surveys could only be read as signs that socio-economic expectations were, in fact, going down and a crisis was expected, which is what happened in the first years of the new century.

Finally, the table below shows the respondents' forecast of their children's future compared to their own.

In this last question, which is more attitudinal, there are clear, strong expectations of progress and material improvement for the next generation, as around half of them expect positive development from one generation to the other, close to a fifth have strong expectations of this progress (in spite of the drop in 2000), somewhat fewer expect about the same and a minority (one in eight or nine) show a pessimistic attitude.

If we analyse in more detail those who think that their children's lives will be better than theirs, we find that, curiously, personal variables like gender, age or academic or vocational qualifications are not particularly relevant. The same is the case in most of the contextual variables like region of residence, type of habitat (urban or rural) or sector of employment. This means we

can hypothesise two possible explanations: either, in spite of its objective nature, the question did not suppress the projection of the parents' *desire* for a better future for their children and it is the respondents' individual attitudes (some more optimistic, others more pessimistic) that dictate the pattern of these answers or the respondents' evaluation of their children's' future was objective (as requested) and the results reflect a mostly legitimising adherence to the current socio-economic system.

In short, there have been clear changes in Portugal in the last 15 years, helped by attitudes of acceptance by most of the populations involved. Resistance is more systemic than strategic. However, in the strong interaction between the economy and society, technology has been more on the side of society than the economy.

References

Anacom (2003), *Statistical Yearbook 2003*, Lisbon, Anacom. At http: //www. anacom. pt/render. jsp?categoryId=312495#horizontalMenuArea.

Anacom (2004a), *Internet Access Service — 3rd* Quarter 2004 (Quarterly Report), Lisbon, Anacom. At http://www.anacom.pt/render.Jsp?categoryId=277884#horizontalMenuArea.

Anacom (2004b), *Mobile Telephone Service — 3rd* Quarter 2004 (Quarterly Report), Lisbon, Anacom. At http://www.anacom.pt/render.Jsp?categoryId=277884#horizontal MenuArea.

Cabral, Manuel Villaverde, *et al., Atitudes Sociais dos Portugueses. Orientações Perante o Trabalho. Base de Dados - 1997*, Lisbon, ICS, 1998.

Cabral, Manuel Villaverde, Eduardo de Freitas, and Maria de Lurdes (1993), "Atitudes da população portuguesa perante o desenvolvimento" in AA. VV., *Sociedade, Valores Culturais e Desenvolvimento*, Lisbon, Publicações Dom Quixote, pp. 23-81.

Cabral, Manuel Villaverde, Jorge Vala, and João Freire (2000), *Trabalho e Cidadania*, Lisbon, Institution of Social Sciences of the University of Lisbon.

Conceição, Pedro, and Patrícia Ávila (2001), *A Inovação em Portugal. II Inquérito Comunitário às Actividades de Investigação,* Oeiras (Portugal), Celta Editora.

Direcção-Geral de Transportes Terrestres (Inland Transport Directorate-General) (2002), *Evolução do Sector dos Tranportes Terrestres. Documento Síntese (1993-2002),* Lisbon DGTT. At http: //www. dgtt. pt.

Eurostat (2001), *E-Commerce Survey*, Luxembourg, Eurostat.

Freire, João (1996), "Identité et changement chez les agents de maîtrise au Portugal" in *L'Avenir des catégories intermédiaires d'encadrement (Journée d'étude du CEREQ en 1995),* Clermont-Ferrand, CEREQ, CER-ESC (Centre d'Études et Recherche dur Groupe ESC), p. 185-194.

Freire, João (1998), "Empresas e organizações: mudanças e modernização", in José Manuel Viegas, and António Firmino da Costa, *Portugal, Que Modernidade?*, Oeiras (Portugal), Celta Editora, pp. 285-309.

Freire, João (1999), "Problemas técnicos-metodológicos em inquéritos sociológicos", *Revista Crítica de Ciências Sociais*, Coimbra, 55.

Freire, João (2001), *Sociologia do Trabalho. Uma Introdução*, 2nd ed., Oporto, Afrontamento, ., 2001

Freire, João (2003), "Breve enquadramento ao tema dos perfis profissionais na Administração Pública Portuguesa", 4/1-2, pp. 98-102.

Freire, João (2005), "Cidade e Trabalho: uma análise integrada", *Organizações & Trabalho*, 29/30.

Freire, João (ed.) (2000), *Atitudes Face ao Emprego, Trabalho e Tempo Livre*, Lisbon, OEFP.

Freire, João *et al.* (1991), *Projecto de Investigação Sociológica: Os Encarregados na Indústria - Relatório Final*, vols. 1 and 2, Lisbon, CIES-ISCTE.

Freire, João (2004), *Cidade e Trabalho: potencialidades e custos*, Lisbon, ISCTE - Lisbon University Institute.

Freire, João, *et al.* (1995), *A Função de Chefia Directa na Indústria*, Lisbon, OEFP.

Godinho, Manuel Mira, and João Caraça (1999), *O Futuro Tecnológico. Perspectivas para a Inovação em Portugal*, Oeiras (Portugal), Celta Editora.

INE (Statistics Portugal) (2000), *Inquérito aos Orçamentos Familiares*, Lisbon, INE.

INE (Statistics Portugal) (2002), *Censos 2001*, Lisbon, INE.

INE (Statistics Portugal) (2003), *Movimentos Pendulares na Área Metropolitana de Lisboa - 1991-2001. Deslocações entre o local de residência e o local de trabalho*, Lisbon, INE.

Kovács, Ilona (2002), *As Metamorfoses do Emprego*, Oeiras (Portugal), Celta Editora.

Moniz, António Brandão (2000), "Cenários para o sistema socioeconómico das pescas", in António Brandão Moniz, Manuel Mira Godinho, and Ilona Kovacs (eds.), *Pescas e Pescadores. Futuros para o Emprego e os Recursos*, Oeiras (Portugal), Celta Editora.

Observatório das Ciências e das Tecnologias (Science and Technology Observatory) (2000-2001), *Inquérito à Utilização das Tecnologias de Informação e de Comunicação*, Lisbon, OCT/MCT.

Oliveira, Luísa (2008), *A Mão Invisível da Inovação. A Construção Social das Técnicas e dos Mercados* (PhD thesis), Lisbon, Celta Editora.

Rodrigues, Maria de Lurdes, and João T. da Mata (2003), "A utilização de computador e da internet pela population portuguesa", *Sociologia, Problemas e Práticas*, 43, pp. 161-178.

Rodrigues, Maria de Lurdes (1995), "Atitudes da população portuguesa perante o trabalho", *Organizações & Trabalho*, Lisbon, 14, p. 33-63.

Chapter 8

Tertiary employment, the servicelisation of labour and technological systems

Paulo Pereira de Almeida

Tertiary labour in European society and in Portugal

It is an inescapable fact that in most countries of the world the structure of production and employment were transformed during the second half of the twentieth century, with this shift in direction coinciding with the spread of service-related labour activities. However, this finding on the sectoral differentiation of enterprises has raised criticism of the usefulness of defining borders and boundaries between and within sectors. Indeed, it is precisely the conventional statistical explanations of the "tertiarisation" of societies that makes us re-consider their explanatory limits.

For this reason some authors may find it interesting, from an analytical point of view, to use a more aggregated classification — e. g. by "type of organisation" — which, essentially, corresponds to a strict definition of "sector" (i.e. making a distinction between "industrial" and "tertiary" enterprises) and divides the tertiary sector into two other categories (Freire, 2001c). According to Freire, for example, the first category corresponds to the more traditional, low-skilled tertiary sector, which the author terms "trade and services" and the second to the provision of highly skilled services, termed "professional",[1] But according to the arguments of an economist in the field of innovation and knowledge, like Gadrey, it is in the most highly developed countries that there are two groups of services that, in terms of the development of employment, can be analised differently (Gadrey and Zarifian, 2002). On the one hand there is a group of services that includes "distribution", "transport",

1 According to Freire's typology, "trade and services" organisations include "trade", "car repairs", "the hotel and catering industry", "transport", "tourism", "financial institutions", "welfare", "cleaning" and "other services"; "professional services" organisations include "property", "computing", "studies and projects", "education", "health", "the media" and "artistic, sporting and recreational activities" (Freire, 2001c).

Table 8.1 Percentage of total working population employed in services (1977 - 2003)

(percentages)

Country / Unit	1977	1980	1987	1990	1997	2003	▲ 1977-2003
Portugal	34.0	36.1	42.9	47.6	54.7	53.1	+56.2
EU	50.7	52.9	59.0	60.9	65.6	72.9	+43.8
USA	65.4	65.9	69.9	70.9	73.4	75.5	+15.4
OECD	n.d.	n.d.	n.d.	n.d.	64.2	68.0	–

Sources: European Statistical Office (1990-2004); Organisation for Economic Co-operation and Development (2004); our calculations.

"telecommunications", "banking" and "insurance", in which employment is registering a limited increase, stagnation or even the signs of retreat in some cases (which correspond to services with a fairly restricted relational component). On the other hand, there is a group of services covering "health", "education", "consultancy" or "catering" where the volume of employment has considerably increased (these are equivalent to services in which the professional and relationship components are very important).

However, in purely statistical terms, the growing importance of the "tertiary sector" is seen, among other indicators, in the involvement of 50%-75% of the working population in advanced societies (table 8.1) — a movement to which the EU has naturally not remained immune.

The marked increase in tertiary employment (especially since the 1970s) is anchored in a statistical explanation relating to the expansion of the second group of services in particular. This justification tells us very little about the relative contribution of each group to a given country's total production (quantitatively as well as qualitatively). In addition, as already mentioned, the debate about the industrial and service sectors also often involves determining an internal homogeneity for both sectors. It seems that, most probably, there are lines of internal difference here too, as in the case of the distinction between the public and private subsectors in the most advanced economies (e. g. that of Europe). What, then, is the significance of these economic dynamics?

In fact, tertiary development is the result of heterogeneous social and economic phenomena and is evident in extremely different activities: in this sense, the "tertiary sector" becomes something that is difficult to grasp and demarcate.[2] Moreover, the selective employment of post-industrial society is now substituting the integrating labour of industrial society. On the one hand, the large Taylorised production units that employed low-skilled workers in the early twentieth century — and where the creation of new jobs was faster than the destruction of old ones, in combination with an increase in the working population — have given place to new kinds of employment created in public services and small or medium-sized service companies and thus

introduced greater volatility. On the other hand, the increased social and economic importance of tertiary activities results, in many cases, from the industrialisation of existing business sectors — e. g. banking, insurance and large-scale distribution and marketing — and from mergers and acquisitions that were meant to mobilise capital for burgeoning business activities — e. g. purchasing pools and large-scale distribution circuits (Iribarne, 1993).

Using data from the beginning of the 1990s, Gallie considers that it reveals a similar composition in the professional categories in (private and publicly-owned) industry, whereas in (private and public) services these categories show differences (Gallie, 1991). Other data, e. g. that which Margirier also collected in the early 1990s, underlines the character of explanatory inadequacy for macro-sectoral trends in the reduction of employees in industry and the creation of jobs by the tertiary sector (Margirier, 1993): variations in employees and developments in employment structure are not solely the result of staff joining and leaving companies since, in a situation of external growth by absorption, the opening-up and closing-down of enterprises takes place naturally and also accompanies variations in employment.

For Gallie, the arguments presented regarding tertiary workers' skills are related to the different perspectives of the implications of service sector growth (Gallie, 1991). In the most optimistic scenarios, this fact represents an expansion of the knowledge-based professions leading to an increased demand for skills in the work-place. According to the most pessimistic, expansion of the service sector reflects the development of cheap, under-skilled labour confronted with routine and repetitive work. After the early 1980s, this approach of "skill dualism" in the tertiary field was substituted by a subtler dualist concept, which concerned employment status and the forms of managing labour. It is estimated that most service jobs belong to a "secondary segment" of the labour market, made up of precarious positions that depend on the economic situation for their existence and continuity (Rebelo, 2003). According to Gadrey, this numerical heterogeneity is also complemented by the specificity of tertiary employment systems, on the basis of two complementary hypotheses. Firstly, the "flexible" forms of labour management that became fairly dominant in the organisation of work in the late twentieth century proliferated in "services". Secondly, the tertiarisation movement in the industrial labour market is

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2 When analysing the sectoral distribution of the Portuguese population in employment, for the period 1992 - 1997 Gonçalves points out the maintenance of the relative importance of "agriculture, forestry and fishing", the reduction in "industrial employment" and, strangely, a fall in the relative importance of "employment in services" (Gonçalves, 2002). Similar findings, however, do not prevent the author from considering that in the "services" sector there is still "an economic space that could potentially generate employment" (Gonçalves, 2002).

Table 8.2 Percentage of the Portuguese working population in services, by NUTS I (1995 and 2002)

(percentages)

Years	Portugal	North	Centre	Lisbon	Alentejo	Algarve	Azores	Madeira
1995	56.4	15.8	10.3	21.7	3.5	2.5	1.2	1.4
2002	60.1	16.7	11.1	23.7	3.8	2.6	1.3	1.4

Source: Statistics Portugal (1996-2004); our calculations.

more important than the 'industrialisation' movement for tertiary employment systems (Gadrey, 1990a; Gadrey, 1999).

Let us now return to the case of Portugal, with a detailed examination of the data on the population engaged in services, according to NUTS I (table 8.2). More exact analysis of the tertiarisation trends in the country show a marked concentration of service personnel in the Lisbon region — 21.7% of the total working population in 1995 and 23.7% in 2002 (representing 1,743,000 workers) — and the North — 16.7% of the total working population in 2002. In addition to this trend for the active workforce to be concentrated in more highly populated areas, a relative stability is to be noted in the values for the autonomous regions of the Azores and Madeira (with around 65,000 and 71,000 workers, respectively, in 2002). This contrasts with the progressive tertiarisation of the working population in mainland Portugal where the number rose from 2, 536,900 workers in 1995 to 3,031,700 in 2002, representing a positive variation of 19.5% over the seven-year period.

This is the framework within which contemporary authors' concerns have moved on to an analysis of the different forms of "the logic of service" (i. e. the types of producers and users in interaction with the ways of organising work), in particular in their relational and symbolic aspects. It should be added that this change of paradigm is also marked by reflection about different tertiary "service-products" regarding aspects of their (im)materiality and of the intellectual knowledge and human capacities applied to acts of work (Almeida, 2005a). Moreover, in the face of these findings regarding the using-up of more classical explanations for the growth of tertiary work, there are at present two alternative options, in our view: to accept the logic of industrial output and its accounting or, on the contrary, to question the relevance and validity of the measures of productivity.

Quite naturally, we recognise that this is not a new question, though we feel that it is asked more acutely in the services sector (Almeida, 2005b). If we take the second alternative, we see that, essentially, measurement of the direct effect of a service is not just related to the precise moment it is "consumed". This observation is especially important for "pure services", considering the sizeable component of work whose effects can only be felt in the long term (education, research, health, etc.). In this particular case, the notions of a

product and productivity lose their relevance in that, for the greater part, the final result is "disconnected" from the work immediately carried out.

Tertiarisation and servicelisation: conceptual notes

We therefore prefer to use the notion of "servicelisation", on the one hand, to draw a line between it and the notion of "industrialisation" and, on the other, to register the fact that the principle of service cuts across the organisation of a considerable and expanding number of contemporary labour activities (Almeida, 2004). Thus we distinguish the notion of "service" from that of "services", associating the latter with the classification of economic activities (strictly economic, as we have argued) and, at the same time, defending the postulation that the notion of "service" cuts across all the forms of contemporary work as a whole (Almeida, 2005a; Almeida, 2005b).

However, in addition to the statistical findings presented and discussed above, what seems interesting to us — from the point of view of methodological and conceptual advances — will be an analysis of recent developments in organisational structures and practices associated with the transition from an 'industrial model' (represented by a bureaucratic state rationale and the form of the pyramid) to 'networked' organisational models that are imbued with the importance of the "mission" concept (Freire, 1998).[3] On the basis of this latter notion, it is possible to put the spotlight on the way people co-operate at work. This may cause us to ask at a closer level to the organisation of work: what, then, is the meaning of work at present and what does a rise in the number of operations carried out and performed mean in the productive context in which work organisations are at present integrated?

Zarifian has written a coherent reply to such questions. On the one hand, for the organisation of work, an increase in sales will certainly mean greater speed in accomplishing operations, thus accelerating the flow of operations on a direct output basis. On the other hand, for the workers, this entails working more and more rapidly as their experience (through the acquisition of work routines), skills, and adaptation to the work rhythm and technical instruments all increase (Zarifian, 1999a). In addition, this accumulated reserve of experience — in tertiarised societies - has become increasingly important, detaching employees' careers from a linearity that formerly took the form of a succession of positions and titles (generally in the same enterprise).

If earlier approaches to the notion of service tended to register a classical opposition between the tertiary and industrial sectors, in this "non-economic" concept of labour that dichotomy loses all sense: the concept of service cuts

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3 In Zarifian's view, for example, the formulation and application of a competence model presumes that corporate strategic missions are made explicit, in line with the principles of the service economy (Zarifian, 2001a).

across all sectors and, therefore, accompanies the transfer of the centre of gravity from the economic processes in the sphere of production — increasingly automated — to the sphere of circulation and physical distribution and the distribution of information (Freire, 1998). Moreover, these dynamics of tranversality can be extended to include yet another: an ever smaller proportion of goods belongs to individuals, a phenomenon that helps to transform the idea of property into an illusory concept in twenty-first century tertiarised and advanced societies (Rifkin, 2000). With ever shorter productive lifecycles, along with an expansion in the number and type of goods available, a fundamental change is taking place: modern societies are characterised by a general expansion of "service" and, according to Rifkin, capitalism is tending to be transformed into a system in which the exchange of goods gives place to an exchange of access to "segments of an experience"[4] (Rifkin, 2000).

If we focus on work as a productive activity (i. e. momentarily leaving aside other functions such as the identity aspect or the structuring of time and the rhythm of life), we can state that "tertiary" society or the "services" society is characterised by greater social indeterminacy in production relationships in comparison to industrial society. Reasoning of this kind leads to a double inference. On the one hand, whereas industrial relationships for production and their economic order used to structure social relationships, it is now cultural norms that set the social significance of service relationships, thus making recognition of the value of work an ever greater social and cultural problem (Lopes *et al.*, 2000). On the other hand, complementarily, if the immaterial nature of economic activities allows us to transcend earlier rifts between work and culture, the importance assigned to the competences involved in human interaction reveals some less positive aspects,[5] in particular the aggravation of social exclusion through economic exclusion (Roustang *et al.*, 2000).

In our opinion, another important finding is the fact that most of the work in services takes place in opposition to industrial models: although there are some constant elements, the speed of operations (which justified exploiting the qualities of systems and machines) is no longer consistent with the demands of initiative, practical intelligence, communication with fellow-workers and

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4 According to this reasoning, capitalism is becoming more temporal than material (Rifkin, 2000). Time, then, presents itself as one of the most significant dimensions of modern societies: the dominant concept of quantitative, mechanical and strictly reproducible time (useful for organising social life, work schedules and productivity measures) is countered by a notion of '*temps-devenir*' and different alternatives relating to labour productivity and social organisation (Zarifian, 2001b).

5 It is especially in the form of work organisation — termed "the business system" in Freire's approach — that technological sophistication allows productive flexibility: work based on strength almost completely disappears, in favour of various combined forms of knowledge-work and machine-work (Freire, 1997).

dialogue with clients (which represents a large part of contemporary human work activities). It may even be argued that this tertiarisation of economic activities modifies the types of competence demanded of workers: this "logic of service" is often associated with the specific centrality of the "competence model" (Almeida, 2004; Gadrey and Zarifian, 2002).

According to Zarifian, what is termed the notion of competence is a new unity between work and worker, a unity in which work reincorporates the individual and an attempt is made to mobilise and extend the knowledge and imaginative intelligence that this individual possesses or has co-constructed (Zarifian, 1999a).[6] In his reasoning, it is a question of recreating the stages of work in service enterprises[7] — which begin with the phase of finding out, recognising and interpreting the client's needs and end with the actual production of a service (Gadrey and Zarifian, 2002). However, for more critical authors, application of the notion of competence tends to favour the fragmentation of work situations, alongside the transformation of the knowledge necessary for their new organisational forms, the segmentation of jobs and the search for flexibility by businesses (Dugué, 1994; Everaere, 2000). In these accounts, the notion itself of competence accompanies the spread of individualised work relationships, a phenomenon that has always been connected with non-industrial employment, especially that of office-workers (Crozier, 1965) and executives (Erbès-Seguin, 1999). In a way, its transferral to work activities would correspond to a kind of group hegemony in the organisation.

Considering all that we have just stated, this transfer to a relational dimension, in the logic of service, has important implications for the nature of work activities.

Until the 1980s, sociological analyses treated workers' capacities and "qualities" as attributes for which they were recognised on the labour market or, in the case of the deskilling theses prevailing in the 1970s, as "knowledge expropriated from the working-class" (Bernoux, 1994) which would contribute to the deterioration of the workers' general qualifications. The 1980s saw the emergence of a new profile of the worker, as an "operator-expert", a profile for which there was a whole new language and technical vocabulary. So it is not surprising that the moment of the passage from skills to competence

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6 Some authors criticise the vision of autonomous individuals who free themselves by work and by the freedom to choose the course of their working lives (i. e. by careers created through the development of their competences, free of heteronomic constraints). Gorz, for example, considers Zarifian's theses on this subject "theoretical delirium" (Gorz, 1997) as the idea of autonomy and self-determination at work should be set against cultural, political and moral autonomy, whose core and foundations lay far from the act of working, which is itself subject to intervention and constraints of this kind.

7 Understood here by Zarifian as enterprises and work collectives in which the "logic of service" and "logic of competence" prevail.

seems to have coincided with the circumstances in which work systems started to be affected by frequent changes, making it necessary for the staff to adapt to these dynamics. In this sense, the incomplete attempt of the Sociology of Work to break with technological determinism, before the 1980s, prompts a reading of work organisation methods that, in the most radical theses, appears as machinations directed against the know-how of operative employees.[8] Accordingly, the knowledge copied from the operation of machines (in particular computer equipment) would necessarily be more abstract, a result that may contain an important ambiguity: automation of a process represents a process of abstraction in the sense that the worker "abstracts" him/herself from the function now performed by the machine but this does not mean that this disconnection makes the new task more abstract or more "intellectual".

It is, therefore, of interest to consider that, at the present stage of societal development, the development of services itself represents the passage from one industrial model to another, i. e. to a set of ways or methods of producing that are different. In an "industrial economy", the producer-user relationship results from the decomposition of the product into standardised, primary elements that are accepted or rejected (i. e. bought or not bought) by the customers. It is even possible to speak of a "configuration of users". In a "service economy", the service products are global and are not generally decomposable, so that it is the customer/user who assesses the satisfaction involved in consuming them, even being able to intervene in their production. Some of these service products (particularly information services) only really exist at the moment of the service relationship with the customer, in which case it is possible to talk of "co-production" (De Bandt, 1994 and 1999; Turner, 2001).

The rejection of a direct analogy between the theories of industrial production and production in services is based, then, on the understanding that service products are fundamentally different from industrial products: they cannot be defined on the basis of specific techniques nor can they be products per se, independent of the consumer or user. This is the reason why we conceive the "logic of service" as including three main characteristics (Almeida, 2003a):

— the structuring of service companies in such a way as to stimulate the construction of relevant and up-to-date information banks on customers and users, which should be usable later to identify their particularities;

8 It should be noted that, in the Taylorist phase, the gaining of skills had been turned into one of sociology's central concepts, partly to clarify the social relationships that were being established at the time of the operation to classify workers.

— the organisation of work activities in such a way that they contribute to the co-production of responses adapted to customers' "problems";
— pressure for the re-composition of production technologies and relational logistics, in processes of service co-production, with self-training in competences.

We also know that an enterprise's production system corresponds to the set of interrelated components that guarantee production operations.[9] This set may be represented by four essential elements (Bancel-Charensol, 1999): the objectives and support basis of the transformations carried out; the resources used in production operations; the tasks carried out to obtain this type of production; and the production piloting and control system. IT (Information Technology) changes information management methods, which, in turn, may cause changes in each of the components in the enterprise's production system. In addition, the increase in the opportunities offered by IT and the use of telecommunications services and networks play an increasingly important role in service activities:

— developments in the organisational structure of service companies are a direct consequence of IT use;
— thanks to IT, customers play an increasingly significant part in some phases of service production;
— the changes taking place in terms of lower communication costs, greater reliability and increased transmission capacity allow an overall approach to forms of management.

It is generally considered that this overall approach allows substantial alterations in various forms: through a reduction in communication costs; through an increase in transmission capacity, progress in the reliability of telecommunications services and modification of the system's results on the basis of a wider range of services offered; through lower prices for services and the exchange of computerised data (commonly called yield management); and through a change in the interaction modes of processes by substituting capital with work and front-office staff with automatic distribution. An analysis of the production system may, then, provide an overall perspective for characterising different changes in information gathering, processing and transmission.

It is thus important to mention that telecommunication services have an essential role to play in information exchange within organisations. Today

9 According to a significant number of authors, the notion of an operation/process can be defined as a set of interrelated activities whose goal is to generate material or immaterial output designed for internal and external customers.

their functions depend, as a whole, on an information system that is mostly automated, a phenomenon that is increasingly indispensable with the appearance of networked enterprises whose effectiveness is strictly dependent on their methods of co-ordinating activities with other enterprises (Schilling and Cassandra, 2000). In addition, the concept of an intelligent network allows the info-structure to be separated from the infra-structure, making network management much nimbler and more flexible. This new configuration permits (Turner, 2001):

— nimbler management of telecommunication services, such as the "green line";
— new services based on equipment that is relatively transparent from the network operator's point of view;
— the combining of value-added service flows, which allows new operators to enter the market;
— unification of the physical network in a universal broadband network that progressively substitutes existing telecommunications networks and complements and competes with satellite options.

Work, servicelisation and technology: from immateriality to innovative uncertainty

Large service companies' technical systems are undergoing an increasingly more conspicuous process of concentration and integration. Faced with these circumstances, their branches find themselves between two potentially opposing situations: on the one hand, a movement towards the concentration of powerful technical and computer systems that can capture a greater and greater number of customers and, on the other, the need to intensify the relations and the closest and most direct contact with customers. We shall be dealing, then, with a service company model that — held as the ideal type and extracted from its connections with other models — can be characterised by three fundamental principles (Gadrey and Zarifian, 2002).

Firstly, this is a model that combines three universes:[10] the universe covering the conception of the services that are included in research and development activities; the universe of the technical and administrative infrastructure that backs up the production of services, or the back office; and the universe of contact with the customer-user, or the front office. Secondly, the service company model is governed by a specific scheme of effectiveness: it starts with the symbolic and virtual definition of the transformation to be

10 The co-operation/co-ordination between these three universes is fundamental to the successful operation of the activity chains that cut across them, given that this separation tends to go against the traditional concept of the management control function.

carried out in the business activity conditions and the arrangements for the action of a customer (or a specific category of customers) and ends with that actual transformation. It is to be noted that the income generated for the organisation (i.e. its performance) is determined in accordance with the customer's assessment of the service in comparison to the competition's offers or alternative options. This service company model also assumes — this is the third principle — that work is organised in a network or chain of activities. These include a dialogue and permanent relationship between the different professionals in each of the three service production universes (these universes will thus guarantee their reciprocal acceptance via social contact and the sharing of technology).[11]

With regard to work productivity in enterprises operating in the net economy, it is also important to consider that they seek to gain the loyalty of a customer capital, i. e. a group of clients, as stable as possible, that represents business potential and a resource. Thus work productivity models are often based on situations in which the basic teams carry out the job of supervising a reality that is, in fact, more virtual than real (Zarifian, 2003). Indeed, the volumetric productivity of Internet economy enterprises is similar to a flexible Fordist model, though with some particularities (Zarifian, 2003):

— in the net economy, the market is still under construction, so it is not only a question of winning market share but of constructing the market and monitoring it as it matures;
— what is to be considered is an application of the "time to market" principle, seeing that not only market share but also the quality of client relationships are considered.

Also in this service company model — and most particularly in the technical system — IT changes the processes of gathering, manipulating and transmitting data. In addition, it allows companies to make cost reductions and offer their services more cheaply, though with the same quality (figure 8.1). Afterwards, information is one of the main production resources in services: to make the most of a service, consumers now need information ranging from access instructions for the service to the expected behaviour of customers and access conditions, and information on the way the service is provided or reserved. These two types of information may be supplied in different forms: traditionally, companies have the choice between dissemination using material means (paper, boards and messages) and that using staff, in direct or telephone contact, which represents a large part of the activity of companies (figure 8.1).

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11 Examples are customer help-lines, a paradigm of the connection between technical and commercial specialists, or the shared use of the intranet or email networks in a particular enterprise.

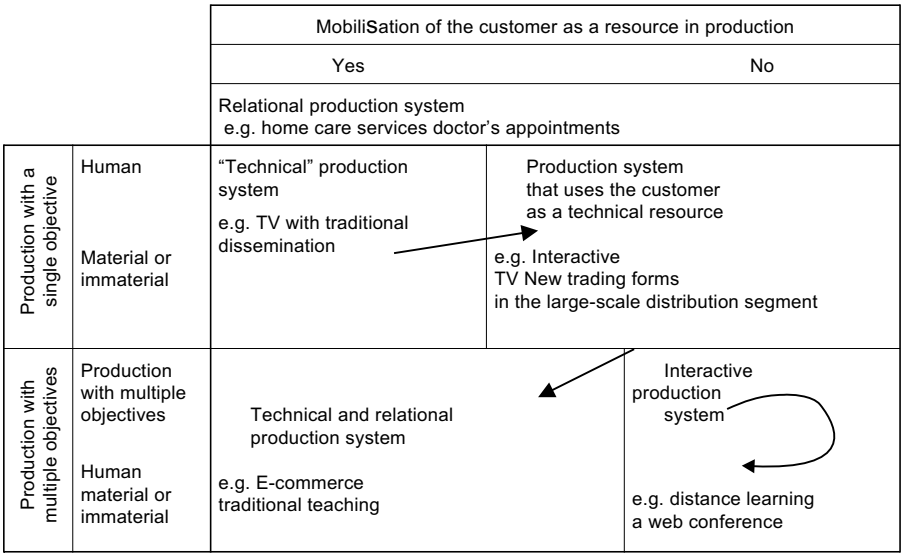

Figure 8.1 Changes brought about by IT in service production systems
Source: adapted from Bancel-Charensol and Jougleux (1997).

It is also important to note that these specificities for IT use — and an analysis of them in contexts of innovation and knowledge — should not be separated from an attempt to understand the structure and operating models of the most complex organisations, in particular service companies in which this mass production requires, simultaneously, service customisation and individualised attention to differentiation among customers (Turner, 1999; Turner, 2001). Only this way can these companies create value. We do not neglect the fact that for modern organisations — and, specifically, service companies — the operational level has acquired a holistic character in that "it is responsible for identifying customers" needs and expectations and adapting services and products to these references' (Bilhim, 2001). According to the latter author, this situation has led to an inversion of the hierarchical pyramid and an increase in the importance of customer-supplier interdependence and proximity.

For this reason — principally on account of the combined effects of increased competition and IT use — service companies have altered their structure. It is interesting to observe how these structures, which are close to a mechanicist bureaucracy, assume characteristics of decentralisation and a shift

to flexible management models involving co-operation, in a structure bordering on adhocracy. In concrete terms, at the front office level of customer contact, the 1980s and 1990s saw a reorganisation of service company activities, which were now oriented towards granting greater autonomy in their relations with customers (figures 8.2 and 8.3).

The growing importance of computers in piloting business networks also changes the nature of breakdowns as they do not originate in the fundamental technology, which has become fairly stable. The attention to risk becomes, therefore, a complex interpretation of events. But this organisational form creates a specific tension between two levels of professional practice: the first is directed at supervision, with increasing costs, that is anchored in the criterion of specialist staff and manufacturers, and the second at network construction and development, not from the standpoint of the data flow but the quality of access. Moreover, in two studies that we carried out on a sample of 25 enterprises[12] we ascertained the following needs in the profile required to carry out the various work activities in what we term as business contexts of innovation and knowledge (table 8.3)

In conclusion, it is important to consider some specificities in work forms and IT use in "innovation and knowledge contexts", since, in this matter, it is a question of phenomena relating to the servicelisation of work, with particular effects on technological systems:

— first, it is worth considering that, in our view, the service company model is a proposal for a conceptually stimulating paradigm and that its application and principles can be extended to other sectors or subsectors of the economy. It should be stressed that, with regard to the operational interactions in this model, it is possible to observe, often simultaneously, a reduction in some kinds of interaction (regularly the simplest, those that can be automated) and the intensification of other forms of interaction (generally the most complex on the level of cognitive mechanisms);
— secondly, it should be remembered that effectively going beyond the merely administrative use of IT in business processes implies — in the most varied markets in which IT enterprises operate (from the public administration to the financial markets, telecommunications, trade, industry and services) — a greater demand with reference to acquisitions carried out

12 It will be of interest to mention that the data presented relates to two studies covering 25 telecommunications, financial and computing enterprises that operate in an environment that we classify as "an innovation and knowledge context". The field work — which was qualitative in nature — concentrated on 25 in-depth interviews. It should also be mentioned that the full transcription of the corpus of results and the later qualitative processing were carried out using *OSR-NVivo* software, with the respective node, attribute and value definitions.

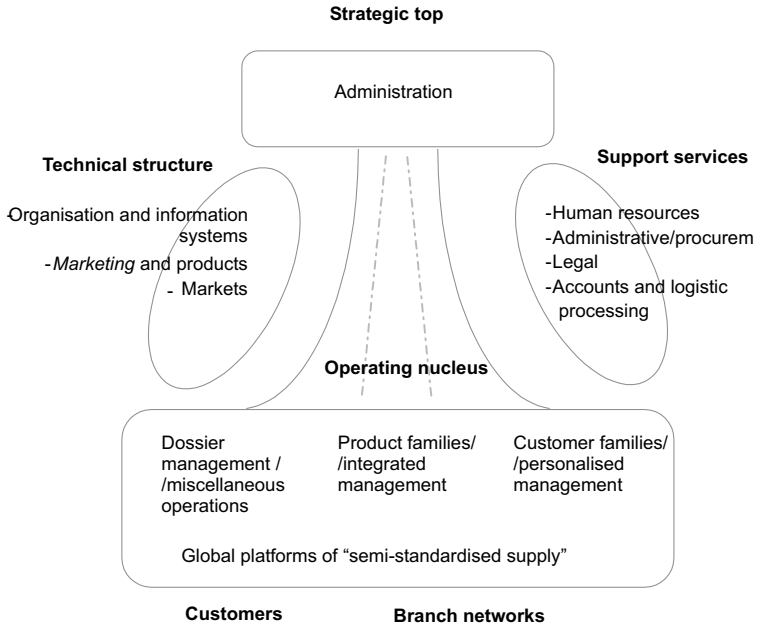

Figure 8.2 Service companies in the Mintzberg categories: the shift to adhocracy

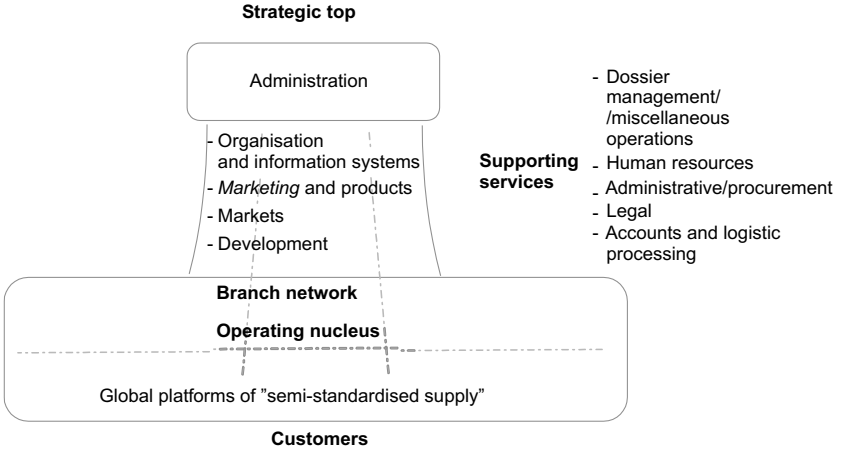

Figure 8.3 Service companies in the Mintzberg categories: the shift to adhocracy

Table 8.3 Profile of qualifications and competences required in business contexts of innovation and knowledge

Profile data	Competences
IT professionals qualifications and occupational training in contexts of innovation and knowledge:	Understood as IT professionals transversely demanded qualities in contexts of innovation and knowledge:
– licentiate degrees (4 years min.) or bachelor degrees (3-year higher education courses) in computer engineering;	– solid project management capacities;
– licentiate degrees in management with some complementary IT training;	– product, service and content development;
– converted general licentiate degrees.	– capacity for self-development;

electronically. This implies that formal consultations are made, for example, by email and that other procedures are also innovative (making these kinds of tools universal);

— thirdly, considering that the information society does not represent an end in itself, we also think that the structuring of demand by using IT should take account of two aspects of the provision of a service. On the one hand, that provision is framed within the time in which it takes place; this interval is fundamental in the assessment of service quality and - considering the forms of performance assessment — at this particular point we find an element of tension that is not to be neglected (even in the case of public services). On the other hand, it will also have to been taken into account that the quality of the services provided is often positively perceived in inverse proportion to their standardisation.

References

Almeida, P. P. (2001), *Banca e Bancários em Portugal: diagnóstico e mudanças nas relações de trabalho*, Oeiras (Portugal), Celta Editora.

Almeida, P. P. (2003a), *The Service Enterprise: work, competence and performance in servicelization contexts*, Lisbon, DINÂMIA-ISCTE.

Almeida, P. P. (2003b), "Competências e modelo da competência", *Sociedade e Trabalho*, 17/18, pp. 87-98.

Almeida, P. P. (2004), "Servicialização do trabalho: perspectivas e tendências", *Sociologia, Problemas e Práticas*, 44, pp. 83-107.

Almeida, P. P. (2005a), *Trabalho, Serviço e Serviços. Contributos para a Sociologia do Trabalho*, Oporto, Edições Afrontamento.

Almeida, P. P. (2005b), "Serviço(s) e sociologia do trabalho: que práticas? Que objectos", *Sociologia, Problemas e Práticas*, 47, pp. 47-67.

Bancel-Charensol, L. (1999), "Impacts of information and telecommunication technologies on services production systems", *International Journal of Management Services*, Vol. 19, No. 4, pp. 147-157.

Bancel-Charensol, L., and Jougleux M. (1997), "Un modèle d'analyse des systèmes de production dans les services", *Revue Française de Gestion*, 113, pp. 71-81.

Bernoux, P. (1994), *A Sociologia das Organizações*, Oporto, Rés Editora.

Bilhim, J. (2001), *Teoria Organizacional: estruturas e pessoas*, Lisbon, Instituto Superior de Ciências Sociais e Políticas.

Bilhim, J. (2005), *Gestão Estratégica de Recursos Humanos*, Lisbon, Instituto Superior de Ciências Sociais e Políticas.

Bresser, R. (ed.) (2000), *Winning Strategies in a Deconstructing World*, Chichester, John Wiley.

Castells, M., and Himanen, P. (2002), *The Information Society and the Welfare State. The Finnish Model*, Oxford, Oxford University Press.

Crozier, M. (1965), *Le Monde des Employés de Bureau*, Paris, Éditions du Seuil.

De Bandt, J. (1994), "De l'économie des biens à l'économie des services: la production de richesses dans et par les services" in J. De Bandt, and J. Gadrey (eds.), *Relations de Service, Marchés de Services*, Paris, CNRS, Centre National de Recherche Scientifique.

De Bandt, J. (1999), "The concept of labour competence requirements in a service economy", *The Service Industries Journal*, 1, pp. 1-17.

De Bandt, J., and Gadrey, J. (ed.) (1994), Relations de Service, Marchés de Service, Paris, CNRS, Centre National de Recherche Scientifique.

De Bandt, J., and Gourdet, G. (ed.) (2001), *Immatériel. Nouveaux Concepts*, Paris, Economica.

Dugué, E. (1994), "La gestion des compétences: les savoirs dévalués, le pouvoir occulté", Sociologie du Travail, 3, pp. 273-292.

Erbès-Seguin, S. (1999), *La Sociologie du Travail*, Paris, Éditions de la Découverte.

Everaere, Christophe (2000), "La compétence: un compromis multidimensionnel fragile", *Revue Gestion 2000*, 4, pp. 53-71.

Flipo, J-P (2000), *L'Innovation dans les Activités de Services*, Paris, Les Éditions d'Organisation.

Freire, J. (1997), *Variações sobre o Tema Trabalho*, Oporto, Edições Afrontamento.

Freire, J. (1998), "Empresas e organizações: mudanças e modernização" in José Manuel Leite Viegas, and António Firmino da Costa (eds.), *Portugal, Que Modernidade?*, Oeiras (Portugal), Celta Editora, pp. 285-309.

Freire, J. (2001a), "Atitudes sociais dos portugueses perante o trabalho" in AAVV, actas do VIII Encontro Nacional de Sociologia das Organizações e do Trabalho, Março de 1999, *O Futuro do Trabalho: novas relações e competências*, Oeiras (Portugal), Celta Editora, pp. 27-38.

Freire, J. (2001b), "O sistema de relações colectivas de trabalho em Portugal: bloqueios e hipótese de superação" *in* AAVV, *Trabalho e Relações Laborais. Cadernos Sociedade e Trabalho*, 1, Oeiras (Portugal), Celta Editora, pp. 83-95.

Freire, J. (2001c), *Projecto de Estudo sobre Inovação Empresarial. Relatório Final para o Observatório das Ciências e das Tecnologias*, Lisbon, CIES-ISCTE.

Freire, J. (2002a), "Contributos para uma sociologia da vida económica em Portugal no final do século" in AAVV, actas do IV Congresso Português de Sociologia,

Abril de 2000, *Sociedade Portuguesa: passados recentes, futuros próximos*, Lisbon, Associação Portuguesa de Sociologia.

Freire, J. (2002b), *Sociologia do Trabalho. Uma Introdução*, Oporto, Edições Afrontamento.

Gadrey, J. (1990a), "Les systèmes d'emplois tertiaires au coeur des transformations du marché du travail", *Formation Emploi*, pp. 21-34.

Gadrey, J. (1990b), "Société des services ou société de serviteurs?", *Futuribles*, 147, pp. 61-65.

Gadrey, J. (1992), *L´Économie des Services*, Paris, Éditions de la Découverte.

Gadrey, J. (1999), "Flexibilité et professionalisation du travail dans les services: des stratégies et des modèles distincts", *Économies et Sociétés*, Série Économie et Gestion des Services, 1, pp. 117-141.

Gadrey, J. (2000a), "The characterization of goods and services: an alternative approach", *Review of Income and Wealth*, 3, pp. 369-387.

Gadrey, J. (2000b), *Nouvelle Économie, Nouveau Mythe?*, Paris, Flammarion.

Gadrey, Jean, and Philippe Zarifian (2002), *L´Émergence d'un Modèle du Service. Eenjeux et Réalités*, Paris, Éditions Liaisons.

Gallie, D. (1991), "Patterns of skill change: upskilling, deskilling or the polarisation of skills?", *Work, Employment and Society*, 5 (3), pp. 319-351.

Gonçalves, C. (2002), "Emprego e desemprego: algumas notas de reflexão" in AAVV, *Actas do IV Congresso Português de Sociologia, Abril de 2000, Sociedade Portuguesa. Passados Recentes, Futuros Próximos*, Lisbon, Associação Portuguesa de Sociologia.

Gorz, A. (1997), *Misères du Présent. Richesse du Possible,* Paris, Galilée.

Iribarne, A. (1993), *La Compétitivité. Défit Social, Enjeu Éducatif*, Paris, CNRS, Centre National de Recherche Scientifique.

Lopes, H. *et al.* (2000), *Estratégias Empresariais e Competências-Chave*, Lisbon, Instituto do Emprego e Formação Profissional.

Margirier, G. (1993), "L´évolution des structures d´emploi: une analyse des comportements d´entreprise", *Formation Emploi*, 42, pp. 7-24.

Mintzberg, H. (1993), *Structure in Fives. Designing Effective Organizations*, New Jersey, Prentice-Hall.

Mintzberg, H. (1995), *Estrutura e Dinâmica das Organizações*, Lisbon, Publicações Dom Quixote.

Rebelo, G. (1999), *A (In)Adaptação no Trabalho. Uma Perspectiva Sócio-organizacional e Jurídica*, Oeiras (Portugal), Celta Editora.

Rebelo, G. (2003), *Emprego e Contratação Laboral em Portugal. Uma Análise Sócio-organizacional e Jurídica*, Lisbon, RH Editora.

Rifkin, J. (2000), *The Age of Access. How the Shift from Ownership to Access is Transforming Capitalism*, New York, G. P. Putnam's Sons.

Rodrigues, M. J., *et al.* (eds.) (2003), *Innovation, Competence Building and Social Cohesion in Europe: towards a learning society,* Camberley, Edward Elgar.

Roustang, G. *et al.* (2000), *Vers un Nouveau Contrat Social*, Paris, Desclée de Brouwer.

Schilling, M., and Cassandra, E. (2000), "Product and process technological change and the adoption of modular organizational forms" in Bresser, R. (ed.), *Winning Strategies in a Deconstructing World*, Chichester, John Wiley.

Turner, I. (1999), "Strategy in the post-industrial society", *Manager Update*, 3, pp. 1-8.
Turner, I. (2001), "Strategy and Internet", *Manager Update*, 4, pp. 1-9.
Viegas, J., and A. F. Costa (eds.) (1998), *Portugal, que Modernidade?*, Oeiras (Portugal), Celta Editora.
Zarifian, P. (1999a), "Productivité, logique de service et mutations du travail", *Revue Française de Gestion*, 126, pp. 106-116.
Zarifian, P. (1999b), *Objectif Compétence. Pour Une Nouvelle Logique,* Paris, Éditions Liaisons.
Zarifian, P. (2001a), *Le Modèle de la Compétence. Trajectoire Historique, Enjeux Actuels et Propositions,* Paris, Éditions Liaisons.
Zarifian, P. (2001b), *Temps et Modernité. Le Temps Comme Enjeu du Monde Moderne*, Paris, L'Harmattan.
Zarifian, P. (2003), *A Quoi Sert le Travail?,* Paris, La Dispute.

Chapter 9

Structure, social orientations and societal projects

José Luís Casanova

The concept of social orientations

Recent work (Casanova, 2004) has developed the concept of "social orientations", with which it is intended to define an explanatory and comprehensive principle of social behaviour centred on agents.

The fundamental reference for this work is the concept of *habitus,* though the aim for the social orientations is to overcome some of the limitations repeatedly ascribed to Pierre Bourdieu's work, especially those presented by authors such as Anthony Giddens (1989) and various tendencies in social science that stress the reflexive monitoring of consciousness as a characteristic of humankind. Examples of this are symbolic interactionism, ethnomethodology and phenomenology.

The question here is to explore a conceptualisation in which the relational, interactive and dynamic nature of *habitus* is reinforced and more essentialist conceptions are rejected, as is proposed in the notion of *inter-habitus* presented by José Madureira Pinto (1981 and 1985) and is suggested by other authors such as António Firmino da Costa when he speaks of the "reconfiguration of *habitus*" (Costa, 1984: 31).

Habitus, as Bourdieu described it and Bernard Lahire (1995, 2002) has discussed it, is a cultural complex of more or less structural dispositions, which have very different referents at the time of their interiorisation. The concept of social orientations presented here seeks to delineate the most structural dispositions in the *habitus*, that is, those that will be most durable and constitute the broadest spectrum of social *praxis*.

If the social conditions represent the most structural aspect of life in society, and if dispositions tend to adjust to these conditions — as Bourdieu shows in his work — then it is to be expected that the most structural dispositions are exactly those that relate to the objective conditions of existence. Social orientations are, therefore, defined as ideal-type orientations relating to social conditions in life.

It is assumed that it is possible to monitor these orientations in the individual's consciousness. This assumption is stated by Bourdieu himself when he defines *habitus* as simultaneously the generating principle of social practices and the classification system of these practices, and when he perceives reflexivity as the ability to make unconscious categories and classifications conscious. This allows a formal and direct operational approach to social orientations.

There are, overall, two main theses regarding the theorising about the conditions of existence: the first sees these social conditions, or social positions, as being associated with the type of action that the social agents carry out, whereas the second sees them as the result of constraints that are fundamentally inherent in the structure of social inequalities and functions. Subsequently, two analytical dimensions are proposed in the operationalisation of social orientations: action's orientation and the orientation towards social inequality.

In a questionnaire applied in the year 2000 in a national survey developed with the research centre *OBSERVA - Ambiente, Sociedade e Opinião Pública* (OBSERVA - Environment, Society and Public Opinion) these two dimensions were operationalised using two variables.[1] Each of these variables provided two statements involving beliefs about social life and conditions of existence, of which respondents had to choose the one in which they most clearly saw themselves.

For the orientation towards social inequality, the statements were as follows: "It is correct that people are different from each other. But it is always possible to narrow the social inequalities between them" or "It is correct that people are different from each other. But the social inequalities between them are inevitable".[2]

With regard to the action's orientation, the statements were: "Our position in society depends above all on our having objectives in life and our making the effort to reach them" and "Whatever we do, our position in society depends, above all, on things that we cannot control".[3]

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1 The target-group was the Portuguese population aged 15 years or more, distributed over the five mainland regions and the two autonomous regions (NUTS II). The full size of the sample was 1,844 individuals, selected from the master sample of the Statistics Portugal, which also applied the questionnaire. The sample was statistically representative at a national level with a 5% margin of error.

2 In this second statement the grammatical connection between the first and second parts is neither very clear nor correct. The direct transposition of the form of the question, with the aim of limiting the content differences that it is intended to capture, does not provide a satisfactory result, though there is no reason to believe that this inaccuracy has introduced a significant element of bias into the responses.

3 For each of the questions a third modality was also foreseen for those who did not respond.

The aim, on the one hand, is to distinguish orientations of conformity and non-conformity (or egalitarian and non-egalitarian) orientations, in relation to social inequality and, on the other, proactive and non-proactive orientations. Some of the results of this study show that the egalitarian orientation is not always necessarily "egalitarist", in the sense of defending the primacy of equality in the ideological sphere. But it must be stressed that an egalitarian orientation is an essential component in the maintenance of social integration, since social inequality is generally considered a fundamental obstacle to social integration. Proactive and non-proactive orientations correspond overall to the traditional sociological distinction between rational and non-rational action.

By crossing these two variables, we designed a social orientation index that constitutes a nominal composite variable with the following ideal-typical modalities: proactive egalitarian, proactive non-egalitarian, non-proactive egalitarian and non-proactive non-egalitarian, to which the non-responses are added.[4]

With regard to the size of these groups, the proactive egalitarians are the biggest proportionally (37.1%), followed by the proactive non-egalitarians (18.7%), the non-proactive non-egalitarians (15.9%) and the non-proactive egalitarians (10.0%). Those who did not respond to at least one question represented 18.3%.[5] It is to be noted that, although proactive egalitarians have the greatest proportional weight in Portuguese society, they only represent a minority of the sample. It can also be concluded from these results that most of the Portuguese are socially proactive, i.e. they believe in the importance of objective-driven action while they do not share a belief in the possibility of continuously reducing social inequalities.

It was ascertained later, with an empirical test, that social orientation, like *habitus*, represents a "structured and structuring structure". In fact, social orientations vary significantly with all the respondents' social characteristics considered in this study, and introduce equally significant statistical variations in all the variables of values, social representations and practices included in the questionnaire.

The main results of the first phase of this work are presented below. This phase assesses the extent to which social orientations are structured in unequal social conditions in life.

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4 The theoretical framework and methodological support for this operational method are developed in Casanova (2004).

5 These respondents who did answer only one of the questions corresponding to the two social-orientation dimensions cannot be considered in any of the other modalities and, accordingly, were grouped together in a special category. Only 9% did not respond to either question.

Social orientations and social structure

It can be observed that social orientations are structured according to highly dissimilar dimensions of social conditions — differences both in social position and background, which also vary according to trajectories and sociabilities. All the sociographic variables that were considered here in these different dimensions introduce statistically significant variations in the respondents' social orientation, as mentioned above (though they are only of median significance in the case of gender) (tables 9.1 and 9.2).

The association coefficient (Cramer's V), however, show that the highest associations with social orientations are those that involve the respondent's educational level, economic sector and socio-professional index, followed by the respondent's father's education and the respondent's age. The highest associations, nevertheless, refer to differences in terms of social position. The association with the father's education, also worth noting, underscores the importance of social background in the structuring of social orientations. The statistical association with age, which is also significant, allows us to raise the question of the generational factor in the interiorisation of social orientations, especially when it can be seen that work situation represents an association of little consequence here. Socio-professional sociability also reveals an association of some significance. The results of associations with socio-professional trajectories are more limited.

With the summary of the statistical aspects completed, it is now important to analyse the relationships between the respondents' social characteristics and social orientations.

The principal result to be taken on board is the degree to which a proactive egalitarian orientation cuts across society, its tranversality. This is the main social orientation in many categories of all sociographic variables considered here. It only loses its lead to the non-responses when the respondents are 65 years old or more, have no school qualifications, live in a rural environment, work at home, are retired or work in the primary sector. In other words, if we take out situations that are socially characterised by social exclusion and vulnerability, a proactive egalitarian orientation tends to prevail, in widely differing social situations. This social orientation is, according to this, inseparably bound to broad processes of socio-cultural autonomy.

Though the transversality mentioned above is crucial, it does not exclude important variations in social orientations according to the respondents' social characteristics.

Social orientations are interiorised within a broad framework of social inequalities and differences, among which differentiation in terms of social position predominates, though social background is also decisive, as mentioned above. The structuring associated with different socio-professional sociabilities in

friendships is also important, which means that, besides social position, the network of present social relationships also has an undeniable influence on the structuring of social orientations.

Socio-professional trajectories also figure in the interiorisation processes of social orientation. A proactive egalitarian orientation mainly develops during the course of upward intergenerational trajectories, while non-response and a non-proactive non-egalitarian orientation tend to develop in downward reproductive trajectories. It is plausible, therefore, to expect that in societal and historical contexts which support rising social mobility processes a proactive egalitarian orientation tends to develop, whereas in contexts favouring social reproduction and the persistence of social exclusion non-proactive non-egalitarian orientations must become more widespread.

The social framework for the development of non-response or a proactive egalitarian orientation is more closed as far as socio-professional sociability is concerned. The second of these orientations is more significant in sociability involving people with substantial resources, whereas non-response and a non-proactive non-egalitarian orientation are conspicuous in sociability among those with few resources. According to this data, socially open forms of sociability do not markedly promote proactive egalitarian orientations.

With regard to the influence of social background, it can be seen that proactive egalitarian orientations develop within a rather broad framework of situations that include a middle-level or higher education and substantial or intermediate socio-professional resources. Non-response and non-proactive non-egalitarian orientations generally vary inversely with education and are conspicuous among socio-professional backgrounds in the primary sector.

All the social position variables considered contribute to the structuring of social orientations.

Gender, however, is clearly the variable that least affects the interiorisation of these orientations. This corroborates a systematic trend in numerous other studies showing the decreasing importance of gender as an explanatory variable for social practices and representations in modern societies in which women's participation is increasing. This is not to deny that certain difficulties persist in the different economic, cultural and political spheres, as can also be seen in Portuguese society.

As with gender, employment status does not introduce differences in social orientations, though it does reveal significant statistical variations in these orientations.

The remaining social position variables not only produce statistically significant variations but also differentiate orientations, introduce greater variability in the trivariate analysis and present higher values for the association

Table 9.1 Social orientation and social characteristics

		Social orientation				
		Proactive egalitarian	Proactive non-egalitarian	Non-proactive egalitarian	Non-proactive non-egalitarian	DK/NR
Gender Significant chi-square $p \leq 0.05$; Cramer's V = 0.079	Male	267 35.8	154 20.7	89 11.9	115 15.4	120 16.1
	Female	417 37.9	191 17.4	95 8.6	179 16.3	217 19.7
Age group Significant chi-square $p \leq 0.01$; Cramer's V = 0.190	15-29	266 50.2	113 21.3	48 9.1	50 9.4	53 10.0
	30-44	207 46.2	80 17.9	41 9.2	70 15.6	50 11.2
	45-64	137 27.5	92 18.5	66 13.3	95 19.1	108 21.7
	65 e mais	73 19.9	60 16.4	287.7	79 21.6	126 34.4
Residential context Significant chi-square $p \leq 0.01$; Cramer's V = 0.143	Urban	457 43.2	207 19.5	110 10.4	144 13.6	141 13.3
	Semi-urban	170 30.0	92 16.2	55 9.7	116 20.5	134 23.6
	Rural	57 26.3	45 20.7	19 8.8	34 15.7	62 28.6
Education Significant chi-square $p \leq 0.01$; Cramer's V=0.258	Cannot read or write	19 10.4	20 10.9	6 3.3	33 18.0	105 57.4
	Can read but without I cycle (Grades 1-4)	41 19.2	21 9.9	27 12.7	61 28.6	63 29.6
	I basic education cycle (Grades 1-4)	126 25.1	110 22.0	58 11.6	100 20.0	107 21.4
	II basic education cycle (Grades 5-6)	103 40.9	57 22.6	28 11.1	36 14.3	28 11.1
	III basic education cycle (Grades 7-9)	132 51.8	51 20.0	25 9.8	31 12.2	16 6.3
	Secondary education (Grades 10-12)	167 57.8	62 21.5	23 8.0	25 8.7	12 4.2

	Non-university higher education	31	10	6	3	–
		62.0	20.0	12.0	6.0	–
	University education	65	14	11	5	5
		65.0	14.0	11.0	5.0	5.0
Work situation	Exercises an occupation	409	201	95	136	124
Significant chi-square $p \leq 0.01$;		42.4	20.8	9.8	14.1	12.8
Cramer's V = 0.157	Works at home	45	22	24	31	50
		26.2	12.8	14.0	18.0	29.1
	Student	118	41	16	15	19
		56.5	19.6	7.7	7.2	9.1
	Retired	82	66	33	89	126
		20.7	16.7	8.3	22.5	31.8
	Unemployed	20	10	91	16	12
		29.9	14.9	3.4	23.9	17.9
Occupational group	Legislators, senior officials & managers	27	12	4	6	1
Significant chi-square $p \leq 0.01$;		54.0	24.0	8.0	12.0	2.0
Cramer's V=0.183	Scientific and intellectual occupations	49	11	6	6	2
		66.2	14.9	8.1	8.1	2.7
	Intermediate technical occupations	53	20	7	7	3
		58.9	22.2	7.8	7.8	3.3
	Clerical workers	74	28	18	20	7
		50.3	19.0	12.2	13.6	4.8
	Service personnel and similar workers	58	43	22	30	42
		29.7	22.1	11.3	15.4	21.5
	Workers in agriculture and fisheries	14	18	6	22	54
		12.3	15.8	5.3	19.3	47.4
	Industrial production workers and craftspeople	68	48	24	36	50
		30.1	21.2	10.6	15.9	22.1
	Machine operators, drivers and fitters/erectors	19	12	11	14	13
		27.5	17.4	15.9	20.3	18.8
	Unskilled workers	152	93	46	101	110
		30.3	18.5	9.2	20.1	21.9
	Armed forces	8	4	1	2	1
		50.0	25.0	6.3	12.5	6,.

Note: frequency and horizontal percentages.; (*) Don´t know/no response.

Table 9.2 Social orientation and social characteristics

		Social orientation				
		Proactive egalitarian	Proactive non-egalitarian	Non-proactive egalitarian	Non-proactive non-egalitarian	DK/NR
Employment status	Employer	21	18	4	8	–
Significant chi-square p≤0.01;		41.2	35.3	7.8	15.7	–
Cramer's V=0,114	Self-employed	90	53	18	55	80
		30.4	17.9	6.1	18.6	27.0
	Employed	406	214	124	176	196
		36.4	19.2	11.1	15.8	17.6
Socio-professional category	Entrepreneurs and executives	21	6	4	3	–
Qui-quadrado significativo p≤0.01;		61.8	17.6	11.8	8.8	–
V de Cramer=0.206	Professionals and managers	100	28	15	13	5
		62.1	17.4	9.3	8.1	3.1
	Self-employed	73	45	12	40	21
		38.2	23.6	6.3	20.9	11.0
	Independent agricultural workers	15	16	5	17	56
		13.8	14.7	4.6	15.6	51.4
	Employees	202	101	64	78	72
		39.1	19.5	12.4	15.1	13.9
	Industrial workers	93	71	43	73	78
		26.0	19.8	12.0	20.4	21.8
	Agricultural employees	12	16	2	18	39
		13.8	18.4	2.3	20.7	44.8
Economic sector	Primary	26	34	8	36	96
Significant chi-square p ≤ 0.01;		13.0	17.0	4.0	18.0	48.0
Cramer's V = 0.243	Secondary	125	91	50	77	76
		29.8	21.7	11.9	18.4	18.1
	Tertiary	366	155	90	128	101
		43.6	18.5	10.7	15.2	12.0
Father's education	No qualifications	208	148	73	172	229
Significant chi-square p ≤ 0.01;		25.1	17.8	8.8	20.7	27.6
Cramer's V = 0.192	Basic education (Grades 1-9)	314	141	70	90	63
		46.3	20.8	10.3	13.3	9.3

	Secondary education (Grades 10-12)	83	23	12	11	8
		60.6	16.8	8.8	8.0	5.8
	Higher education	37	12	10	4	5
		54.4	17.6	14.7	5.9	7.4
Father's socio-professional category Significant chi-square p≤0,01; Cramer's V=0,149	Entrepreneurs, executives, liberal occupations	19	5	6	5	1
		52.8	13.9	16.7	13.9	2.8
	Professionals and managers	62	31	11	7	10
		51.2	25.6	9.1	5.8	8.3
	Independent workers	116	44	18	34	23
		49.4	18.7	7.7	14.5	9.8
	Independent. agricultural workers	91	57	33	65	79
		28.0	17.5	10.2	20.0	24.3
	Commerce and services employees	129	48	26	32	29
		48.9	18.2	9.8	12.1	11.0
	Industrial workers	144	87	37	64	71
		35.7	21.6	9.2	15.9	17.6
	Agricultural employees	53	48	25	57	89
		19.5	17.6	9.2	21.0	32.7
Socio-professional trajectoryl Significant chi-square p≤0.01; Cramer's V = 0.151	Upwards reproduction	31	10	8	5	2
		55.4	17.9	14.3	8.9	3.6
	Downwards reproduction	339	213	101	201	241
		31.0	19.5	9.2	18.4	22.0
	Upwards mobility	73	24	9	11	1
		61.9	20.3	7.6	9.3	0.8
	Downwards mobility	23	15	4	5	2
		46.9	30.6	8.2	10.2	4.1
Socio-professional sociability Significant chi-square p≤0,01; Cramer's V = 0,164	Upwards intra-class	62	14	7	3	2
		70.5	15.9	8.0	3.4	2.3
	Downwards intra-class	184	108	63	110	139
		30.5	17.9	10.4	18.2	23.0
	Inter-class upwards	13	8	2	4	2
		44.8	27.6	6.9	13.8	6.9
	Inter-class downwards	13	5	4	4	–
		50.0	19.2	15.4	15.4	–
	Inter-class distributed	55	27	18	13	8
		45.5	22.3	14.9	10.7	6.6

Note: frequency and horizontal percentages.

coefficient (Cramer's V). This indicates that they have a greater structuring effect on social orientations.[6]

The fact that the weight of the proactive egalitarian orientation increases from a rural to an urban environment and from the primary to the tertiary sectors shows that the development of these types of orientation goes hand in hand with visible structural changes in economic activity and territory, changes that are associated with the overall processes of modernity and the development of productive forces.

Social orientation is more closely associated with age-group than the work situation, though in the trivariate analysis each indicator produces variations in the other. The differences between generations, subsumed in the age-groups, may therefore be more significant in the interiorisation of social orientations, though the distinct life-cycle phases evident in the different work situations will also have some influence.

The socio-professional index, i.e. social class structurally defined by one composite variable of occupation and employment status, is one of the main social position variables to be considered in the structuring of social orientations. It exhibits one of the highest associations and stands out in the trivariate analysis. Its theoretical importance and explanatory capacity are once again revisited when it is seen that occupation and, in particular, employment status, in isolation, do not have the same prominence in the structuring of social orientations.

As education applies to all respondents and the socio-professional index only covers those who work (or have worked), it is not reliable to compare their association with social orientation without taking this difference into account. Thus, we calculated the association of the socio-professional index and education with social orientation only for respondents with work experience. It was observed that even among these respondents education presents a higher association than socio-professional index.[7] In order to control the effects of the different number of modalities for the two variables, we also calculated the association coefficient attributing ten modalities to the socio-professional index and four to education. In all these cases education exhibits higher associations than the socio-professional index, to which the wider range of variations introduced by education in the trivariate analysis should be added.

The modalities whose social orientation never varies in the systematic trivariate analysis are those of professionals and managers and the students, i.e. the modalities that most directly include investment in education, whether they involve work experience or not.

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6 Trivariate analysis (bivariate analysis, with a layer variable) allows the investigator to evaluate significant variations using a control variable. The base data of a trivariate analysis, which is relatively secondary and disproportionately bulky, is not presented here.

7 The Cramer's V values are 0. 275 for education and 0. 206 for the socio-professional index.

Accordingly, despite the importance of the socio-professional index in structuring social orientations, education stands out unequivocally as the principal factor.

The economic sector emerges as the indicator with the second highest association with social orientation, following education and preceding the socio-professional index. The prominence of the industrial sector may result partly from the fact that only three modalities are involved and this inflates the extent of the association. But it must also be due to the convergence of the effects of education and the socio-professional index. In fact, the trivariate analysis revealed that education and the socio-professional index, variables that register high associations with social orientations, introduce variations into all the economic sectors, a result that has no equivalent in the variations that the sector produces in educational levels and socio-professional categories.

The educational level corresponding to present-day compulsory schooling clearly marks the turning point from the predominance of a non-response and a non-proactive non-egalitarian orientation to that of a proactive egalitarian orientation. However, it is in higher education that proactive egalitarian orientations are highly represented. The social sectors typified by the possession of a higher education certificate may, therefore, be considered as the main social support of a proactive egalitarian orientation, i. e. the orientation that results from the combination of non-acceptance of social inequality and a positive assessment of the social importance of objective-driven action.

Consequently, the findings on the overall social transversality of proactive egalitarian orientations may be of importance, but equally important are the findings that the different social orientations vary significantly according to social characteristics, that some kind of orientations are more likely to exist in particular social sectors than others and that each of these orientations is associated with a fairly well defined set of social characteristics.

A synthesis of the results obtained in a vertical reading of the horizontal percentages relating to different social positions well illustrates the specificity of these associations.[8]

Proactive egalitarian orientations are structured in a fairly consistent set of social situations, the ones that stand out most being the youth and young adults who study or exercise an occupation, possession of a higher education certificate, residence in an urban environment, an intellectual and scientific or intermediate technical occupation, activity in the tertiary sector, and the

8 A vertical reading of the horizontal percentages allows us to assess the social characteristics in which the relative weight of each of the social orientations is greatest and to minimise bias caused by differences in the actual total of respondents for each modality of the social characterisation variable.

female gender (though here of little significance). Though we are dealing here with young students and adults who work, the group's consistency derives from the connection of both components with educational development.

The predominant social characteristics in the structuring of proactive non-egalitarian orientations do not appear so consistent. These orientations are to be noted among the youth, those who exercise an occupation, students, those who live in a rural and urban environment, those who have completed the first or second educational cycles (grades 1-6), small employers and the self-employed in the secondary sector, and males. The inconsistency particularly resides in the high occurrence of these orientations in both a rural and urban environment, and among both young students and those who work and have a certain socio-economic power. The trivariate analysis reveals that the predominance of young students in these orientations does not vary much with residential circumstances: there is only a slight rise among students in an urban environment in relation to other contexts. These orientations conspicuously include self-employed workers both in a rural and urban environment. This indicates that this type of social orientation is sustained by relatively distinct social sectors.

Similarly, the non-proactive egalitarian group is not very consistent in social terms, though it generally involves social positions with few resources. The predominant categories here are the 45-64 age-group, urban residents, respondents who can only read and write or, at most, have completed the second basic education cycle (grade 6), those who work at home or are unemployed, industrial manual workers, employees and males. These orientations, therefore, tend to develop in the situation of unemployment and, also, among the non-agricultural socio-professional categories with more limited resources.

The non-proactive non-egalitarian respondents are particularly to be found among the 65 years or more group (or those aged between 45 and 64), those who can only read and write, those living in a semi-urban environment, the unemployed or retired, self-employed workers or industrial manual workers, particularly unskilled, in the primary and secondary sectors, and females. The most apparent social inconsistencies in this group relate to the differences between self-employed and industrial workers and between the primary and secondary sectors. A certain consistency can be seen in the limited educational and occupational qualifications.

Finally, in the group that did not respond to at least one of the two questions with which we operationalised social orientation, we may note the respondents aged 65 years or more, those who live in a rural environment, those who cannot read or write, those who are retired or work at home, those who are (or were) self-employed or employed by someone else as workers in the primary sector, and women. This group involves interviewees that normally opt not to respond to questionnaire surveys and has a high degree of

social consistency. It is characterised by situations of social exclusion and vulnerability.

The social sector that did not respond to the questions for either of the social orientation variables is not, then, the same that supports predominantly non-proactive non-egalitarian orientations, despite the similarity of these sectors in terms of resources. This result helps to underscore the idea that we are dealing with clearly different social orientations.

Although certain social sectors are divided among different orientations, it is generally apparent that, especially in educational and socio-professional terms, a particular social base corresponds to each type of social orientation.

In summary, results not simply reveal the broad social tranversality of a proactive egalitarian orientation. The specificity of the social sectors in which each type of social orientation predominates allows us to consider the possibility that these sectors represent social focus in the development of different social orientations. Social orientations give a clear sign here of their relational aspect when it is seen that the differentiation of these orientations is sustained by diverse social sectors and is, therefore, associated with social relationships. More highly developed levels of this relational aspect can only be substantiated if we verify that different projects, ideologies and political positions also correspond to distinct social orientations. This correlation will be dealt with later.

The results hitherto presented suitably support the objectives that we adopted in constructing social orientations as a typically socio-cultural concept.

No sociographic variable alone can explain social orientations. On the contrary, what was observed was that all these sociological variables generally introduce statistically significant variations into social orientations and differentiate such orientations. Moreover, to a greater or lesser degree, all the variables introduce significant variations in orientations when a trivariate analysis is carried out.

So the distinction between social orientations is explained by a broader set of inequalities and social differences, including the variables in sociology that are traditionally most explanatory. This means that social orientation condenses a multiplicity of social situations and, for this reason, can provide a good socio-cultural index of these inequalities and social differences.

The socially structured character of social orientations, then, is very clear from the results presented hitherto. Nevertheless, it is worth making a final reference to the importance of educational level in the formation of these orientations.

The pre-eminence of education in the structuring of social orientations must be ascribable to the fact that it is typically both a social and cultural

investment. Among the most usual sociographic variables, it therefore emerges as the one that most directly reflects cultural differences and social inequalities, representing an indispensable indicator in the analysis of cultural patterns linked with inequalities in resources. This pre-eminence of education in structuring social orientation corroborates various authors' insistence on the importance of education and cultural resources in advanced capitalist societies. Among them, in particular, Pierre Bourdieu promoted the idea of cultural and educational capital as social investments.

The differentiation of social orientation on the basis of the dichotomy between those who have and have not completed compulsory schooling represents another observation of the greatest sociological interest. With this result we can appreciate the importance that institutions and social movements can have in structuring social orientations.

It is not possible to weigh up here whether the dichotomy associated with compulsory schooling can be basically ascribed to the differences in literacy and cultural resources conferred by it, on the social evidence that the completion of compulsory education represents an important requirement for many positions of employment, or whether the split can be ascribed to the symbolic effects associated with having or not having achieved this educational level. The importance of the split may result, to a large extent, from an overlapping of these different factors.

We further processed the statistics, considering only the respondents aged 28 or less (when the survey was applied in 2000), who would have been fourteen years old or less in 1986 and would, therefore, have followed the present system of compulsory schooling laid down by the Law on the Bases of the Educational System in 1986. The value for the statistical association (Cramer's V) between educational level and social orientation here is lower than the degree of association for the sample as a whole. This may be at least partly due to the fact that, in the crossing of data for respondents of 28 years of age or less, certain cells were not filled in and others had minimal frequencies, which weakened the reach of the statistical results.[9] With regard to the percentage values, there was no great difference between the results for the whole sample and the selection. This means that experiencing different institutional systems of compulsory schooling does not affect the importance of the educational level corresponding to present-day compulsory schooling in the structuring of social orientation.

The importance of social background in the interiorisation of exteriority is very clear in the results presented. This illustrates Pierre Bourdieu's thesis, which supports the dominance of the original phases of socialisation and the tendency to reproduce orientations interiorised then.

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9 Cramer's V is 0.268 for the whole sample and 0. 182 for the selection involving only respondents aged twenty-eight or less.

But the prominence of social position in the structuring of social orientation is closer to the ideas of Anthony Giddens, who stresses the pregnancy of updating in socialisation and reflexivity.

Despite this prominence of position in relation to social background, this cannot lead to the conclusion that social orientation is structured mainly in present circumstances than by individual's original social conditions. As an example of the problems that arise with this interpretation, it is sufficient to mention that, in present conditions for a large part of population, their original social circumstances are reproduced (Bertaux, 1978; Bourdieu, 1979) and, therefore, the results relating to social position are not divested of the influences of social background; on the contrary, they reveal orientations interiorised in the original social environment, and possibly reinforce them. The statistical techniques used here to analyse extensive data gathered simultaneously can only suggest hypotheses to be developed in studies aimed at measuring the impact of social position and background on the structuring of social orientations.

In other words, if the data analysed here does not allow us to tell if the respondents inherit the orientations of their progenitors, because we do not know these progenitors, it can however be affirmed that both social background and position contribute to the formation of social orientations.

Social orientations: trends and importance in societal projects

As mentioned above, in the second phase of the empirical test of the social orientation concept, we evaluated the extent to which social orientation also structures a wide range of values, social representations and practices. It was ascertained that social orientations introduce statistically significant variations into all the indicators of this type in the questionnaire.

These indicators relating to values, social representations and practices structured by social orientations are linked with such different spheres as representations of social distinction, religious positioning, life orientations, socio-professional aspirations, the influence attributed to and claimed for institutions, development model preferences, political positions, consumer practices, habits in reading the printed press, opinion-giving and political and community activity.

It may also be observed that, from a comparative viewpoint, every social orientation tends to be associated with a particular set of values and representations. This strengthens the relational aspect of the social orientations already indicated when it was ascertained that these orientations have distinct types of social support in terms of social conditions in life.

Added to this relational aspect is a progressive characteristic, since it can be seen that different degrees of social reflexivity and societal involvement are associated with the fixed arrangement of the social orientation modalities considered here. In this case, "social reflexivity" is defined as the level of information and

opinion-giving with regard to society and "societal involvement" as the level of action with regard to society (statistical relation between social reflexivity, and political and community activity).

Thus, from the original five social orientations analysed, two more immediately comprehensible ones can be clearly defined.

Firstly, we have that of the non-responses, structured on social conditions characterised by deprivation and the least informed, opinion-giving, reflexive and participative social orientation — it can be called the exclusion orientation. Secondly, there is the proactive egalitarian orientation, which is the most widespread among the Portuguese population and it's also the most pluralist in the symbolical and ideological sphere, the most informed, opinion-giving, reflexive and participative, and, finally, shows the highest level of action on the social structure, including action on its own social conditions. It can, thus, be described as the autonomy orientation.

In the questionnaire used here there were no indicators for pluralism or attitudes towards democracy. But the fact that proactive egalitarian orientation, or autonomy orientation, is the most diverse in symbolical and ideological terms allows us, plausibly, to defend the hypothesis that it may also be the most pluralist and the one that must show the greatest investment in developing democracy.

This is an initial synchronic study. That means that there is no data available on the changes in social orientations in Portugal. But the recognition that each of these orientations is more likely to develop under certain social circumstances than others and our existing knowledge regarding the social recomposition of the Portuguese population allow us to point towards certain trends on social orientations.

Since the 1960s Portuguese society has clearly seen a progressive extension of education (although its average level remains distinctly below the European level), a development of the tertiary sector, the rise and expansion of the new middle classes involving a swift increase in professionals and managers, and ageing (Machado and Costa, 1998; Costa, *et al.*, 2000).

If we go back to the results presented above, with the extension of schooling, with the move from the primary sector to the secondary and from this to the tertiary, and within the middle classes, especially professionals and managers, the proactive egalitarian orientation - the autonomy orientation — always tends to expand. On the other hand, the exclusion orientation, along with the non-proactive non-egalitarian orientation, sheds importance. This means that the autonomy orientation has certainly expanded in this country whereas that of exclusion and the closest one to it in socio-cultural terms are in retreat.

The relationship that has been disclosed between age and social orientation may lead us to question this trend. As was shown, the autonomy orientation decreases with age, while exclusion orientation and the non-proactive and non-egalitarian orientation increase. With the ageing of the Portuguese

population these latter orientations must, accordingly, increase. But we verified that age-group represents a purely secondary factor in the structuring of social orientations. The fact that among the old people we find lower educational levels, fewer professionals and managers, in relative terms, and a greater incidence of working in the primary sector calls for heightened doubts regarding the idea that ageing is necessarily associated with the uniform development of social orientations. Ageing may involve different trends in these orientations and, here, it is not possible to make an estimate of the results. This may imply that the trend towards the spread of an autonomy orientation will moderate but not that it will fade away.

Therefore, it seems reasonable to state that in Portuguese society the autonomy orientation, i. e. a structural socio-cultural belief in the possibility of a continued reduction in inequalities and in objective-driven action, is increasing and that exclusion orientation has been in retreat.

Although the autonomy orientation is expanding and registers the highest percentage among the social orientations defined here, we must not forget that it only represents about 37% of the Portuguese population. On the other hand, the exclusion orientation involves nearly 18%.

There is no data on social orientations in the European Union but if we take account of the levels of education and tertiarisation, and the weight of the professionals and managers in these countries (Costa *et al.*, 2000), it can be expected that Portugal is among those in which the autonomy orientation is less striking and the exclusion orientation has a greater presence.

To complete the information presented here, which has a synchronic component and, now, a retrospective extension, it is essential to add some of the study results that refer to the future of Portuguese society. We are talking about data relating to values or, more exactly, societal projects, in two distinct spheres: institutions and development models.

In the questionnaire we asked respondents to identify those institutions, from a broad group, that should have more, less or the same influence than they have in this country at present.

The institutions that the respondents would like to see with greater influence in Portugal are science/research establishment (59.4%), universities (55.8%), local government (50.5%), trade unions (46.7%), professional associations (43.7%), civic associations (NGOs) (41.7%) and the state (36.5%).[10] With regard to military institutions (47.2%), the church (43.8%), political parties (38.1%), the media (33.9%), secret associations (32%) and economic groups/companies (31. 5%) most of the respondents said that their influence in Portuguese society should remain the same as it is now.[11]

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10 These are the institutions in which the percentage corresponding to the call for greater influence is higher than the other percentages.

Table 9.3 Social orientation and the call for more influence for institutions

Social orientation	The call for more influence for institutions												
	Professional associations	Civic associations	Trade unions	Media	Economic groups	State	Church	Universities	Science	Parties	Local government	Militaries	Secret associations
Proactive egalitarian	372 54.4 **46.2**	351 51.3 **45.6**	359 52.5 41.6	188 27.5 34.2	187 27.3 37.4	233 34.1 34.6	179 26.2 31.6	443 64.8 43.1	500 73.1 **45.6**	96 14.0 39.8	381 55.7 40.9	124 18.1 36.7	48 7.0 38.1
Proactive non-egalitarian	168 48.7 20.9	178 51.6 **23.1**	164 47.5 19.0	117 33.9 21.3	123 35.7 **24.6**	157 45.5 **23.3**	106 30.7 18.7	210 60.9 20.4	221 64.1 20.2	47 13.6 19.5	186 53.9 20.0	76 22.0 22.5	26 7.5 20.6
Non-proactive egalitarian	92 50.0 **11.4**	85 46.2 **11.1**	102 55.4 **11.8**	60 32.6 10.9	46 25.0 9.2	74 40.2 **11.0**	56 30.4 9.9	104 56.5 10.1	116 63.0 10.6	22 12.0 9.1	95 51.6 10.2	31 16.8 9.2	16 8.7 **12.7**
Non-proactive non-egalitarian	108 36.7 13.4	100 34.0 13.0	148 50.3 17.2	99 33.7 18,0	90 30.6 18.0	130 44.2 19.3	128 43.5 **22.6**	169 57.5 16.4	177 60.2 16.1	43 14.6 17.8	170 57.8 18.2	68 23.1 20.1	20 6.8 15.9
DK/NR	65 19.3 8.1	55 16.3 7.2	89 26.4 10.3	86 25.5 15.6	54 16.0 10.8	79 23.4 11.7	98 29.1 **17.3**	103 30.6 10.0	82 24.3 7.5	33 9.8 13.7	100 29.7 10.7	39 11.6 11.5	16 4.7 12.7

Note: frequency, horizontal and vertical percentages.

11 For secret associations, the majority modality was, more precisely, non-response, followed by the call for equal influence.

There was no major call for reduced influence for none of the institutions on the list, though some of the Portuguese, sometimes a significant number, wished that some of these institutions really had less influence in Portugal (mainly political parties, media and economic groups).

When these results are combined with others from the survey, the clearest thing that emerges is the collective desire for a more varied and balanced influence from the different institutions in Portugal.

Also, when we observe the variation between the influence claimed for institutions and the social characteristics of the respondents, it can be seen that the call for greater influence for science is the only one that is totally consensual. This does not mean, of course, that the respondents all gave the same replies. It does, however, mean that in all the modalities of all sociographic variables used here the response calling for greater influence always represents the majority.

Practically the same happens in relation to the demand for more influence for the universities, with the single exception of self-employed agricultural workers, among whom the majority recommend that universities maintain their present influence. It should be noted that scientific and research activity is closely associated, in Portugal, with the universities. The greater consensus registered here, then, concerns the whole group of these institutions.

Among the institutions under analysis, then, scientific and research establishment and universities are those that benefit from the socially most consensual call for greater influence. As far as the other institutions are concerned, there is not the same overall social consensus.

Following the presentation of this data, it is now important to ascertain the relationships that can be established between the different social orientations and the recommended influence for the institutions in Portuguese society.

A descriptive analysis of the vertical percentages shows that the proactive egalitarian orientation is more significant for all institutions.[12]

With the analysis of horizontal percentages it is clear that whatever the social orientation, science/research establishment is always the institution for which greater influence is claimed. This uniformity is only broken by the respondents who do not answer the questions on social orientation since they call, in particular, for more influence for the universities.

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12 In table 9.3 the vertical percentages are exhaustive, totalling 100%, but the horizontal percentages are not exhaustive. The data presented retains the possibility of comparing the relative weights of the responses in which greater influence was called for, which is the main requirement for the intended analysis. As each institution involves an independent indicator, it does not make sense to make the significance and association calculation for this table.

This means that, among the institutions that the Portuguese would like to have more influence on society, the predominance of the science establishment and the universities is common to people with different social orientations, in addition to the fact that these are also the institutions enjoying the greatest social consensus, as mentioned above.

But a comparison of the different social orientations based on the weight of the demand for greater influence for the various institutions (a horizontal reading of the vertical percentages) shows certain specificities.[13]

A proactive egalitarian orientation is especially associated with the call for influence for professional associations and, after them, civic associations (NGOs) and the science/research establishment. A proactive non-egalitarian orientation is mainly linked with the claim for the influence of economic groups/enterprises and, after them, the state and civic associations (NGOs). A non-proactive egalitarian orientation seems to be linked most closely with the influence claimed for secret associations and, after them, trade unions, professional associations, civic associations (NGOs) and the state. We should not consider, however, that the pre-eminence of secret associations in this result can be extrapolated, given the low absolute frequencies involved. The non-proactive non-egalitarian orientation and the non-responses are associated with influence claimed for the church. As the non-responses to the question on the influence of institutions are not considered, it is not possible to gauge the weight of their relationship with the non-responses to the social orientation questions.

A vertical reading of the horizontal percentages reinforces the trends indicated above.[14]

For the science/research establishment, universities and professional associations the proactive egalitarians are noteworthy; for trade unions (and secret associations) it is the non-proactive egalitarians; for the economic groups/enterprises it is the proactive non-egalitarians and, finally, for the church the non-proactive non-egalitarians.

The demand for more influence for the remaining institutions is more clearly divided among distinct social orientations.

A general overview shows that the most characteristic combinations are the proactive egalitarians with professional/civic associations and science, the proactive non-egalitarians with the economic groups, the state and civic associations, the non-proactive egalitarians with the trade unions (and secret societies) and the non-proactive non-egalitarians with the church.[15] The fact that the non-responses on social orientation do not register any characteristic

13 Figures in bold in the table.
14 Underlined figures in the table.
15 A characteristic combination is considered to involve the highest values in the horizontal reading of the vertical percentages and the vertical reading of the horizontal percentages.

combination may be because the non-responses for institutions were not considered, as mentioned above, since in other statistical processing these two modalities are systematically close to each other.

In other words, among the majority of people with different orientations there is a convergence as far as the principal institutions to be promoted are concerned (essentially, the science/research establishment and universities). Secondly, the autonomy orientation is characterised by a particular promotion of science, and professional and civic associations.

As the autonomy orientation also represents the majority in claiming more influence for all the institutions considered in the questionnaire, this means that its role within society as a whole involves, to a great extent, investment in institutions and in their normative function.

Another set of preference indicators involves different development contents for the country. Respondents were requested to consider a list and choose the first, second and third sectors for which they would vote.

The Portuguese give first place to agriculture (26.7%) and industry (24.8%), followed by education/training (18.1%). Agriculture (19.9%) is the most voted for the second place, followed by education/training (15.6%) and industry (12.4%). In third place is education/training (21.8%), followed by the environment (13.8), new technologies and research (10.4%) and agriculture (10.1%). It is, thus, possible to say that there are essentially five sectors that the Portuguese vote for most when the object is the development of the country: agriculture, industry, education/training, the environment, and new technologies and research.[16]

Let us now see to what extent social orientations can be constituents of various models of investment in development.

The variation in responses for the sectors in which there should be investment in the first place is statistically significant and social orientations differentiate the sectors most often selected (table 9.4).

From a descriptive perspective, the horizontal results reveal that the proactive egalitarians give precedence to education/training, followed by industry, agriculture and new technologies and research, whereas the proactive non- egalitarians give priority to industry and then to agriculture and, among the remaining cases, agricultural investment predominates, followed by industry.

A vertical analysis shows a systematic majority of proactive egalitarian orientations among the different investment sectors, with the exception of forestry, non-response cases and the ambiguity of the results for the sectors included in "other" responses. The particular distribution of the vertical percentages for

16 However, when these preferences are crossed with the respondents' social characteristics, we obtain no comparable result to the social consensus seen in the call for more influence for science and the universities, since the technical formulation itself of this question does not allow a possible consensus to be verified.

Table 9.4 Social orientation and sectors to be invested in (1st)

Social orientation	Sectors to be invested in (1st)										
	Industry	Agriculture	New technologies / research	Commerce	Cultural events	Tourism	Forestry	Environment	Education	Others	DK/NR
Proactive egalitarian	160 23.4 34.9	133 19.4 27.0	86 12.6 **52.8**	15 2.2 44.1	11 1.6 37.9	22 3.2 37.3	6 0.9 20.0	54 7.9 49.5	175 25.6 **52.6**	17 2.5 27.4	5 0.7 6.7
Proactive non-egalitarian	98 28.4 21.4	88 25.5 17.9	37 10.7 22.7	6 1.7 17.6	9 2.6 **31.0**	11 3.2 18.6	5 1.4 16.7	20 5.8 18.3	59 17.1 17.7	12 3.5 19.4	– – –
Non-proactive egalitarian	42 22.8 9.2	47 25.5 9.6	16 8.7 9.8	5 2.7 14.7	4 2.2 13.8	8 4.3 13.6	9 4.9 **30.0**	7 3.8 6.4	38 20.7 11.4	5 2.7 8.1	3 1.6 4.0
Non-proactive non-egalitarian	71 24.1 15.5	108 36.7 22.0	15 5.1 9.2	3 1.0 8.8	5 1.7 17.2	15 5.1 25.4	4 1.4 13.3	16 5.4 14.7	33 11.2 9.9	17 5.8 **27.4**	7 2.4 9.3
DK/NR	87 25.8 19.0	116 34.4 23.6	9 2.7 5.5	5 1.5 14.7	– – –	3 0.9 5.1	6 1.8 20.0	12 3.6 11.0	28 8.3 8.4	11 3.3 17.7	60 17.8 **80.0**

Note: frequency, horizontal and vertical percentages. Significant chi-square p(0.01; V de Cramer=0.221.

forestry may be due to its limited dimension as a whole and the residual frequencies in each cell.

A horizontal reading of the vertical percentages shows that the proactive egalitarian orientation figures for investment in new technologies and research and in education/training are level.[17] Investment in new technologies, followed by investment in industry, is to be noted within the proactive non-egalitarian orientation (if we minimise the case of large cultural events, which involves a low number of frequencies and is obviously a minority sector in the overall results).[18] Forestry, then commerce, large cultural events and tourism seem to be prominent among the non-proactive egalitarians (though the absolute figures are so small that this result cannot be taken as certain). The tourism and agriculture sectors stand out most within the non-proactive non-egalitarian orientation.[19] Agriculture, forestry and industry seem to be the predominant sectors among the non-responses on social orientation (immediately following the majority weight of the non-responses to the question on sectors to be invested in).

If we concentrate our attention exclusively on the sectors with most votes and carry out a vertical reading of the horizontal percentages, the relative weight of agriculture is greater among the non-proactive non-egalitarians (and those who did not respond), whereas industry stands out among the proactive non-egalitarians, and education/training, the new technologies and research, and the environment are to be noted among the proactive egalitarians.[20]

From the overall results it can be seen that the most characteristic associations are as follows: the proactive egalitarians with education/training and the new technologies and research, the proactive non-egalitarians with large cultural events, and the non-proactive egalitarians with forestry, to which the consensus of the non-responses is added. However, as mentioned above, these associations with large cultural events and forestry cannot be considered beyond question as they involve very small absolute values.

So, when compared with other social orientations, the proactive egalitarian, or autonomy orientation invests the most in institutions and specially supports professional and civic associations, science and investment in the education/training and new technology/research sectors.

There is a conclusion to be drawn from the social consensus around the claim for greater social influence from scientific and university institutions

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17 Figures in bold in the table.

18 The examples of large cultural events provided in the questionnaire are Expo 98, the Capitals of Culture, etc.

19 Not counting the "others" modality, which brings together low percentages in various sectors.

20 Underlined figures in the table.

and the characteristic association of an autonomy orientation with this claim and with a development model that invests in education and research, to which the already significant and apparently growing importance of this orientation in Portuguese society is added. It is that knowledge is an objective with growing structural and socio-cultural support that is much wider than the social sector that possesses most control over its production.

This conclusion may be extended globally to many other countries in as far as an autonomy orientation closely accompanies education, tertiarisation and an increase in professionals and managers in the class structure.

References

Almeida, João Ferreira de, *et al.* (2000), "A sociedade", in António Reis (ed.), *Portugal, Anos 2000: Retrato de um País em Mudança*, Lisbon, Círculo de Leitores and the Portuguese Commission for Expo 2000 in Hanover.

Bertaux, Daniel (1978), *Destinos Pessoais e Estrutura de Classes,* Lisbon, Moraes.

Bourdieu, Pierre (1972), *Esquisse d'une Théorie de la Pratique, Précédé de Trois Études d'Éthnologie Kabyle*, Geneva, Droz.

Bourdieu, Pierre (1979), *La Distinction. Critique Sociale du Jugement*, Paris, Les Éditions de Minuit.

Bourdieu, Pierre (1992), *An Invitation to Reflexive Sociology*, Cambridge, Polity Press.

Bourdieu, Pierre (2001), *As Estruturas Sociais da Economia*, Lisbon, Instituto Piaget.

Casanova, José Luís (2004), *Naturezas Sociais. Diversidade e Orientações Sociais na Sociedade Portuguesa*, Oeiras (Portugal), Celta Editora.

Costa, António Firmino da (1984), "Alfama: entreposto de mobilidade social", *Cadernos de Ciências Sociais*, 2.

Costa, António Firmino da, *et al.* (2000), "Classes sociais na Europa", *Sociologia, Problemas e Práticas*, 34.

Giddens, Anthony (1989), *A Constituição da Sociedade*, São Paulo, Livraria Martins Fontes Editora, Lda.

Giddens, Anthony (1995a), *As Consequências da Modernidade*, Oeiras, Celta Editora.

Giddens, Anthony (2000), *Dualidade da Estrutura - Agência e Estrutura*, Oeiras, Celta Editora.

Lahire, Bernard (1995), *Tableaux de Familles. Heurs et Malheurs Scolaires* in *Milieux Populaires*, n/p, Seuil/Gallimard.

Lahire, Bernard (2002), *Portraits Sociologique. Dispositions et Variations Individuelles*, Paris, Nathan.

Machado, Fernando Luís, and António Firmino da Costa (1998), "Processos de uma modernidade inacabada. Mudanças estruturais e mobilidade social", in José Manuel Leite Viegas, and António Firmino da Costa (ed.), *Portugal, Que Modernidade?*, Oeiras (Portugal), Celta Editora.

Pinto, José Madureira (1981), "Solidariedade de vizinhança e oposições de classe em colectividades rurais", *Análise Social*, XVII (66), pp. 199-229.

Pinto, José Madureira (1985), *Estruturas Sociais e Práticas Simbólico-Ideológicas nos Campos. Elementos de Teoria e de Pesquisa Empírica*, Oporto, Edições Afrontamento.