Older workers and learning in industrial activities: When objects and personal senses matter

Maria Cristina Giovanna Migliore

INSTITUTE OF EDUCATION, UNIVERSITY OF LONDON

THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE RESEARCH DEGREE OF DOCTOR OF PHILOSOPHY

OCTOBER 2013

Acknowledgements

This enterprise, achieving an interdisciplinary PhD thesis starting from scratch - because I was pretty ignorant of how to integrate theory and empirical investigation - has been made possible thanks to some crucial conditions and many encounters, interactions and exchanges.

The exchanges with my supervisors, Professor David Guile and Professor Karen Evans, were decisive. I am so grateful to David and Karen for being so patient and supportive. They have played complementary roles: David's constantly challenging comments on my texts have found a balance in a higher degree of acceptance of my work from Karen. I think that the latter has given to me the feeling of choice to let grow in me the doubts that David was sowing in my flow of thoughts, avoiding a sense of inadequateness. Together we wanted to obtain a coherent theoretical framework. Indeed this search for coherence was satisfying my need for logical connections among concepts, clarity in the elaboration of a reasoning, and sense and meaning. This has required many years to develop. But David and Karen have always supported my work and given thoughtful and encouraging replies to my questions.

Beside the dialogue and discussions with my supervisors, I have benefited from those with my colleagues at the Institute of Education and Institute of Economic and Social Research of Piemonte (Ires-Piemonte) where I am employed as senior researcher, and those met on occasions of conferences and seminars. All these encounters and relations, together with the virtual ones with the authors I was reading, have nurtured my internal discussion. I remember that even small comments on my work have had powerful influence on my thoughts and elaboration. But also serendipitous events - as the fortuitous 'encounter' with a book in the library shelf - have generated a shift in the construction of my thesis.

I am feeling as my thesis, but also myself, have been the catalyzer of the changes produced by those exchanges and encounters. Actually, while the thesis was emerging from all those dialogic relations, my way of being and doing was changing too. Hence where are the boundaries between my thesis and myself? And with all the encounters and exchanges?

I suppose that these exchanges and encounters have produced changes in the people with whom I have discussed ideas around the subject of my research too, maybe small changes, but still changes.

I like to think of my enterprise, writing this PhD thesis, as part of a tangle of lines, planes and bodies of other lives. Or, I could say, - as I learned to figure out by doing this research – that my enterprise can be imagined as part of many related collective and material activities: the material and collective activity of the Institute of Education and its Doctoral School, the institute of research Ires-Piemonte, the activities from which the works of 'my' authors have emerged, from which I have developed my own way of looking at the world and being part of it – for example my upbringing.

My working at Ires-Piemonte has given me an absolute privilege: to be able to get a paid leave from my work for some years, with the envy of the other PhD students. We Italians have a wonderful Constitution from which the possibility of having a paid leave to participate in a Doctoral program of study comes. Our Italian Constitution (articles 9 and 34) protects and supports any citizen who wants to do academic research and this is implemented in the public sector which Ires-Piemonte is part of.

So I am in debt to the Fathers and Mothers of the Italian Constitution dated 1947.

Thanks to the management and the colleagues at my Institute of research too who found a way to re-organize their work to cover my leave.

I am feeling in debt to my country and my region for the resources spent to support my endeavour in this enterprise. All the richness of this work is now a collective richness.

A special thank goes to the people who have permitted my field work in the two firms, which were the object of my case studies. As I report in the empirical chapters, the access to these businesses was in one case facilitated by the top management and in the other case by the trade union. I thank them, they have trusted my research work. But I especially thank the workers who were so generous to tell me their life and work experiences, disclose parts of their personal worlds, and share with me their views. That has been of immense value for my research and our collective endeavour to explore the issue of subjectivities in workplace learning.

Thank to Anna Brett who has done the proofreading of my thesis. She did a great job for the theoretical framework has often made my text hard to understand outside the school of thought from which it comes.

Finally, my special thanks to my family: to my brothers Alberto e Marco and my partner Maurizio who incited me to go on and did not show despair in front of the length of this enterprise.

I hereby declare that, except where explicit attribution is made, the work presented in this thesis is entirely my own.

Word count (exclusive of bibliography): 99,551

Abstract

The issue of vocational learning (VL) for older workers (OWs) has become pivotal in European regions with an ageing workforce and facing economic changes and pressure to innovate. European Union policies recognize the value of formal, non-formal and informal learning to enhance workers' skills, but report low participation of OWs in continuing formal VL.

I contend that EU documents conceptualize learning according to a 'cognitivist' view and motivation as an individual endeavour, failing to acknowledge OWs' subjectivities and working activities in providing the context for the development of their motives for learning.

I adopt Cultural-Historical Activity Theory (CHAT) to direct the attention to the OWs' subjectivities and their personal relationships with their objects of activities (work). CHAT allows subjectivities and activities to be brought together in a holistic framework.

To illuminate the different ways in which objects influence motivation and learning, I introduce sociological strategies of production as objects of industrial activities and identify two radically different models as mass production and flexible specialization.

Two case studies, based on unstructured interviews with OWs and managers in two firms representing both production models, provide elements to analyse the interrelation between OWs' activities objects and their personal senses of these.

My thesis concludes that:

(i) OWs' relation with their work contexts, rather than their personal qualities, influences their engagement in their working practices and leads to the development of motives for learning;

(ii) strategies of production influence the intensity and richness of OWs' workplace learning;

(iii) OWs' previous and parallel experiences of active roles contribute to the judgement of the current work and to engagement in this;

(iv) EU policies for VL need to take into account how to support the OWs' engagement in their jobs.

Contents

List of tables

List of figures

1 Introduction

The European Union considers lifelong learning pivotal to building a knowledge driven economy. Continuing vocational education and training is considered part of lifelong learning and refers to the continuous learning of workers to keep them up to date and thus employable.

The demographic change and the ageing population call for a particular focus on older employees. The Kok report (Kok 2004), prompted by the European Council in Brussels for a re-launch of the Lisbon Strategy, stresses the importance of older workers. In the absence of a significant increase in productivity, the on-going ageing process, combined with the current low levels of employment of older workers, may cause a conspicuous slowing down in European economic growth. To remedy this phenomenon and sustain economic growth, the report emphasizes the need to increase the employment rate among older people.

Indeed, from the Stockholm Council Meeting (2001) onwards, the European Union has devoted continual and growing attention to the employment of the elderly population (Barcelona Council 2002) and to promote active ageing (European Council of Brussels 2003). The new strategy, Europe 2020, confirms the request to the Member States to increase the employment of older workers (European-Commission 2010).

Despite the efforts of the European Union to encourage widespread continuing vocational training (CTV), the percentage of participants in CTV has decreased in the last period 1999-2005 and the participation of older employees (aged 55 and over) is lower than that of employees between 25 and 54 years old (European-Commission 2008).

Why do older employees participate less than their younger colleagues? Different explanations are offered in the literature, ranging from studies based on social mechanisms of discrimination of older people, models emphasising the disengagement of the latter from economic activities, to studies either based on economic cost-benefit theory, or psychological models of decline, or educational arguments referring to prior experiences in learning and individual dispositions (Chapter Four).

In this broad literature, work, ageing and education are usually discussed separately. When the focus is work, individuals are seen as *homini economici* guided by self

interests and economic calculus (i.e., cost-benefit discourses). When the focus is ageing, the discourse is on decline, structural dependence, and discrimination. In this case the emphasis is on individuals seen as powerless subjects in front of the societal or biological dominant trends. When the focus is on education in later age, the emphasis is on empowerment and remedies against the cognitive decline.

However in educational studies there are interesting attempts to take together the contextual side with the individual one. Yet, as I argue in Chapter Six, we can notice a kind of swing between emphasis on individuals' agency and emphasis on the influence of contexts.

My interest is in trying to reconnect these two points of view, the individual and the contextual sides, through adopting a cultural historical activity perspective (Chapter Three). It is my conviction that in order to understand how to support a longer professional life we need to look at how employees engage in their working practices and how their professional development is linked to the jobs they are in charge of. The case of older employees is interesting because they have already covered most of their working life and it is possible to analyse the interplay between their current working practices, the social collective dynamics in their workplaces, and their subjectivities, taking into account the mediation of their working experiences in this interplay. As will become clearer later on, this interplay is fundamental to the development of learning needs and motives, and the latter, widely neglected in the European Union's documents (Chapter Two), are essential in learning processes. I am about to present how I have come to this understanding of the issue of older workers and learning now.

I began my research by looking at the economic changes in the Western developed countries, to appreciate the context in which an ageing workforce is occurring. Employees in different positions and with different responsibilities are coping with these changes which are interpreted in the literature I discuss in Chapter Two as the effect of the development of a knowledge-based economy and an informational society. Taking account of these economic and social transformations the European Union countries agreed to the Lisbon strategy, confirmed in the Europe 2020 strategy, in which lifelong learning has a fundamental role. In the light of the educational sociocultural perspective, I have taken the stance that the European Union strategy on lifelong learning is based on a traditional view of what is learning.

Because of the rapid pace of innovation and changes in workplaces, in the current European Union's discourses on lifelong learning the conceptualization of learning is limited to the recognition of a variety of learning settings as formal, informal and not-formal, in which people develop key competences for adapting flexibly to the changing world. There is no consideration of how people learn and develop, and how motivation forms, especially in the case of employees with long work experience. Learning is seen as merely an individual endeavour.

Yet, since the economic and social changes are knowledge-based, a conceptualization of learning is needed which takes into account the interplay among individuals participating in material collective activities in a continuous transformation.

I have found in the Cultural Historical Activity Theory (CHAT), the theoretical perspective which can support my analysis of older workers' vocational learning (Chapter Three) in the context of social and economic changes (Chapter Two). According to this theoretical approach, learning takes place in collective interactions dealing with object-oriented activities, mediated by cultural and historical artefacts, in which human subjectivity develops as one pole of the system of interactions. Learning is a collective and cultural process about making sense in intersubjective and social relations, enacted in transformative collective material activities. The concept of activity as a three-level structure allows explanation of the tensions between the collective and individual planes, linked by the object and motive of/for the activity, but also distanced from each other when high division of labour occurs (3.4 and 5.5). In this system of interactions, individual and socio-cultural changes have to be analyzed as single historical processes of development.

On the basis of CHAT, it is not possible to take for granted that the European Union's motive to build the knowledge-based economy can be fully shared by older workers. Older workers are active subjects acting on the object of the industrial activity in the enterprises where they are employed. Yet their engagement in the workplace depends on their position in the activity and the process of making sense of their engagement in that. I focus on strategies of production as a way of approaching the issue of how older workers subjectively make sense of their tasks in relation to the labour process and work organization enabled by the strategy of production.

The aim of my research is to explore the subjective side of older workers' (a term I define below) learning by adopting i) the cultural-historical conceptualization of subjectivity and ii) the new concept of strategy of production, developed under the influence of the CHAT perspective, to refer to the object of the working activities in which the older workers are involved. My exploration is guided by the following two research sub-questions:

- How do strategies of production affect older workers' engagement in working and learning?
- How do their subjectivities play a part in this engagement?

The two concepts, subjectivity and strategy of production, are introduced in Chapters Three and Five and the above research questions discussed in the methodological Chapter Seven. The reading of these chapters will progressively clarify what the relationship between these two concepts is and how this relationship is explored and refined in my empirical work.

I now just mention that - adopting a CHAT influenced perspective - I discuss the Tayloristic organization of work and in particular, the separation between conception and execution (5.5). I argue that this organizational principle can have the effect of distancing the worker from the object/motive of the production activity in which he/she is involved. In this discourse the issue of the motives for learning emerges, linked to the personal sense of carrying out the tasks assigned in the workplace. This is the point at which my research takes a different path, compared to other workplace learning studies which adopt the concepts of habitus and dispositions, about how to investigate the subjectivity of the workers (Chapter Six). In my approach, the subjectivity is interpreted looking at the personal senses and hierarchy of motives which constitute the self, formed through participation in collective transformative material activities across life and making personal senses of those experiences[1]. This subjectivity, grounded on past and present activities, and subjected to the continuous transformative dynamic of making sense of *experiences*, orients the workers in current working practices and their engagement in them.

[1] I tend to use the plural of nouns (e.g. personal senses) to express the idea of variety of experiences and contexts within life which can produce a variety of personal senses sensitive to circumstances.

Indeed the concept of experience has emerged as central in the definition of the 'older worker' in this research. The European Union documents adopt an age-based definition of the older worker, often using the threshold of 45 years, so that older workers are the ones aged 45 years or more, with the implicit assumption that ageing is a linear process, similar for every one and with a clear boundary. I have elaborated my own definition of the older worker as a person who has accumulated a good deal of experiences and made sense of them, including the fact of becoming chronologically old. This definition has developed from the discussion in Chapter Four of the standard model of looking at ageing as mainly a biological process of declining mental and physical capacities, contrasted by other studies which stress the importance of experiences in compensating the biological ageing of the human organism. To this view, which still focuses on the biological side of ageing, I have opposed the humanistic approach to ageing with its emphasis on life review and sense making of becoming an old worker. Yet I have revisited this perspective from a CHAT influenced vision, as I discuss at the end of Chapter Four, to include the subjective feeling of being an old worker and relate this latter to having and making working and learning experiences. I adopt this view on being an older worker in my empirical work and discover that actually the awareness of being an older worker is related to the current position at work and the expectations about the future (section 10.4).

I have chosen to study older workers on the shop floor in industrial activity, because statistical analysis indicates that low educated workers are one of the most disadvantaged groups and the European Union's documents call for special interventions to support them. Workers on the shop floor are typically people with a low level of education. Nevertheless older workers keep on learning through the working practices and their engagment in the strategies of production. I define this as vocational learning. My use of vocational learning has some affinities with the concept of workplace learning as will become apparent from my literature review in Chapter Six.

The adoption of the CHAT perspective brings about a change of language. New concepts emerge which relate to each other in unusual ways. For instance, it is not possible to talk about individual development without talking about activities' development.

My research is guided by the commitment to link different streams of research, related to the issue of older workers' learning, in order to have a complex picture of it and provide useful indications for policies.

As it emerges from what has been reported so far, having the object of the research as the very guide of the process of researching has led me to carry out an interdisciplinary research. There is a growing interest in this type of research (Sawchuk and Stetsenko 2008; Blunden 2009). However, the field of human sciences is still organized by areas and researchers' careers regulated by a close identification with a specific area. From this stems what some scholars denounce about some key scientific journals which tend to select articles on the basis of their recognisability in terms of reference to the specific field from which they have originated, refusing dialogue with whoever brings a different perspective on the same object of the discipline (Billett 2009). I hope that this research may show how rich can be the vision on a phenomenon when more disciplines contribute to frame its interpretation.

2 Economic transformations and lifelong learning

2.1 Introduction

The current trend of the ageing workforce (CEDEFOP 2010, 40) is occurring in an epoch of economic changes comparable, according to Castells, to the Industrial Revolution (1996). Western developed countries have been experiencing intense changes in production activities in the last decades, which seem to be characterized by the increasing importance of information, knowledge and innovation. The European Union institutions deem that the competition with the rest of the world has to be played on the level of the development of knowledge and the expansion of information technologies (European-Council 2000; European-Commission 2002). Individuals in different positions and with different responsibilities are coping with the development of the knowledge-based economy and the informational society.

In this chapter, I outline these transformations, emphasizing their social and individual aspects, to locate the issue of older workers in the changing situation. There is a wide debate about whether the impacts of the economic trends on individuals' lives are negative or positive. I will present both sides of this debate, referring to Castells (1996; 2000) and Sennett (1998), who point out the power of the global network on individuals, and Giddens (1990; 1991) as a representative of a vision of the opportunities opened up to individuals in modern societies. The organization of work is another aspect impacting on the individual's life. According to Castells, the trends towards the knowledge economy and the pivotal diffusion of the information and communication technologies should imply a different organization of work, with a flat hierarchy, the recognition of tacit knowledge and the wider participation of workers.

As highlighted by the Kok report (2004) mentioned in Chapter One, the on-going ageing process may cause a conspicuous slowing down in European economic growth. This issue is particularly crucial in a country such as Italy, where there are regions with the most aged population in European Union (IRES-Piemonte 2001; Migliore, Abburrà et al. 2002; Gesano 2010).

In the framework of the European Employment Strategies (EES), the European Council calls on its Member States "to equip all individuals with the skills required for a modern workforce in a knowledge-based society" (Council decision of 22 July 2003). I will

discuss the European Union's lifelong learning strategy, pointing out that it is based on a conceptualization of learning which is not adapted to interpreting the issue of older workers' learning and working in changing economic activities. Specifically, the interplay among the different actors is neglected, as well as the individual construction of meaning. The responsibility for developing a positive attitude towards learning is conceived as a matter for the workers, while the role of production activities and work organization in creating the motivation to learn is undervalued.

2.2 Transformations in economic activities

The aim of this section is to refer to the main trends in western countries as they are interpreted in the literature, so as to clarify the background of my research on older workers' learning.

At the turn of the twenty-first century, many western developed countries have been experiencing for some decades two types of changes:

- ✓ The changes following the transition from the old industrialism towards a new mode of development of capitalism, defined in various ways, such as post-industrialism or informational industrialism, and involving the entire society.
- ✓ The changes intrinsic to the new mode of development, brought about by the ongoing innovations in technology and knowledge, which are necessary to maintain economic growth in the global economy.

I discuss the first type of change, referring to the contributions of Bell and Castells, and defer the examination of the second type in the next section.

When Daniel Bell introduced the term "post-industrial society", the changes were under way, and he intended to provide a conceptual prism through which he could identify an "agenda of questions" that society would face (1973, 9). Twenty years later, Manuel Castells is able to trace the transformation of the social framework forecasted by Bell, giving a partially different interpretation of it (1996; 2000).

Bell justifies the term "post-industrialism" referring to Clark's work, with his distinctions among agricultural, industrial and services sectors, and his argument about the trajectory that the nations would follow according to the development of sectorial differences in productivity (1976, 14). Bell concludes, using this criterion, that a post-

industrial society is one in which the majority of the labour force is employed in the services sector, thus putting his emphasis on this sector. Castells advances the analysis of the service sector, pointing out that service activities have become inseparable from industrial activity, and thus moving his argument from focusing on key sectors in the economy to the relevance of information technology in the global economy:

"Attempts at defining services by some intrinsic characteristics, such as their "intangibility", opposed to the "materiality" of goods, have been definitely voided of meaning by the evolution of the informational economy. Computer software, video production, microelectronics design, biotechnology-based agriculture, and so on, and many other critical processes characteristic of advanced economies, merge inextricably their information content with the material support of the product, making it impossible to distinguish the boundaries between "goods" and "services"."

(Castells 1996, 205)

Bell and Castells also differ in their emphasis on theoretical and applied knowledge. For the former, the novelty is the link of industry to theoretical knowledge. Castells acknowledges the role of science, but his emphasis is on informational technologies, since in his opinion they are the core of the transformation in the technological revolution experienced by the advanced societies:

"Information technology is to this revolution what new sources of energy were to the successive Industrial Revolutions, from the steam engine to electricity, to fossil fuels, and even to nuclear power, since the generation and distribution of energy was the key element underlying the industrial society."

(Castells 1996, 31)

He warns us not to confuse the preeminent and distinctive role of information technology in this revolution with the necessity for the new knowledge and information which was required in the preceding technological revolutions. The difference is that information technology allows knowledge and information to be generated in a cumulative feedback loop between new knowledge and its use (Castells 1996, 31-32). This occurs in all sectors, including manufacturing.

The informational economy can vary across contexts differentiated by specific cultures and institutions. However, the diverse forms of the informational economy share the same "organizational logic". Castells borrows this concept from Nicole Biggart to indicate the cultural framework of the different strategies of productions emerging in the informational economy around the world[2]. The different organizational changes all tend

[2] "By organizational logics I mean a legitimating principle that is elaborated in an array of derivative social practices. In other words, organizational logics are the ideational bases for institutionalized authority relations." (Biggart quoted in Castells 2000, 164). As interpreted by MacDuffie "Organizational logic is a term used by sociologists to describe principles or frameworks for action that indicate preferred directions without dictating particular practices (Useem 1993; Biggart 1991)." MacDuffie, J. P. (1995).

to 1) enhance flexibility in production, management and marketing to cope with the growing uncertainty in the global economy; 2) redefine labour processes and employment practices to save labour by automation and the elimination of tasks, as well as by flattening the hierarchical structure; 3) interact with information technology, and 4) focus on knowledge management and information processing (Castells 2000, 163-165). In some contexts, the transition is from mass production to flexible production; in others, old forms of organization, pushed aside by industrial development, re-emerge more adapted to the requirements of the new economic system. I come back to these different strategies of production in Chapter Five.

In the following section, I present the organizational changes which support innovation and take advantage of information technology, as elaborated by Castells.

2.3 The informational society and organizational changes

As discussed above, a technological transformation is taking place, reshaping the material basis of society. At accelerated pace, new forms of relationships between economy, state and society are emerging. Capitalism is still the mode of production, but it has restructured itself since the 70s, when the increase in the price of oil showed the limitations of industrial development based on energy sources (Castells 2000). Since then, the mode of development has shifted towards technological innovation and organisational change to cope with financial difficulties. The fundamental element in the productivity is now knowledge and information related to the development and diffusion of related technologies (ICT), and no longer the energy sources as in previous industrial development. Informationalism, this new mode of development of the capitalistic mode of production, has its distinctive trait in the fact that:

"… the source of productivity lies in the technology of knowledge generation, information processing, and symbolic communication."

(Castells 1996, 17)

Frost summarises in six key points the characteristics - identified by Castells - of new organisational forms belonging to the informationalism mode of development:

"

1) they have shifted 'from mass production to flexible production, or from Fordism to post-Fordism

"Human resource bundles and manufacturing performance: organizational logic and flexible production systems in the world auto industry." Industrial and Labor Relations Review **48**(2): 197-221.

2) ‘the crisis of the large corporation, and the resilience of small and medium firms as agents of innovation and sources of job creation’ (1996, p155)

3) […] ‘new methods of management’ (1996, p157), these include ‘just in time’ methods, total quality management, the focus on team work and the development of flat hierarchies, for example. Central to this aspect of globalisation is the changing relationship between management and workers.

4) one feature of these changes is the emergence of a ‘multidirectional network model enacted by small and medium businesses’ (1996, p160) – this and other forms of networking are central to the information age.

5) ‘the licensing-subcontracting model of production under the umbrella corporation’ (1996, p160) has also emerged as a feature of contemporary organisation

6) and finally, it follows that corporate strategic alliances are also central to the new organisational structure (1996, p162).”

(Frost 2000, 3-4)

According to Castells, the aim of the transformation of large scale organisations is “… to ensure both innovation and continuity in a fast changing environment.” (1996, 166).

The capability to innovate, both process and product, is largely determined by information technologies, which provide the infrastructure for flexibility and adaptability in the management of the production process (ibid., 243). Castells stresses that information technologies are not necessarily used to their potential. The work that is based on information technology “... call[s] for cooperation, team work, workers’ autonomy and responsibility ...” (ibid., 246). Nevertheless, in the 1980s and 1990s the potential of the information technologies was often constrained, either within old sets of organizational goals or by the aims of saving labour, trimming costs and subduing unions rather than enhancing productivity (ibid., 242, 249). In fact, the introduction of information technology without organizational changes brought about an increase in bureaucratization and rigidity (Castells 2000, 184).

From this discussion emerges the relevance of designing work organization to take advantage of information technology, in order to gain flexibility, develop knowledge and information, and support innovation. At the same time, as was pointed out by Castells, organizational changes can vary according to the cultural and historical features of the context, as well as the goals of the organizations (2000, 164 and 187). In Chapter Five, drawing on industrial sociology, sociology of work and organization,

political economy, I present different strategies of production as ways of organizing the industrial production driven by different goals, responding to different contextual and historical challenges. This is relevant to my research on older workers' learning, for I want to develop a broader view of what learning means and link this to the degree of participation of workers allowed by the work organization.

2.4 The self in the informational society

As discussed above, in an informational society new organizational trends emerge based on networking and the complex relationships required to cope with the need for flexible production. Although Castells sees in the work that is based on information technologies a possibility for a wider participation of workers, he holds a negative view about the impact of the different forms of businesses networking and points out the increasing loss of power of workers in the relationship between capital and labour. In Castells's opinion, such networking assumes a sort of autonomy over the subjects, since it imposes the fulfilment of goals and takes strategic decisions with indifference to individuals and regions:

> "… global networks of instrumental exchanges selectively switch on and off individuals, groups, regions, and even countries, according to their relevance in fulfilling the goals processed in the network, in a relentless flow of strategic decisions."
>
> (Castells 1996, 3)

Moreover, the decentralization and networking of firms and the transformation of work processes due to information technology increase the individualization and diversification of working relationships, weakening the influence of the labour movement, which has difficulties in representing new kinds of workers such as women, youth, and immigrants, and act in the new types of workplaces and in the new global organization of production (Castells 1996, 1 and 278). Castells concludes his analysis by emphasizing the dramatic restructuring of the capital-labour relationship since the early 1980s in the direction of the loss of labour protection:

> "But never were the workers (regardless of their skills) more vulnerable to the organization, since they had become lean individuals, farmed out in a flexible network whose whereabouts were unknown to the network itself."
>
> (Castells 1996, 279)

What is important to point out here is that even skills were not enough to protect workers from the re-organization of work:

"Skills were not enough, since the process of technological change accelerated its pace, constantly superseding the definition of appropriate skills."

(Castells 1996, 278)

However, Castells remarks on the institutional variation between the United States and the European Union, due to a better defence of the preciously conquered positions by the labour institutions of the latter (1996, 277).

The theme of indifference to individuals and regions highlighted by Castells is also central in the work of Sennett who writes that the new economy:

"…. radiates indifference. It does so in terms of the outcomes of human striving, as in winners-take-all markets, where there is little connection between risk and reward. It radiates indifference in the organization of absence of trust, where there is no reason to be needed. And it does so through reengineering of institutions in which people are treated as disposable. Such practices obviously and brutally diminish the sense of mattering as a person, of being necessary to others."

(1998, 46)

In particular, this author points out that older workers represent the segment which suffers most from this indifference, since they are targeted during downsizing and restructuring (ibid., 94). More generally, the fragmentation of work, the frictions within teamwork and the disappearance of career paths have debilitating consequences on the sense of identity, self-worth, commitment and loyalty, since they undermine the sense of continuity which individuals need to construct their lives as an organized narrative.

Though Castells and Sennett seem to recognize the role played by the self in constructing the meaning of life as people search for new connectedness around shared identity, they underline the socioeconomic context as bringing constraints on the self (Castells 1996, 1-25). Giddens has a different stance and emphasizes the agency of individuals as generating choices. He declares that:

"The self is not a passive entity, determined by external influences; in forging their self-identities, no matter how local their specific contexts of action, individuals contribute to and directly promote social influences that are global in their consequences and implications."

(1991, 2)

Giddens stresses the importance of life style in choosing work, due to the plurality of options and the diversity of 'authorities' in what he calls high modernity[3]. Individuals are encouraged to build their own lifestyle. In doing so the self of the subject constructs a reflexive project that "… consists in the sustaining of coherent, yet continuously

[3] Giddens terms the current period of modernity as high, refusing the concept of post-modernism which assumes the overcoming of modernity. He thinks we are entering in a time of radicalisation and universalisation of the features of modernity such as reflexivity, see Giddens, A. (1990). The Consequences of Modernity. Cambridge, Polity Press. pages 3 and 38.

revised, biographical narratives …" (1991, 5). Through reflexivity, the self organizes a trajectory and a plan for a life. "The self-identity becomes a reflexively organized endeavour." (1991, 5). "The key reference points are set 'from the inside', in terms of how the individual constructs/reconstructs his life history." (1991, 80). The social norms seem to lose influence on individual as each creates "… a personal belief system by means of which the individual acknowledges that 'his first loyalty' is to himself." (1991, 80).

The reflections developed by Giddens take into account individual actions in the social contexts, while Castells and Sennett are inclined to underline the power of the global network over individuals. Both these perspectives raise the issue of relations of power. Giddens tends to highlight the individual's margin for action, while Castells and Sennett point out the limitations of this in the network society, in which the process of the construction of the individual and collective Self - excluded from the global network - can be based on the refusal of the global network itself. The higher degree of power ascribed by Giddens to individuals stems from his theory of structuration, which considers individuals as both creators and users of the norms and rules structuring social systems. Beyond this position there is the issue of the relation between actions and structure, with its parallel methodological implications about the analysis of micro and macro levels of reality (Fielding 1988). My view on this issue is shaped by the theoretical approach which I adopt to conceptualize learning, and which I discuss in Chapter Three (see in particular section 3.3.2).

The analysis by Castells and Sennett of the impact of the new flexible capitalism mostly refers to the dynamics of corporations in the neo-liberalistic capitalism of the United States and in economic activities organized at global level. Yet in Europe, and especially in Italy, the structure of production is characterized by the important presence of small and medium enterprises (SMEs) which are heavily challenged by globalisation, but more rooted and embedded in the local communities[4]. Moreover, continental European SMEs operate in an institutional context of "state capitalism", where labour is more protected than in Anglo-Saxon capitalism. In such a context, the relations among the local social actors can develop a more integrated response to the global competition,

[4] However there are scholars who point out that even the multinational corporations are spatially stable, especially in their core locations Hayter, R. (1997). The Dynamics of Industrial Location: The Factory, the Firm and the Production System. Chichester, John Wiley and Sons..

based on accumulated technological knowledge, competences and a tradition of flexible specialization (Piore and Sabel 1984; Hayter 1997; Antonelli 2005). However, there is also a trend towards the erosion of workers' rights under the pressure of global competition, the increasing power of transnational corporations (Webster 2002), and more generally, the possibilities in a globalised economy for subcontracting to firms where the personnel is non-unionized and labour cost low (Hayter 1997).

Having depicted the socioeconomic transformations occurring in the developed countries, in the next section I turn to the European strategies for facing challenges coming from the new knowledge-driven economy (European-Council 2000).

2.5 The European Union's response to the knowledge society: the strategy of lifelong learning

Acknowledging some of the changes highlighted in the literature which I have discussed above, the European Union (afterward EU) emphasizes the need for national policies supporting people through lifelong learning.

At the extraordinary Luxembourg Council of 1997, which set up the European Employment Strategy (EES), lifelong learning became an objective, to promote employability and combat unemployment. Since then, the scope attributed to lifelong learning has been extended. In this process the milestone was the Lisbon Council in 2000, when a new and wider strategic goal was agreed among the Member States: to become the "most competitive and dynamic knowledge-driven economy in the world". The information society is for all, and social exclusion is combated through lifelong learning which has "higher priority […] as a basic component of the European social model …" (European-Council 2000, 9). The Europe 2020 strategy confirms the priority of investing in lifelong learning (European-Commission 2010, 22-23).

The definition of lifelong learning in the UE documents has developed throughout the years, extending the objectives of the learning activity from those related to employment – as stated in the European Employment Strategy - to a wider range. In "Making a European Area of Lifelong Learning a Reality", lifelong learning is defined as "all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective" (European-Commission 2001, 9). Within this broad definition,

lifelong learning appears to be characterized by a multidimensional social function: it is seen as a factor for improving quality and productivity at work, but this is an objective overarched by and interrelated with full employment, social cohesion and inclusion, the other objectives of the Lisbon agenda. In this view, it also follows that learning can take place in formal, non-formal and informal settings, and that the learner plays a central role (European-Commission 2001, 23). Recently, lifelong learning has acquired a still more comprehensive definition, which includes learning through guidance and counselling (European-Parliament and European-Council 2006, 6).

Lifelong learning has to be accessible for all, regardless of age, and "[e]very citizen must be equipped with the skills needed to live and work in this new information society." (European-Council 2000, 3). This objective can be achieved with success through a variety of partnerships among all the key actors – the different levels of government, the social partners, the employers, those who work in education and training, civil associations, and individual citizens - on the base of a shared responsibility (European-Commission 2000, 5).

Learning is seen not only as acquiring knowledge, but as the development of knowledge and competences, a process possible if people learn how to learn (European-Commission 2001, 23). New practices and innovative pedagogies are needed to support individuals' competence development, implying the valorisation of non-formal and informal settings and new roles for teachers and learners (ibidem, 2001, 5). Formal learning is defined as taking place in education and training institutions, leading to recognised diplomas and qualifications. Non-formal learning is a structured activity, but does not lead to formalised certificates. It may occur in the workplace and in social activities. Informal learning is not necessarily intentional learning, and may be not recognized by individuals (European-Commission 2000, 8).

When measures to encourage workers and adults to learn are debated, the discussion concerns promoting information, quality of provision, removing barriers, facilitating and widening access, recognition of professional experiences through certification, and flexible work schedules (European-Council 2008; European-Council 2011).

In the next paragraph I highlight the limits of the European response as stemming from the poor conceptualization of learning and poor awareness of the differential needs of the older workers.

2.6 Problems in the current European educational response to the economic transformations and ageing workforce

The reports on the progress on the Lisbon objectives for education and training highlight that the participation of low-skilled and older workers is seriously underrepresented in lifelong learning and in continuing vocational training (European-Commission 2006, 39-40; European-Commission 2008, 60). Another recent European Union document continues to consider the low level of participation of older workers in adult learning a major problem (European-Council 2008).

I argue that one of the explanations for this exclusion is a poor conceptualization of learning, which brings about inadequate policies for lifelong learning (LLL) in these cases. According to Saunders' classification of theories on the relation between education and work (2006), it emerges from the following analysis that the European approach refers to functionalism and human capital theory narratives, combined with a progressive emancipatory narrative. This brings about an emphasis on individual responsibility, and tends to overlook the role of the context as a dimension in which practices and relations evolve as a single development. This a-contextual view is also reflected in the conceptualization of skills and knowledge mainly seen as the outcome of information processing, detached from cultural and social practices.

2.6.1 The traditional view on skills and learning

Referring to Guile (2002) and Darrah (1996, 11-12), one of the assumptions that underpins a traditional conception of skills is that it is possible to break down into constituent parts the skills that are needed to perform adequately in jobs, and by extension in the knowledge-based economy and society. The other assumptions are that people can perform the same skills independently from their contexts, and that if they do not possess these skills, they cannot perform properly. This view implies the design of training programmes in which the elements of training match the elements of the skill, following Thorndike's notion of 'identical elements'. In this behavioural perspective all the contexts are identical, so that the same stimuli provoke the same response, and transfer of skills is possible. According to the cognitive paradigm, knowledge is considered as divisible into homogeneous blocks and transferred as mental models and representations. Since the content is standardized, the process of assessment can be easily organized.

This traditional conception of skills goes with a conceptualization of learning as information processing in which the mind acquires clear, coded and unambiguous information. In the words of Sfart and Guile, knowledge and skills are conceived as commodities stored in mental structures and "converted into people's private property" (Sfard 1998; Guile 2001, 471). Darrah's ethnographic analysis of workplaces shows that such a conception of skills is value-laden "in that it directs our attention to the actions of workers, but not to the historically conditioned relations within which they work." (1996, 29).

The conception of skills and learning in the EU's documents is related to such a traditional view of knowledge. In the European Reference Framework on key competences recommended to the Member States in 2006 to guide the implementation of lifelong learning policies, competences are viewed as a combination of knowledge, skills and attitude (European-Parliament and European-Council 2006). Despite this broad definition of what people need to be active citizens, which also includes subjective aspects such as attitude, the terminology used abounds in verbs such as "equip" and "update", while little attention is given to personal development. For example:

> "[Member States are recommended to ensure that] initial education and training offers all young people the means to *develop* the key competences to a level that *equips* them for adult life, and which forms a basis for further learning and working life (…) adults are able to *develop* and *update* their key competences throughout their lives, and that there is a particular focus on target groups identified as priorities in the national, regional and/or local contexts, such as individuals needing to *update* their *skills*"
>
> (European-Parliament and European-Council 2006, 11, my emphasis)

These verbs denote a conception of knowledge and skills as objects to be supplied, and which are supposed to move into and be acquired by the minds of individuals. The verb "develop" tends to indicate the development of competences and conflate it with personal fulfilment and development. Moreover the key competences – in communication, mathematics, science, and information technologies - are set out as a closed list, delimited and separated[5] (European-Parliament and European-Council 2006), reflecting the conceptualization of knowledge as well coded, easy to transfer and be acquired. Moreover, this European Reference Framework on competences refers to individuals in general terms, with only a marginal mention of the relevance of contexts

[5] Interrelations and overlaps among competences are only mentioned, but not elaborated.

and the activities carried out by the individuals (European-Parliament and European-Council 2006, 13), for whom opportunities and needs for learning can widely vary.

This neglect of contexts and activities seems in contrast with the aim of the EU's strategy to rely on lifelong learning to build a knowledge-driven society and economy and provide skills and knowledge to anyone to adapt to the changes. This aim is even more emphasized in the Europe 2020 strategy where the functionalistic perspective clearly appears in the emphasis on education viewed in function of the labour market needs:

> "Member States should promote productivity and employability through an adequate *supply* of knowledge and skills to match current and future demand in the labour market. (…) Regular monitoring of the performance of up-skilling and anticipation policies should help identify areas for improvement and increase the responsiveness of education and training systems to labour market needs."
>
> (European-Commission 2010, 21-22, my emphasis)

This contradiction is due to the human capital theory which underpins the EU's discourse on lifelong learning. As argued by Brown, who develops his reflection drawing on the work of Fred Block, this theoretical perspective tends to consider the formation of skill and human capacity of work "in isolation from the social relations in which individuals are embedded." (Block 1990 quoted by Brown 2001, 14), undermining the social aspects in the construction of skill. Brown also stresses that human capital theory neglects the issue of motivation to learn, relying on economic incentives (Brown 2001, 14). I come back to this issue in the next section.

The next section focuses on the assumption of individuals as atomized entities, behaving independently from the activity in which they are involved.

2.6.2 The individualistic view of the learning process

The 2008 report on progress towards the Lisbon objectives states that the lifelong learning perspective constitutes a shift of focus from the responsibility of the institutional level to the one of individuals to whom diverse opportunities for learning are opened up. The stress is now focussed on process and outcome oriented learning opportunities (European-Commission 2008, 24).

Learning is mainly considered as a process that can be entirely managed by individuals who can choose from a wide range of learning opportunities. In this perspective the

general competence of "learning to learn"[6] recommended in the European Reference Framework, becomes crucial to be able to seize the learning opportunities. Such a competence is defined as follows:

"'Learning to learn' is the ability to pursue and persist in learning, to organise one's own learning, including through effective management of time and information, both individually and in groups. This competence includes awareness of one's learning process and needs, identifying available opportunities, and the ability to overcome obstacles in order to learn successfully. This competence means gaining, processing and assimilating new knowledge and skills as well as seeking and making use of guidance. Learning to learn engages learners to build on prior learning and life experiences in order to use and apply knowledge and skills in a variety of contexts: at home, at work, in education and training. Motivation and confidence are crucial to an individual's competence."

(European-Parliament and European-Council 2006, 16)

In this quotation, learning is an individual endeavour in which perseverance, time management and self-efficacy, which are seen as individual characteristics, are fundamental. Motivation is conceived as an individual attribute too and there is no consideration on how motivation can develop[7].

Yet the issue of motivation is seen as a crucial element. In the recent renewed European Agenda for the adult learning sector the low level of motivation is listed as one of the obstacles to the participation in education and training:

"Participation in adult learning has continued to fall, from 9,8 % of the 25-64 year-old population in 2005 to only 9,1 % in 2010, thus making the increased 'ET2020' target of 15 % by 2020 an even greater challenge. Obstacles such as low motivation and a lack of care facilities to help women and men combine family and work responsibilities with learning therefore need attention."

(European-Council 2011, 2)

The overall picture emerging from the EU's documents which have been examined above is that learning is an individual phenomenon, and the learner is finally responsible for her/his learning and training throughout life. This means that s/he has to develop a learning attitude and motivation. This idea is clearly expressed in initial documents such as "Making a European Area of Lifelong Learning a Reality":

"All actors share a responsibility to work together on lifelong learning (…) and to support individuals in taking responsibility for their own learning."

(European-Commission 2001, 11)

---

[6] This is one out of eight key competences for lifelong learning recommended by the European Reference Framework as presented in the following document: European-Parliament and European-Council (2006). "Recommendation of the European Parliament and the Council of 18 December 2006 on key competences for Lifelong Learning (2006/962/EC)." Official Journal of the European Union(L394/10).

[7] It is worth noticing that - in the above quoted text - verbs typical of the cognitive paradigm are used. Saying that "[the] competence means gaining, processing and assimilating new knowledge and skills" is like referring to unambiguous symbols and tools which are external and become internal representations in the mind. I come back to this point in Chapter Three, section 3.2.

and confirmed more recently in the renewed European Agenda for adult learning which plans to:

"(ii) develop a new approach to adult education and training which focuses on learning outcomes and learner *responsibility and autonomy*;

(iii) foster greater awareness among adults that learning is a lifelong *endeavour* which they *should pursue at regular intervals during their lives*, and particularly during periods of unemployment or career transition;"

(European-Council 2011, 3 my emphasis)

Indeed, a European survey shows that individuals' main reasons for planning less vocational training in the near future are linked to their workplaces and the supply of vocational training: 26% of people are not aware of the need for any new skills for their job and 17% think that employers do not make the necessary time or funding available; 18% feel that appropriate training is not on offer (European-Commission 2006, 39). Yet the interpretation of those findings is that more financial support is needed (ibid., 39), confirming a limited conceptualization of learning activities, which are seen only as economic activities carried out by those who, provided with enough information, and aware that benefits exceed costs, and that time arrangements are available, do not have any other reason for not participating in it. In this interpretation, individuals are seen as guided by self-interest and assessment of costs and benefits, thus responding to incentives, and motivation for learning as arising from an economically rational choice[8].

As discussed in the previous sections, in the knowledge-based economy work practices are continuously including and developing new technological knowledge, and the participation of workers is relevant to fostering continuous innovation. For this ongoing process of transformation of reality, learning as an individual endeavour and based on the development of skills is not appropriate to support workers. As argued by Engeström and Guile, there is a "link between the emergence of new modes of production, new conceptions of expertise and new modes of learning" (Guile 2007). I will discuss this link in Chapter Five.

In the next chapter I discuss a conceptualization of learning focused on the interaction between individuals and the culture on which their lives impinge (Bruner 1997, 13). This focus contrasts the computational view of the mind perceived as a system for processing information, governed by rules which "do not cover the messy, ambiguous, and context-sensitive processes of meaning making …" (ibid., 5). I then focus on the

[8] I will discuss this view further in Chapter Five, section 5.7.

cultural-historical perspective to take into account learning as a culturally mediated relation in the context of localized interdependent practices. The same theoretical framework provides a conceptualization of motivation.

2.7 Concluding remarks

The sociological account provided by Bell and Castells indicates the relevance of learning processes for workers in the organizational changes brought about by the informational economy. Besides the importance of learning, the above discussion indicates the organization of work as pivotal for the diffusion of information technology and enhancing performance of enterprises. Yet neither the conceptualization of learning nor the relation between this and work is at the centre of the interests revealed in the literature on informational economy.

The EU's approach to lifelong learning seems to concentrate on the individual level and tends to overlook the role of the activities in which workers are actually involved, their embedded culture, and the institutional contexts. Therefore a theoretical framework is needed to connect learning, the working activities and the strategies of the enterprises in the global economy.

The next step is to discuss the contribution of Cultural-Historical Activity Theory to framing the issue of what is learning and how it is related to activities defined by their specific tools, objectives and mediational cultures. The conceptualization of learning as a collective and cultural phenomenon will guide my research on older workers' learning.

3 Learning as a cultural and collective process

3.1 Introduction

As discussed in Chapter Two, according to the European Union, in knowledge-based societies, citizens need to continue learning in order to adapt flexibly to the transforming and interconnected social and economic world. The European policies seem to be based on the assumption that once workers are informed and guided about learning opportunities, costs are shared, and time is arranged in an appropriate way, participation in lifelong learning should increase. However the rate of participation seems still to be inadequate, especially in the case of low-skilled and older workers.

The first consideration is that in the new social and economic context the possibilities of learning become more complex due to the type of development required in knowledge-based societies. As I discussed in the previous chapter, global competition imposes a rapid pace of innovation which needs new organizational models of work, adapted to value the technological knowledge embodied in the work practices and workers, and to support the sharing and creation of it. In this context learning is an ongoing activity. Moreover, the ageing of the workforce emphasizes the relevance of technological knowledge mastered by older workers.

The second consideration is that the fragmented society stretches the cohesion between collective aims and individual goals, already weakened by the division of labour. Therefore an adequate response to the need of people to learn, share knowledge, and participate in its creation should take into account the motivational aspects of the working activity, as favouring learning.

As shown in Chapter Two (sections 2.5 and 2.6), in current European policy the conceptualization of learning is limited to the recognition of a variety of learning settings as formal, informal and non-formal, in which people develop key competences for adapting flexibly to the changing world. There is no consideration of how people learn and develop, and how motivation forms, especially in the case of employees with long work experience. Learning is seen as merely an individual endeavour.

Yet, since the economic and social changes are knowledge-based, and innovation sprouts from the circulation and sharing of knowledge (section 2.3), a conceptualization of learning is needed which takes into account the interplay among individuals

participating in collective working activities, acting with objects and using instruments, and making sense of what they do. Since my focus is on older workers, who are working with a perspective of a longer professional life than those of the previous generations, I want to study the link between work and learning activities.

Such a link is in fact the base for innovation. Usually learning is conceived as an activity which is not necessarily related to one's work. Here, since the focus is on workers and their employability in a knowledge-based economy, there is a good reason to concentrate on learning linked to working. I want to argue that the employability of older workers and the economic success of the activities in which they work are related. If older workers (like other workers) learn by working, that means that not only older workers have a chance to maintain their employability, but that the economic activity has a good chance of being innovative and maintaining its position in the global or local competition. I acknowledge that the success of an industrial production depends on a complex range of factors; therefore building a learning environment is not enough to guarantee the competitiveness of a business. However I want to highlight the link between workers as learners and the success of an industrial production as one aspect of this success, aiming to show that seeing learning uniquely as an individual endeavour is restrictive. I will come back to the issue of strategies of productions and learning in Chapters Five and Six.

In this chapter I explore the tenets of Cultural Historical Activity Theory (CHAT), to frame my research with a conceptualization of learning as a collective and cultural process, and not as an individual endeavour.

Before entering the world of CHAT, I come back to the cognitivist perspective surfacing in the European Union's documents (see section 2.6) to stress its features, in order to clarify the distinctiveness of CHAT from that perspective. After a brief presentation of the cognitivist perspective and its impact on the approach to education, I discuss the contributions of Cultural Historical Activity Theory. CHAT provides my research with the theoretical frame for conceiving motivation to learn as an impulse related to the subjective sense of the activities in which individuals are involved (3.3 and 3.3.1). According to this theoretical approach, learning takes place in interactions among individuals around the objects of their activities, mediated by artefacts appropriated and accumulated through social relations (3.3.2 and 3.3.3), in which

human subjectivity develops as one pole of the system of interactions (3.5). The concept of activity as a three-level structure allows explaining the tensions between the collective and individual planes, linked by the object and motive of the activity, but also distanced from each other by high division of labour. In this system of interactions, individual and socio-cultural changes have to be analyzed as unique historical processes of development (3.4).

3.2 Perspectives on learning: computational and cultural approaches

The traditional conceptualization of skills and learning mentioned in the previous chapter (see section 2.6) stems from the cognitivist view of what is knowledge and how the mind works. The cognitivist paradigm, developed with the cognitive revolution in the 1950s, draws on the Kantian idea of representation of the reality built in our mind through our perception and judgements which allow the construction of concepts then used to act in the world (Guile 2006, 253). This Kantian conceptualization of knowledge, stemming from the Cartesian conception of mind (Bakhurst 1997), had the important implications of yielding in learning theory to the view of mind as the repository of stored knowledge and learning as a process of acquisition of the theoretical knowledge or maxims of the experts (Lave quoted by Guile 2006, 254).

Bruner states that the cognitive revolution has originated the computational approach to education, to which he opposes what he calls the culturalism (1997, 1-3). The computational approach conceives the mind as a computer device, and consequently focuses on information processing. In the second perspective the mind is seen as shaped through the use of human culture and develops through meaning making.

The contributions from the computational stance are relevant to govern the process of passing information with consistency and clarity. In this view, information is finite, coded, and unambiguous, with a well-formed and finite sense, independent from the information processing and the context in which it is taking place. The management of information is governed by specifiable rules. Yet the rules which control the information processing cannot encompass the unforeseeable feedbacks in the process of knowing which is seen in culturalism as “often messier, more fraught with ambiguity than such a view allows.” (Bruner 1997, 2).

In culturalism, knowing is centred on the process of meaning making which "… is in principle interpretive, fraught with ambiguity, sensitive to the occasion, and often after the fact." (Bruner 1997, 6). This emphasis on meaning making descends from the conception of mind as linked to culture. In this approach the emphasis is on culture and not in knowledge as in the computational one. Culture is understood as sharing a common historically developed symbolism which organizes and construes the technical-social life of the community through values, rights, obligations, opportunity, power and exchanges. This symbolic heritage has been conserved, elaborated, and passed on through generations, and provides a source of identity and a way of life (Bruner 1997, 3). The individual expression of the culture is meaning making, that is:

"… assigning meaning to things in different settings on particular occasions. Meaning making involves situating encounters with the world in their appropriate cultural contexts in order to know "what they are about". Although meanings are "in the mind", they have their origins and their significance in the culture in which they are created."

(Bruner 1997, 3)

Thus meanings are situated in a context, and it is their situatedness that allows communication within the community:

"It is culture that provides the tools for organizing and understanding our worlds in communicable ways."

(Bruner 1997, 3)

These two conceptions of mind have different approaches to education. Computationalism focuses on defining rules through which individuals process information, and provides indications on how the learner can be helped to do so. Culturalism has a much wider view on what is going on in education and learning. It considers the process of knowing as intersubjective in the sense that it is about understanding each other's mind through language, gesture, or other means (Bruner 1997, 20). Individuals communicate and learn from each other, negotiating the meaning of things, using the properties of the mind and the cultural symbolic systems learned:

"Learning and thinking are always situated in a cultural setting and always dependent upon the utilization of cultural resources."

(Bruner 1997, 4)

Bruner's distinction between computational and cultural perspectives on learning offers a framework to interpret what I pointed out in the analysis of the EU's recent documents on lifelong learning (section 2.6). The EU's emphasis on providing and equipping individuals with key competences shows a computational view of mind and learning. As I noted in that analysis, the idea of a variety of contexts and cultures is very marginal.

Even if sometimes this idea is mentioned, the individualistic approach to learning – manifest in some quotations in section 2.6 – represents clear evidence of the neglect of the cultural and historical aspects of education and learning. Such a view plays down the negotiation of meanings and the situatedness of the process of learning, highlighted by cultural psychology.

Yet Bruner's aim has been to contrast and clarify the two mentioned theoretical perspectives. Since the focus of the research concerns economic activities in changing contexts and older workers participating in these changes, I need conceptual tools to frame the constant learning and interplay between individuals and contexts. Approaches based on CHAT are appropriate to shed light on learning as a cultural and collective process situated in economic and social contexts. Such a theoretical perspective is even more useful when social and economic contexts are in the process of transformation, the distribution of resources and power changes, and symbolic mediation integrates new ideas and new ways of thinking.

In what follows, I first discuss the broad theoretical underpinnings of CHAT. I then address how this school of thought views the development of mind in order to interpret how older workers' development is closely related to the development of the activities which they have been carrying out. Such an account sets out the theoretical framework for considering the relation between older workers and contexts as a continuous and dynamic interplay, forming a single process of development. In this theoretical perspective, learning is a social process of mastering and internalizing symbolic and material artefacts and externalizing these in carrying out activities with other individuals in relations of power. I then explore the concept of object-oriented activity, to highlight the relation between the individual and collective elements and frame a view of human subjectivity as inextricably linked to the collective processes of material production. This account aims at structuring the analysis of the engagement of older workers in learning, namely their motive for learning. In activity theory there are no personal attitudes, but the self is seen as co-evolving with the activities and making personal senses of the latter. The personal aspects are personal just because they belong to a subjectivity, but this subjectivity forms in the interactions with material production and social relations. I introduce the conceptualization of the self in activity theory later on in this chapter.

The next sections and subsections are going to present CHAT gradually, introducing general concepts first, and then discussing them in more detail, with an effort to returning to some issues repeatedly to highlight connections which can be appreciated only when some new ideas have been presented.

3.3 Learning as a cultural process: the contribution of CHAT

3.3.1 Activity as the underpinning concept of CHAT

The conceptualization of learning as an intersubjective and collective process is typical of a practice-based approach. Perspectives focusing on situated learning (Lave 1988; Lave and Wenger 1991), sociocultural mind (Rogoff 1990; Cole 1996; Wertsch 1998), distributed cognition (Hutchins 1995) and cultural-historical activity theory (Chaiklin 2003) share the same interest in practices, seen as a key to grasp the complexity of the interplay between mind and context. The concept of practice has its origin in three traditions: the Marxist tradition, interpretativism (phenomenology) and Wittengenstein's legacy (Schatzki, Knorr-Cetina et al. 2001).

CHAT is based on Marx's philosophy of the ontology of consciousness as developed in "The German Ideology", with its view of the primacy of human activity[9] in shaping individual consciousness. Marx developed his theory drawing upon the Hegelian idea that "... the self [is] constituted in the activity – that is, in the social practice – of labour." (Tolman 2001, 89). In Marx's account, this stance is improved upon by elaborating the relevance of the *quality* of this relationship, which was not discussed by Hegel. Marx gave a highly concrete conceptualization to practical activity, pointing out the link between human needs and activity. Human beings have needs which are not only physical, but develop historically and have to do with the quality of life and self-fulfilment. The human mode of satisfying needs is participating in social practice as well as maximising individuality and self-consciousness. In his philosophical view, human practice is the basis of human cognition, which is seen as inseparable from social relations.

The Russian psychologists adopted Marx's thinking to develop a cultural and historical approach to psychology, and to search for resolutions to the principal theoretical

[9] In this paragraph 'activity' and 'practice' are used interchangeably. In the following paragraphs 'activity' acquires a specific connotation through the presentation of the Leontiev scheme of activity, actions and operations. In that scheme, operations can correspond to practices.

problems encountered by behaviorism, Gestalt psychology, and psychoanalysis (Leontiev 1978, 2; Bakhurst 1991, 62). The project was started by Vygotsky, who gave great insights into the origin of individual development in little more than a decade, in the 1920s, before dying prematurely. He developed what he called cultural-historical psychology. Leontiev, one of his well-known followers, elaborated the related theory of activity. The works of these authors and other co-workers penetrated Western academic thinking slowly, due to the restrictions imposed by the Soviet regime on their diffusion. Yet from the 1970s their ideas started to spread in America and Europe, giving rise to the development of a wide range of studies, all having their roots in the Russian school of thought founded by Vygotsky and his followers. One way of labelling this mainstream is Cultural Historical Activity Theory (CHAT)[10].

With respect to the frameworks of situated learning and distributed cognition, the ontological aspects of Marxist philosophy provide CHAT with an emphasis on the entire context of actions: it is possible to grasp the meaning of human actions only by considering the wider activity in which they are carried out.

Contrary to the primacy of either the external stimuli or the internal processes in behavioural and cognitivist frameworks, the cultural-historical psychologists shifted the focus to the relation between subject and object and the social and historical nature of this connection. The mechanism of these connections was elaborated by Vygotsky - who called it the general genetic (from "genesis") law of cultural development -: the formation of the intra-subjective plane of mental activity is shaped by the transition from the external inter-subjective plane, emerging in the social interactions, and mediated by cultural tools:

> "Any higher mental function was external (and) social before it was internal. It was once a social relationship between two people …. We can formulate the general law of cultural development in the following way: Any function in the child's cultural development appears twice or on two planes …. It appears first between people as an intermental category, and then within the child as an intramental category. This is equally true of voluntary attention, logical memory, the formation of concepts, and the development of will (1960a, pp. 197-198)."
>
> (Vygotsky quoted in Minick 1985, 83)

In other words, as Stetsenko puts it, the origination of human subjectivity in Vygotsky is seen as located in the processes of social exchange "instead of viewing it as a self-sufficient phenomenon detached from these exchanges and evolving on its own

[10] Such a term is a relatively new term and it is an amalgamation of the label used by Vygotsky cultural-historical psychology and activity theory used by Leontiev.

mentalist grounds." (2005, 74). These processes do not limit individuality, and indeed are those through which individuals become self-determining and thinking subjects (Bakhurst 1991, 79).

Although Vygotsky and Leontiev both argued the socio-cultural origin of psychological development, they had a different focus on it. The former centred his work on the mediation of language in social interactions, whereas the latter centred on the driving force of the objective activity. The different focus is the result of a shift by Leontiev, who probably aimed at escaping the accusation of idealism made to the cultural-historical psychology of Vygotsky by the Soviet regime. Whatever may be the reason for Leontiev's choice of putting objective activity at the centre of his theoretical elaboration, his contribution expanded the cultural-historical psychology of Vygotsky, pointing out that individual action always acquires its meaning when it is considered as part of an objective activity (or object-oriented activity). I will analyze the concept of objective activity in section 3.4.

So far, the main point to retain is that CHAT puts activity at the centre of its speculation, as the link between the subject and the object, a relation mediated by artefacts, both material and immaterial. The scholars who refer to this tradition of thought lay special emphasis on the interplay between mind and world through activity and its artefacts, in the service of goals (Cole 1985). That implies a dialectical reciprocal transformation between the self and the context, going beyond behaviourism (focusing on the environment), cognitivism (centred on mental psychological processes) and any ontological separation between persons and the environment (Beach 1999; Stetsenko 2005).

In the next two sections I explore this relationship between the mind and activity. This relationship is essential for understanding that the older workers' engagement in learning is mediated by the activities that they have been performing all along their lives.

3.3.2 Activity and mind: a single integral process of development

Although the differences between Vygotsky and Leontiev should not be overlooked, they share the stance on the cultural-historical origin of human development, as mentioned above. In this section I present in depth the relationship between participation in activity and the development of the mind as elaborated by Vygotsky and

Leontiev, and interpreted by some contemporary members of the large family of practice-based approaches mentioned at the opening of section 3.3.1.

Vygotsky's work is based on "... a close connection between human psychological development and the participation of the individual in various forms of social activity." (Minick 1985, 232). The key assumption of the Russian School is that the individual does not have any psychological characteristics in isolation from social activity and action (Minick 1985). The development of the *capacity* of higher mental functions such speech, thinking, logical memory, voluntary attention, desire, intention constantly occurs and is mediated by the evolving relations between the individual and the social environment:

"On Vygotsky's position, the child interaction with the environment, his or her gradual inauguration into social practices, is conceived not simply as the origin of particular beliefs, desires, hopes, intentions, and so on, but as a source of the child's very *capacity* to believe, to desire, and so on."

(Bakhurst 1991, 78, author's emphasis)

Leontiev widens the concept of social interaction used by Vygotsky. He inserts social interactions in the system of activity, and underlines the relationship between the human culture developed over history and human activities. The mastery of the products of historical development shapes not only the psychological functions, but also the characteristics of any activity, since the artefacts[11] embody essential features of the activity for which they have been developed:

"To take possession of the objects or phenomena that are the products of historical development, the relationship of the individual to them must realize the kind of activity that reproduces the essential features of the activity that is embodied or accumulated in them (Leont'ev, 1981f, p. 418)."

(Leontiev quoted in Minick 1985, 239)

However, the influence of historical products on shaping activities and psychological functions does not imply a determinist relation. Leontiev argues that the concept of adaptation to the environment is adequate to the principle governing the development of animals' activity, but inadequate in the case of human beings due to their ability to transform and create material and symbolic artefacts:

"In their activity, people do not simply accommodate themselves to nature. They transform nature in accordance with their developing needs and produce the means for the production of these objects. They create tools. Ultimately, they create the most complex machines, buildings, and clothes. Along with these

[11] While Vygotsky refers to cultural tools as symbolic signs, Leontiev also emphasizes objects as mediator in the relation between individuals and the social environment. I prefer to use the term "artefacts", to leave the use of the word "object" to signify the object of the activity. I will introduce the concept of activity object in section 3.4.2. I will come back to the concept of artifact as defined by Cole in section 3.3.3, note 14.

successes in the production of material goods, spiritual culture develops as well. Knowledge of the surrounding world and of man himself is enriched; science and art develop (Leont'ev, 1981f, p. 414)."

(quoted in Minick 1985, 234)

Thus, in CHAT individual development is based on and takes place through social interactions, mediated by artefacts developed throughout the evolution of the human species. In this position, individual and social developments are seen as mutually interwoven (Cole 1996).

As Cole and Wertsch (1997) argue, the cultural-historical perspective has several implications in view of how the mind works. First, the use of artefacts shapes and transforms higher mental functions. Secondly, mental processes are specific, not universal, since they derive from using artefacts which were developed (and are being developed) for specific contexts. A third implication identified by Cole and Wertsch is that mental development is part of a single bio-social-cultural process, in which the mind is only a component together with others – such as contexts, actions and artefacts.

A further implication is the emerging continuum between the mind and the world of activities, so that subjects and objects (artefacts) can be perceived as unified:

" ... mind is no longer to be located entirely inside the head; higher psychological functions are transactions that include the biological individual, the cultural mediational artifacts, and the culturally social and natural environments of which persons are a part."

(ibid., 3)

and

"... because what I call mind works through artifacts it cannot be unconditionally bounded by the head nor even by the body, but must be seen as distributed in the artifacts which are woven together and which weave together individual human actions in concert with and as a part of the permeable, changing, events of life."

(ibid., 3)

Therefore it does not make sense to analyse mind, action, context and artefacts as independent of each other.

The cultural-historical activity perspective on the development of the mind is being strengthened now by the recent advances in neuroscience, biology and the cognitive science of the embodied mind (Clark 1997; Daniels 2001, 47; Cardinali, Frassinetti et al. 2009), which confirm the interplay between mind, body and the environment.

The conceptualization of individual development as part of the development of individuals and of collective activities seen as a whole suggests a number of considerations on the issue of lifelong learning for older workers in a transforming

economic and social context. First, the process of learning is seen in CHAT as interwoven with the development of the context to which individuals belong. In this view, when the context develops, the individuals can also develop and vice versa, through the process of internalization/externalization of the artefacts and use/transformation of them in activities. Secondly, this single process of development raises the issue of a new conceptualization of subjectivity, able to acknowledge the interrelations between mind and world as well as the personal side in these ones.

I discuss further the process of internalization/externalization in the next section in which it emerges the issue of subjectivity, as highlighted by Stetsenko (2005).

3.3.3 Activity, artefacts, and mind: appropriation, internalization and externalization

As I pointed out in the previous section, in CHAT artefacts play a fundamental role in the development of individuals and for this reason enter in the process of formation of the capacity of the higher mental functions.

It remains to interpret how this occurs. Two main positions on the process occurring in the relation between artefacts and individuals are distinguishable in practice-based approaches. In the sociocultural literature[12], scholars such Cole, Wertsch and Rogoff put the emphasis on the mediated actions or activities of everyday life and focus on the process of appropriation of artefacts.

In CHAT, authors such as Stetsenko work with the concepts of internalization and externalization introduced by Vygotsky and extended by Leontiev, as I mention in the previous sections.

The differences between these two positions concern the emphasis on material versus symbolic mediational tools (artefacts) and the interpretation of the dualities of the whole made of individuals and environment.

3.3.4 Appropriation of artefacts

Wertsch argues that in mediated actions (e.g., pole vaulting or navigating a large naval vessel) there are no important processes from the external to the internal for the subjects involved:

[12] According to the interpretation of Daniels, the sociocultural field is the one in which the focus is on the social formation of the mind Daniels, H. (2008). Vygotsky and Research. London and New York, Routledge. page 51.

"This is not to say that there are not important internal dimensions or changes in internal dimensions in those carrying out these external processes, but it is to say that the metaphor of internalization is too strong in that it implies something that often does not happen."

(Wertsch 1998, 50)

Therefore he prefers to focus on the "knowing how" and "mastery" processes about skills necessary to carry out mediated actions[13]. Scholars of situated cognition, such Rogoff, adopt a similar concept, referring to "participatory appropriation" (Valsiner 1998, 112). The personal mental world is not denied, but the empirical work is concentrated on individual change through guided participation in activity (Valsiner 1998, 112). Cole's emphasis is on the mutual interweaving that relates the culture and the person, whose locus is in the concrete activities of everyday life (Valsiner 1998, 109). Borrowing from the microsociologist Birdwhistell, Cole puts forward the metaphor of rope, thread and weaving to depict such a connection, thus avoids talking about inside-outside (Cole 1993, 135). Cole agrees with Bateson's view on mind, that it does not make sense to try to separate the mind from the artefacts:

"Suppose I am a blind man, and I use a stick. I go tap, tap, tap. Where do I start? Is my mental system bounded at the handle of the stick? Is it bounded by my skin? Does it start halfway up the stick? Does it start at the tip of the stick?"

(Bateson 1972, 459, quoted in Cole 1996, 136)

As Cole puts it:

"In short, because what we call mind works through artefacts, it cannot be unconditionally bounded by the head or even by the body, but must be seen as distributed in the artefacts which are *woven together* and which weave together individual human actions in concert with and as a part of the permeable, changing, events of life."

(Cole 1996, 136-137)

When Cole deals with ontogenetic development, he adopts the term 'appropriation' for the child's process of copying adults' practices through participation in the activities arranged around her (ibid., 178-197). Hence, for Cole the appropriation process is triggered by participation, as in Rogoff's works.

Yet it seems that the concept of appropriation functions as a "black box" and its use does not explicate how the personal side of construction takes place (Valsiner 1998, 113). The authors who emphasise appropriation think that internalization is not the relevant process: as Wertsch reminds us, in Hutchins's analysis of the cooperative activity of navigating a large naval vessel into a harbour, cognition is distributed among

[13] Wertsch makes a distinction between "mastery" and "appropriation". The first term refers to the use of cultural tools with a feeling of conflict or resistance that can grow into a refusal of it. The second term is about making cultural tools one's own (Wertsch 1998, 53-56).

the individuals and in the shared set of complex tools, and internalization does not occur (Wertsch 1998, 51). These authors also tend to think that the consideration of the internal plane leads to dualism.

3.3.5 Internalization, externalization and the emerging subjectivity

According to Stetsenko, the concept of appropriation weakens the subjective pole which is one of the three at the base of human life and development: the material production of tools, the social exchanges and precisely human subjectivity (2005). She argues that Vygotsky's theoretical approach to the relation between individuals and cultural tools, extended by the work of Leontiev, seems to generate more opportunities to analyse the processes occurring in that relation.

As I mentioned previously (see 3.3.1), Vygotsky's general genetic law of cultural development shifts the focus from the internal individual origin of development to the relation between the subject and other individuals, taking place in activities mediated by artefacts. The emphasis is on symbolic tools such as language, to which Vygotsky gives a special status among other artefacts because of its fundamental role in social interactions. He also mentions other tools such as:

> "various systems for counting; mnemonic techniques; algebraic symbol systems; works of art; writing; schemes, diagrams, maps and mechanical drawings; all sorts of conventional signs (Vygotsky, 1981c, pp. 136-7)."
>
> (Daniels 2008, 7)

Cultural tools are first used in the relation with another person, and then they are transformed into an individual method of behaviour. The move from the intersubjective plane (between people) to the intrasubjective one (inside the person) is called "internalization" and is a transformative one. In Vygotsky's words:

> "Thus, the sign initially acts as a means of social connections in the behavior of the child, as an intermental function; subsequently it becomes a means of controlling his own behavior and he just transfers the social relation to a subject inward into his personality. The most important and basic of the genetic laws, to which the study of the higher mental functions leads us, states that every symbolic activity of the child was at one time a social form of cooperation and retains, along the whole path of development to its very highest points, the social method of functioning. The history of higher mental functions is disclosed here as the history of converting means of social behavior into means of individual-psychological organization."
>
> (Vygotskij 1999, 41)

Vygotsky regards internalization as a process of transformation of external social behaviour, mediated by cultural tools, so that it is reconstructed in the child's mind and brings about important structural changes in her psychological functions (Lawrence and

Valsiner 1993). The issue is how to analyze these changes while avoiding representing the relationship between individual and environment

"…in such a way that on one side we have the influence of self while on the other we have the influence of the environment. Though the problem is frequently represented in precisely this way, it is incorrect to represent the two as external forces acting on one another. In the attempt to study the unity, the two are initially torn apart. The attempt is then made to unite them (1984c, p.380)."

(Vygotsky quoted in Minick 1985, 108)

In the final phase of his career, Vygotsky identified the making of sense and meaning as the mechanism which transforms and individualizes the external social activity:

"Vygotsky argued that the fundamental inadequacy of most attempts to study the environment's influence on the child's development is the practice of describing the environment in terms of "absolute indices", that is, of conceptualizing the environment as it exists in isolation from the child rather than studying it in terms of "what it means for the child", in terms of "the child's relationship to the various aspects of this environment" (1984c, p.381)"

(Minick 1985, 109)

As reported in the previous section, Leontiev extends the Vygotskian idea of internalization to the material forms of the collective productive activities. He stresses that artefacts embody the characteristics of the activities for which they were produced. Taking possession and mastering tools imply to reproduce the features of the original activity for which the tools were created and to develop the psychological characteristics necessary to use and transform those tools and carry out that activity. Leontiev points out that individuals transform the world to respond to their developing needs and create new tools and new activities.

Yet, Stetsenko notices that Vygotsky's and Leontiev's works concentrate more on the internalization process and less on the externalization one.

In the Leontiev's work, in which the transformative nature of the human development is recognized, the use of the idea of interdependence is limited. For instance, in the case of internalization/externalization:

"… internalization became more explored and elaborated upon than that of externalization of psychological processes in products and aspects of the world developed each time anew in even seemingly mundane activities of individuals."

(Stetsenko 2005, 77)

According to Stetsenko internalization and externalization are interdependent processes, in the sense that one cannot exist without the other, and both find their origin in the activities and social interactions. In particular she argues that human subjectivity is the necessary moment in these processes:

"These processes [internalization and externalization] are inextricably linked in that they exist together, both being implicated in realizing transitions among various planes of activity within their ever-expanding flow. Both internalization and externalization appear as mechanisms that are equally and simultaneously necessary for life processes to be carried out, with human subjectivity (on the internalized pole of activity) being a necessary, though transitory, moment in these processes."

(Stetsenko 2005, 84)

In other words, she embraces both contributions from Vygotsky and Leontiev about the relevance of collective exchanges and material production in the formation of subjectivity, but she gives to this latter a moment in the system of interactions of societal and material activities. She wants to acknowledge the individual mechanisms which regulate the material production and the societal exchanges.:

"Namely, [in CHAT] human subjectivity is conceptualized as originating from, and subordinated to, the collective exchanges [in Vygotsky] and material production [in Leontiev]. This formulation is lacking one important idea that was implicitly present in Marx's works - the idea that in human history there exists not only an interdependence and co-evolution of the material production on the one hand, and the societal (i.e., collective, inter-subjective) forms of life, on the other. One other aspect of human life also co-evolves together with these two processes. Namely, the subjective mechanisms allowing for individual participation in collective processes of material production are also implicated in the functioning of what essentially is a unified three-fold system of interactions."

(Stetsenko 2005, 74)

She wants to spell out that all these three processes at the foundation of human life – material production, societal exchanges and subjective mechanisms - co-evolve together "interpenetrating and influencing each other, never becoming completely detached or independent from each other " (ibid., 74).

Stetsenko's emphasis on human subjectivity gives back to CHAT the power of a dialectical analysis, overcoming the dualism not completely resolved in the work of Vygotsky and Leontiev. I will come back to Stetsenko's work on human subjectivity later on (see 3.5).

The approach to the relation between mind and world which applies the concepts of internalization/externalization allows thorough examination of the definition of learning. Learning is a cultural and social process in the sense that the individual internalizes the symbolic aspects of social and historical artefacts[14] in intersubjective relations and in connection with collective material activity. However, what are internalized return to

[14] As acknowledged at the outset of this section, the term "artefacts" corresponds to the appropriation approach, while "cultural tools" refers to the internalization/externalization perspective. Even if I adopt the latter perspective for the purpose of this research, I prefer to use the term "artefacts" with the conceptual meaning put forward by Michael Cole. Cole, on the basis of the Ilyenkov's work, points out that artefacts always include an ideal aspect, even when they have a physical form. This stems from their mediational use in social activity. Cfr. Cole, M. (1996). Cultural Psychology. A once and future discipline. Cambridge, Massachusettes, and London, England, The Belknap Press of Harvard University Press.

and act back on the world through the developed mental capacity, already changed by the subjectivity which attributes meanings and senses. I deal with meaning and sense in the next section.

To theoretically inform the issue of the relation between collective activity and individual development I now present the activity theory of Leontiev. The contributions from this discussion will also illuminate further the issue of the space of subjectivity in the context of collective activity, namely with respect to the issue of motive for learning and how this is related to needs of learning. In this discussion the relevance of the social meaning and personal sense of the object of the activity will begin to emerge.

3.4 Object-oriented activity: collective motive and individuals' goals

In this section I want to highlight the relations among the elements which form the flow of an activity. As pointed out by Leontiev, what happens externally in an activity is mediated by the psychic reflection which is part and takes part in the transformations occurring in the activity. As I interpret it, this means that there is only one activity, which has internal and external aspects. According to Leontiev, the activity has a structure made of elements. Analysing the relations among these elements of the activity allows the explication of the volitive (i.e. motivational) aspects in the activity (Leontiev 1978, 60-95). Actually, the focus of Leontiev's work is the development of consciousness to explain the engagement of the subjects. He adopts the activity (objective activity) as the explanatory principle of the internal processes (internalization[15]) which give form to consciousness and its motivational dimension. I explain it in what follows.

The construct of "objective activity" was developed by Leontiev to expand Vygotsky's focus on the relation between mind and mediated activity. Vygotsky's conception of activity refers to face-to-face social interaction such as activities involving the educational relation between child and adult. He is interested in this cooperative activity mediated by signs to explain the development of mind. Vygotsky achieves his goal of developing a theoretical framework to overcome the conceptual isolation of mind and behaviour in mentalist and behaviourist psychologies. He obtains this result by introducing the study of practical activity in the field of psychology and analysing

[15] Leontiev (or the translator) uses the term "interiorization". I adopt "internalization" in coherence with the terminology used in the previous section.

psychological processes as developing in equipped human activity and social interrelationships (Leontiev 1978, 59-60; Minick 1987; Stetsenko and Arievitch 2004). Vygotsky focuses on how the psychological processes rise from practical activity in social interaction, but he does not deal with what motivates individuals to interact and mediate their actions. Leontiev takes the baton from Vygotsky at this point (Leontiev 1978, 60) and puts forwards the theory of activity to explicate the origin of consciousness in the objective activity.

3.4.1 Consciousness: the relation between social meanings and personal senses of objects/motives

According to Leontiev, consciousness is the subjective reflection of objective reality, that is, of the subject's own activities and others' activities (Leontiev 1978, 59). But what is more important is that consciousness has the similar structure of objective activity, a feature which allows mutual transitions between internal and external activity, that is, a continuous internalization of external activity and externalization of internal activity:

> "… we must say at once that the mutual transitions about which we are speaking form a most important movement of objective human activity in its historical and ontogenetic development. These transitions are possible because external and internal activity have a similar general structure. The disclosure of the common features of their structure seems to me to be one of the more important discoveries of contemporary psychological science. Thus activity that is internal in its form, originating from external practical activity, is not separated from it and does not stand above it but continues to preserve an essential, twofold connection with it."
>
> (Leontiev 1978, 61-62)

These transitions occur through language, historical product of material production, which carries not only information, but also social meanings (ideas) embedded in the material production (Leontiev 1978, 60). Here the discourse can reconnect to what Vygotsky elaborated later in his career, mentioned above in section 3.3.5, about the individualized transformation of the external aspect of activity throughout the development of meanings related to the relevance of the latter for the life of the child. Referring to Bakhurst, who draws on the ideas of the Russian philosopher Ilyenkov, the construction of the meanings and other ideal aspects (reasons, logic, ideas, concepts) in the material transformation of nature by the social human activity is the key point which

differentiates CHAT[16] from the Cartesian and Kantian perspectives, to which I refer at the beginning of this chapter (Bakhurst 1997).

Leontiev gives a fundamental contribution in distinguishing between social meanings and personal senses. Meanings appear as external to the subject; they are social in their origin. Then "meanings necessarily enter into internal relations that connect them with other forms of individual consciousness" and assume new qualities: "meanings are individualized and subjectivized" without losing "their social-historical nature, their objectivity.":

"The most difficult point here is that meanings lead a double life. They are produced by society and have their history in the development of language, in the development of forms of social consciousness; meanings express the movement of human knowledge and its cognitive means as well as an ideological representation of society - religious, philosophical, political. In this, their objective existence, they are subordinated to social-historical laws and also to the internal logic of their development. (...) In this their second life, meanings are individualized and subjectivized but only in the sense that indirectly their movement in the system of relations of society is no longer contained in them; they enter into another system of relations, into another movement. But this is what is remarkable: They do not in any way lose their social-historical nature, their objectivity. "

(Leontiev 1978, 89)

When social meanings acquire partiality (subjective dimension), they are called by Leontiev as personal senses. The structure of the consciousness is generated by the relation between social meaning and personal sense of the object of the activity (Leontiev 1978, 230). In other words, the subject internalizes social meanings but gives to them personal senses according to their relevance to her personal circumstances of life. The distance between social meanings and personal senses can bring about estrangement and alienation.

At this point Leontiev adopts a Marxist vision and believes that in the primitive communal system social meanings and personal senses could coincide because the individuals and the group tended to have identical relations with the means of production and the goods. The introduction of the social division of labour - between mental and practical activities - and the private property relations would have brought about an estrangement between senses and meanings (Leontiev 1978, 245). I will come back to the relation between social meaning and personal sense in section 5.5 where I present my view about this in the context of the industrial activities.

[16] Bakhurst refers to the Russian school of thought as "Soviet communitarian tradition", see Bakhurst, D. (1997). Activity, consciousness, and communication. Mind, Culture and Activity. Seminal papers from the Laboratory of Comparative Human Cognition. M. Cole, Y. Engeström and O. Vasquez. Cambridge, Cambridge University Press**:** 147-163. p. 148.

I now turn to the illustration of the structure of objective activity, for – according to Leontiev - external and internal activities have a similar general structure, as in the case of consciousness discussed in this section.

3.4.2 The three-level structure: the object

Leontiev's conceptualization of activity as a three-level structure discloses internal relations, illuminating the links between the individual and the collective levels (1978, 67). In his view, activity is collective and object-driven. The object of the activity has a two-fold dimension: first it is independent from the subjective image, but then it becomes a subjective product "that fixes, stabilizes, and carries in itself its objective content." (Leontiev 1978, 43). The object of an activity is defined as its true motive, which is to answer to one need or another[17]. Needs cannot direct an activity: for instance hunger cannot direct the hunt, it is only capable of activation and excitation. As Leontiev explains:

> "Only as a result of its "meeting" with an object that answers it does it first become capable of directing and regulating activity. The meeting of need with object is an extraordinary act."
>
> (Leontiev 1978, 54)

Leontiev adopts a Marxist concept of need, which is seen as generated by the development of production. The link between object and need is a human characteristic, for "in human society needed objects are produced and owing to this the needs themselves are produced." (ibid., 54). Therefore in an advanced society a need cannot be purely biological, for its content is an object historically and culturally defined (ibid., 116-119). It follows that the activity does not arise from a biological need, but from a need produced by another activity: the cycle is thus activity>need>activity and not need>activity>need (ibid., 117). This implies that the analysis of the volitive aspects of activity has to focus on the object, and not on the need or desire or wishes (ibid., 119), for "the object of an activity is its true motive" (ibid., 62).

Yet such an identification of the object with the motive is problematic when the activity has several motives (Kaptelinin 2005). The issue is whether multiple needs and motives impel different activities with different objects or whether a unique object of the activity

[17] For a criticism of the identification of motive and object see Kaptelinin, V. (2005). "The Object of Activity: Making Sense of the Sense-Maker." Mind, Culture and Activity **12**(1): 4-18. However the view of motive as object prevents from shifting towards the concept of motivation which is an internally driven process, see Stetsenko, A. (2005). "Activity as Object-Related: Resolving the Dichotomy of Individual and Collective Planes of Activity." Mind, Culture and Activity **12**(1): 70-88.

emerges and is realized in such a way that all the needs/motives are satisfied. Kaptelinin puts forwards a solution which separates the motives from the object, and sees the latter as cooperatively defined by the different motives. Kaptelinin has in mind individual activities, but it is possible to extend this interpretation of the relation between object and motives to collective activities (Hyysalo 2005; Miettinen 2005; Nardi 2005). Nardi's study of a pharmaceutical company argues that in collaborative activities multiple motives are linked "through relations of conflict, power, resistance, and acquiescence" and their interplay shapes the object itself (2005, 40-41). Hyysalo analyzed the design work related to an innovative electronic product and found that the dominant collective professional motive for using and extending the engineering expertise was integrated with other personal sense of motives[18] in a shared object. Moreover the dominant motive transformed itself as a consequence of the development of the innovative product (2005, 31-34).

In this research I prefer to take a more Leontievian position and refer to the object/motive of the activity in the present discussion. I will come back to this issue in the empirical analysis and in the final chapter.

3.4.3 The three-level structure: the actions and the operations

To turn back now to the presentation of the three-level structure of activity elaborated by Leontiev, the middle level in activity is actions to achieve the object of the activity. Actions are driven by goals that do not coincide with the object/motive of the activity (ibid., 63). The motive arouses actions, but the actions are directed toward purposes. The conditions and the tools of the action generate the methods for accomplishing the action, which are at the bottom level of the activity. These methods are also indicated as automatic operations.

The use of tools is different in actions and in operations. In the latter, the tools are used in an automatic way. According to Leontiev, every operation was once an action, which became an operation when it was included in another action, with the effect of its subsequent "technization". He gives an example to explain this:

[18] In Leontiev's framework there is no "personal motive", but a personal sense of motive, as noted by Hyysalo, S. (2005). "Objects and Motives in a Product Design Process." Mind, Culture and Activity **12**(1): 19-36., note 6. Hyysalo uses the term "personal motive" in his article with the meaning of personal sense of motive.

> "A simpler illustration of this process may be the formation of an operation, the performance of which, for example, requires driving a car. Initially every operation, such as shifting gears, is formed as an action subordinated specifically to this goal and has its own conscious "orientational basis" (P. Ya. Gal'perin). Subsequently this action is included in another action, which has a complex operational composition in the action, for example, changing the speed of the car. Now shifting gears becomes one of the methods of attaining the goal, the operation that effects the change in speed, and shifting gears now ceases to be accomplished as a specific goal-oriented process: Its goal is not isolated. For the consciousness of the driver, shifting gears in normal circumstances is as if it did not exist. He does something else: He moves the car from a place, climbs steep grades, drives the car fast, stops at a given place, etc. Actually this operation may, as is known, be removed entirely from the activity of the driver and *be carried out automatically*. Generally, the fate of the operation sooner or later becomes the function of the machine.
>
> Nonetheless, an operation does not in any way constitute any kind of "separateness," in relation to action, just as is the case with action in relation to activity. Even when an operation is carried out by a machine, it still realizes the action of the subject. In a man who solves a problem with a calculator, the action is not interrupted at this extracerebral link; it finds in it its realization just as it does in its other links. Only a "crazy" machine that has escaped from man's domination can carry out operations that do not realize any kind of goal- directed action of the subject."
>
> (Leontiev 1978, 66; my emphasis)

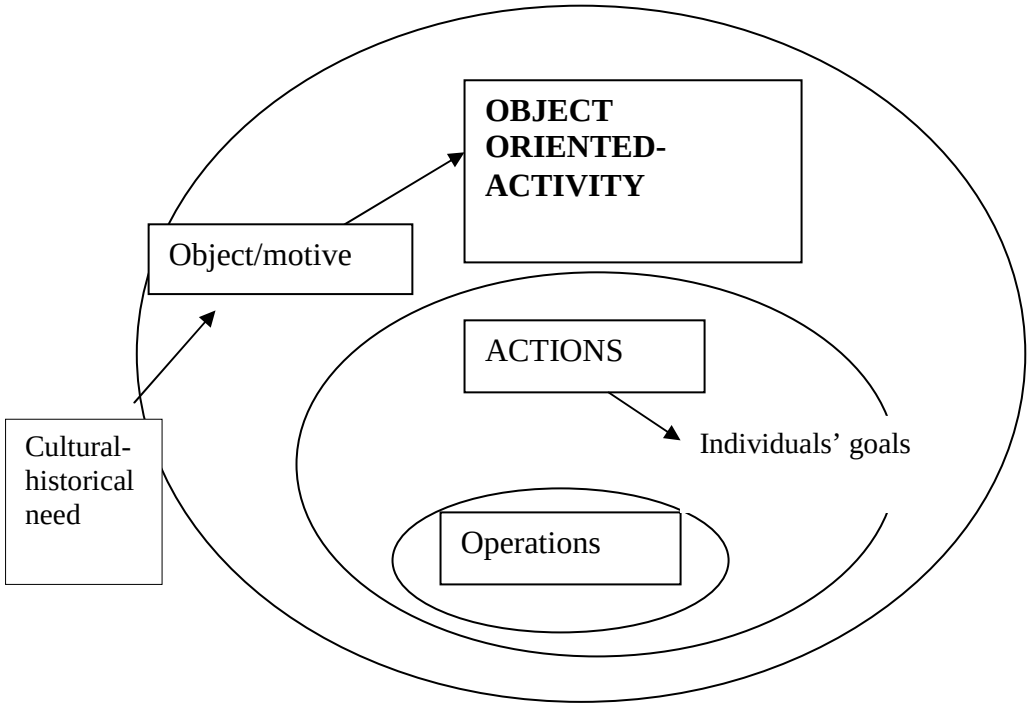
Connecting this discussion with the previous one on the relationship between individuals and artefacts, the internalization of every artefact is first an action, in that the subject has to form a goal in order to take the action of appropriating (internalizing) a new tool, an action which is in relation with an activity, its motive and its object.

In sum, Leontiev elaborates the concept of activity as composed of different elements such as actions and operations, where motive impels the activity and the actions, but these are directed by goals and carried out through operations. In his theoretical framework, the idea of units of activity serves the scope of disclosing the internal systemic connections. However, these internal relations are not fixed, since transformations occur as activity develops:

> "… activity represents a process that is characterized by continuously proceeding transformations. Activity may lose the motive that elicited it, whereupon it is converted into an action realizing perhaps an entirely different relation to the world, a different activity; conversely, an action may turn into an independent stimulating force and may become a separate activity; finally, an action may be transformed into a means of achieving a goal, into an operation capable of realizing various actions."
>
> (Leontiev 1978, 67)

To illustrate the three levels of activity, Leontiev's classical example is always helpful: the beater, taking part in a primeval collective hunt, carries out actions and operations with the goal of frightening a herd of animals and pushing them towards the other hunters, but the aim of his actions does not coincide with the object/motive of the activity, which is providing food (Leontiev 1981).

Figure 3.1 - Levels and elements of activity



In other words, the motive for activity is dissociated from the goals of actions. This dissociation becomes even more profound in complex societies, as illustrated in this example:

"Let us suppose that the activity of man is aroused by food; this also constitutes its motive. For satisfying the need for food, however, he must carry out actions that are not aimed directly at getting food. For example, the purpose of a given individual may be preparing equipment for fishing; regardless of whether he himself will use the equipment he has prepared in the future or give it to others and obtain part of the total catch, that which aroused his activity and that to which his actions were directed are not identical …"

(Leontiev 1978, 63)

As it appears from these examples, behind this idea of three levels of activity there is the division of work to achieve a collective goal, which posits the question of what then unifies the actions and makes them a human activity. The element that makes a chain of actions an activity is the motive behind the activity, which is also its object, able to relieve or fulfil the need (Hyysalo 2005, 21). Leontiev draws our attention to the fact that the motive for an activity rarely coincides with the subjects' goals. In his view this is specific to human activity; animals' activity is always directed only by biological needs, and there is no action that could not be directly linked to that need (Leontiev

1981, 212). Human beings act towards goals that do not coincide with the activity's motive, since the result of their actions is linked to the final outcome of the activity by the social relations with other members of the group, by virtue of which they get part of the product of their joint labour activity (Leontiev 1981). Moreover, the perception of goals does not occur automatically, but it is the result of "… a relatively long process of approbation of the goals by action and their objective filling …" (Leontiev quoted by Engeström and Miettinen 1999, 6) and they can be fully explicated only retrospectively.

In sum, the motive unifies the chain of actions, making them a human activity. Yet, this view of the relation between the motive and the goals can appear too schematic. Stetsenko elaborates a contribution that helps in retrieving a more complex dynamic.

3.4.4 The ever-shifting balances between the activity elements

Stetsenko's starting point is that Leontiev's work on the relationship between motive and goals presents the same imbalance about internalization and externalization noted above (3.3.5). In the case of the relation between motive and goals, the motive is considered to be more significant than the goals and personal senses (Stetsenko 2005, 77-78). As Stetsenko argues, this neglect of human subjectivity can be explained by Leontiev's aims to fight against the dominant individualistic view of his time, and by the communitarian ideology prevailing in the Soviet Union when he developed his theoretical framework (ibid., 80).

Stetsenko's re-examination of the principles of CHAT to reintroduce the pole of human subjectivity in the processes of material production and social relations highlights the point that the motive of the activity and the goals of actions are linked to each other and evolve together:

> "Specifically, the view proposed here implies that motives and goals do not exist separately from each other. Instead, they appear as existing (again, in historically and ontogenetically mature forms of practice) only together, as co-constitutive and co-evolving moments in the ever-shifting balances and mutual penetrations - all within the ongoing processes of activity. Not only are the socialized (but never merely social) motives of communal practices are powerful molders of the individualized (but never merely individual) goals, as A. N. Leontiev (1983) suggested, but also goals are powerful molders of motives (in more bottom-up processes). Goals appear, then, as dynamic and transformable, potentially feeding not only from, but also into, motives, in the ever-shifting balance of mutual transitions and interpenetrations within the system of "motive-objects-goals" that co-evolve as whole (…). Note that motives and goals appear (again in mature forms of activity) as juxtaposed - sometimes equipotent, sometimes with one dominating the other, and as extending simultaneously in horizontal and vertical dimensions, like zigzags perhaps (actually, metaphors of space … help[s] us to see it as a nonlinear and polydirectional process)."
>
> (Stetsenko 2005, 85)

The co-evolution and mutual penetration between motive and goals seem to contradict the dissociation highlighted by Leontiev. In my interpretation, the two stances – dissociation or co-evolution between motive and goals - can coexist, for the motives and the goals are in fact separated by the division of labour in the activity, but through human subjectivity motive and goals interact and transform each other, and the activity and its object, in an ongoing process pointed out by Leontiev too (see above quotation). What is missing in Stetsenko's account is a full acknowledgement that this tension between collective motives and personal goals is complex when individuals are active in a collective activity in which their relations with the object of activity can be indirect. Indeed, this is the focus of Leontiev's work on how human consciousness has been affected by the introduction of division of labour and relations of private property which changes the position of subject with respect to the object of the activity (Leontiev 1978, 244-255). Leontiev's emphasis on the latter is interesting and relevant to a discourse on motive for learning. I will come back to this issue in section 3.5 and 5.5.

It remains to point out that even if Leontiev's aim was to analyze the individual's development in a collective activity - and not the performance of the whole activity as the product of the division of labour (Kaptelinin 2005) -, nevertheless his activity theory has the potential to be expanded to analyze activities carried out by a group of people. This extension has been developed by Engeström whose contribution is discussed in section 5.2.

3.5 The subjective pole of activity

The previous sections aimed at interpreting the relationship between individuals and contexts (activities) as a dynamic interplay, forming a single process of development. In this vision, learning is a cultural and collective process of mastering, internalizing and externalizing artefacts through carrying out activities. As elaborated by Leontiev, activities are the foundation of the development, since it is through activities that the world is transformed and with it the individuals. It remains to explore the issue of the self and its role in the development of the activity.

In the previous discussion, referring to Stetsenko's work, the self appears as a moment in the continuous transition of internalization and externalization (see 3.3.5). Namely this occurs in the formation of the internal plane through internalization of artefacts and

in the processes of transformation and personalization of the external activity, producing personal senses, and then as the externalization and transformation of the activity.

As I have reported (see section 3.3.5), Stetsenko argues that both Vygotsky and Leontiev subordinate human subjectivity to human exchanges and material production respectively.

Although Stetsenko is critical towards the place of subjectivity in the framework of Leontiev, she considers his conceptualization of subjectivity – in a work with her colleague Arievitch - as preferable to other approaches developed in socio-cultural and anthropological studies for the latter do not account adequately for the ontological foundation of the self:

> "These approaches appear to be well positioned to avoid the extremes of either dissolving the self in the workings of social forces or reducing it to purely mental phenomena of the individual mind that are only extraneously influenced by social factors. However, the principal ontological grounding for the self in these approaches is seen as constituted by the relatedness, dialogism and responsiveness of human life as its ultimate and often exhaustive characteristic."
>
> (Stetsenko and Arievitch 2004, 480)

Conversely, the self conceptualized by Leontiev has its ontological grounding in the involvement in the social processes of material production. I explain this in what follows.

As highlighted earlier, actions are aroused by motives, which give them orientation and horizons. In Leontiev's theoretical framework, motives and the personality [19] are connected. Indeed, the hierarchy of motives coincides with the personality who emerges in giving order and priority to the objective activities as long as they increase in number through the individuals' ontological development. Keeping in mind the relation between motive and object outlined above (see 3.4), the connection between motives and self is realized through a twofold transition: first from the objective world which provides the

[19] Stetsenko argues that " ... the "self" as a translation of A. N. Leontiev's term lichnost is more appropriate than "personality" because of much closer link of A. N. Leontiev's concerns to today's discourse on the self than on self in the tradition of individual differences." Stetsenko, A. Ibid."Activity as Object-Related: Resolving the Dichotomy of Individual and Collective Planes of Activity." 70-88. footnote 8. However I note that in Leont'ev, A. N. (1978). Activity, Consciousness, and Personality. Englewood Cliffs, N.J., Prentice-Hall. the author reports the debate on different approaches to personality and presents his historical-objective perspective of the same concept, without introducing a different term (unless he has actually changed the term, but the translator has not). In Stetsenko, A. and I. M. Arievitch (2004). "The Self in Cultural-Historical Activity Theory: Reclaiming the Unity of Social and Individual Dimensions of Human Development." Theory and Psychology **14**(4): 475-503. the authors mention that personality is a CHAT term (p. 484). I tend to use the word self when I report from Stetsenko's and Arievitch's works and personality when I refer to Leontiev's. Both terms become interchangeable and refer to the subjective aspect of activity.

object to the activity, then from the activity to the subject. This latter transition is represented by the formation of the image of the object in the reflexive activity of the subject. In Leontiev's words:

"An object of activity appears in two forms: first, in its independent existence, in which it subordinates and transforms the activity of the subject and, second, as the image of an object, as a product of reflection of the object's properties, which takes place as a result of the activity of the subject, and cannot be realized in any other way. (A.N. Leontiev, 1983, p. 170)"

(Stetsenko 2005, 76)

As pointed out by Stetsenko and Arievitch, this conceptualization of the self "reveals the inherent dynamism of human subjectivity as immersed in the flow of transitions between individuals and the world." (2004, 485). The engagement in the activities[20], initially influenced by the inborn features of the child, and by social relations and affordances, gradually becomes a complex entity with its own logic and internal dynamics (ibid., 485-6).

Leontiev's theory of the personality does not provide methodological tools to analyse the individuals' hierarchy of motives. Yet, as illustrated by Chaiklin, but also suggested by Leontiev (1978, 124), it is possible to analyze the personal hierarchy of motives by examining the dynamic of individual activity and actions. Namely, motives are psychically reflected in emotions and the personal sense given to actions (Leontiev 1978, 122).

This structure of the self emerges "...by how a person handles specific conflicts between motives that comprise the hierarchy." (Chaiklin 2001, 243). Chaiklin provides the following example to clarify how individuals' choices can be interpreted as indications of the structure of the self:

"... many upper-secondary school pupils have a motive to get high grades in order to enter a chosen postsecondary education. Another motive is social relationships with friends. Conflicts arise when friends, for example, insist on the pupil coming to a party when the pupil has to take an important examination the next day. The pupil's self is reflected in how these (and other) conflicts are handled over

[20] Stetsenko and Arievitch say that the self is the very engagement with the social world. The self "… is constituted by the ways in which we 'do' and perform, rather than have, a self, and, moreover, by what we do about the world (thus transcending ourselves), as we engage in activities that contribute to changing something in and about the world." Stetsenko, A. and I. M. Arievitch (2004). "The Self in Cultural-Historical Activity Theory: Reclaiming the Unity of Social and Individual Dimensions of Human Development." Theory and Psychology **14**(4): 475-503., 494. Thus engagement is linked to subjectivity and contribution to construct the social world. Although the authors seem to link engagement with transformation of the social world in this quoted sentence, their discussion clearly implies a more neutral reference to the contribution to the social world, a contribution that could be "to stifle changes in society" (ibid., 495).

time."

(Chaiklin 2001, 243)

The hierarchy of motives corresponds "... to actual relationships and dependencies that exist between the concrete actions and activities that are the individual's life." (Minick 1985, 189). Motives come into conflict in carrying out a given action, in formulating goals, or in selecting between alternative actions. Selecting between alternative actions reflects the relative significance of motives and their interrelationships in the life of the subject (Minick 1985, 184).

Referring to the example reported above:

"... some pupils will choose to attend the party, valuing their social relationships more than the possible consequences for their further education; others will choose to remain at home. The structure of self reflects the pupil's personal sense about these choices. That is, some pupils will attend the party with pleasure, while others will attend with guilty or discomfort. For the pupils remaining at home, some will be content, others despondent. These personal senses form the system that is denoted as self."

(Chaiklin 2001, 244)

This example also highlights what Stetsenko and Arievitch stress, that the self serves the purposes of orienting the individual in the system of activities and in social relations.

Leontiev discusses the role of knowledge and perspectives in the formation of motives. On their own, knowledge and training do not affect the self, but they can fulfil an important role in motive formation, as they enable individuals to know that a certain motive is possible (Minick 1985, 128).

Past experiences are not dormant in forming the personality[21]. They are continuously used in the individual relations and actions and can lose their previous sense, acquiring a new one or even being transformed into conditions for actions:

"One thing in the past dies, loses its sense, and is converted into a simple condition and means of his activity: the developed aptitudes, skills, and stereotypes of behavior; everything else appears to the subject in a completely new light and acquires a new meaning, which he had not perceived before; finally, something from the past may be actively rejected by the subject and psychologically ceases to exist for him although it remains in the compendium of his memory. These changes take place gradually, but they may be concentrated and may comprise moral breaks. The resulting reevaluation of the past that is established in life leads to man's casting off from himself the burden of his biography. Does this not in itself indicate that the contributions of past experience to self were dependent on self itself and became its function? "

(Leontiev 1978, 120)

In Leontiev's view, the personality is characterized by unlimited perspectives of development (Leontiev 1978, 137). Changes in the personality are produced by the

[21] I discuss the concept of past experiences in the conclusive remarks of Chapter Four.

individual's actions, which can become richer, outgrowing the activity system that they belong to (ibid., 128). In this way they enter into contradiction with the motives that created them and give birth to new motives and activities:

> "As a result there occurs a displacement of motives to goals, a change in their hierarchy, and the engendering of new motives, new kinds of activity; former goals are psychologically discredited and the actions that responded to them either completely cease to exist or are converted into impersonal operations."
>
> (Leontiev 1978, 128)

Sometimes changes in the personality are produced by external actions such as "… breaks of formers contracts, a change of profession, a practical entering into new circumstances." (Leontiev 1978, 132). As I see it, one should not take for granted the "trigger's effect" of such events, for their meaning depends on the priority which they represent in the hierarchy of motives.

As I can interpret Leontiev's theory of personality, the hierarchy of motives is the result of personal sense developed in the ever-widening circle of activities in which persons live. Such a hierarchy of motives contributes to the formation of goals and actions in the activities. Sometimes goals can take forms which outgrow the activity to which they belong, and give birth to new motives and activities. This process can transform the hierarchy of motives and the position of the subject in the activities. Therefore there is a continuous movement between the self and the system of relations in which the subject lives.

Stetsenko and Arievitch stress that, according to Marxist theory, human subjectivity is one of the three poles of the system of connections with the social relations and the collective processes of material production (see also section 3.3.5). Human subjectivity has a practical relevance in changing and creating artefacts that exist for other people and in regulating and orientating the individuals in the collective practices (Stetsenko and Arievitch 2004, 490-491).

In sum, self appears as moulded by the world and at the same time shaping the world through the activities, mediated by artefacts. The self co-evolves with the collective social practices and social exchanges. The hierarchy of motives constitutes the self and has a role of orientation in the social practices.

The second element to retain is that goals can outgrow the motive of the activity, creating new activities and changing the previous hierarchical order. This can happen

when an experience of learning acquires particular significance, so that the individual decides to give higher priority to learning activities than before, or to create other activities.

On the basis of the above discussion, we can understand older workers' selves as the product of an ontogenetic cultural development which has occurred through participating in different activities and social practices, building their own hierarchy of motives and personal senses. Because learning and work in the industrial sector are at the centre of this research, it is then relevant to discuss strategies of production important in the last decades - such as mass production - which played a significant role in developing workplace cultures in which older workers have participated. I will come back to this point in Chapter Five.

3.6 Concluding remarks

In this chapter I frame my discourse against a computational view of learning and argue that cultural historical activity theory (CHAT) provides the research with conceptual tools adapted to clarifying development as a whole process of mind and world. The issue of older workers and learning is about the relation between individual development and the transformation of work, that is, mind and world. In the computational view, the mind processes blocks of standardized knowledge according to rules that do not encompass feedbacks, the variety of contexts, the meanings people attach to practices and tools, the interrelations between what one has developed through experiences and her personal sense of motives. Therefore this approach is not appropriate to analyse the relation between mind and world as generating a single process of development. Yet the computational perspective emerges in the European Union's documents on lifelong learning, where the knowledge to be transferred is invariant to contexts and presented as qualified to equip people to flexibly adapt to the challenges of the changing world.

For CHAT, individual and the world developments are intimately related and co-evolve through the processes of internalization/externalization in the collective dynamics of material production and in mediated object-oriented activities. Learning is a cultural and collective process in the sense that the individual internalizes cultural and historical artefacts in intersubjective relations and in connection with collective object-oriented

activity. This occurs through mediated actions and subjectivity which attributes meanings and senses to what is internalized and gives priority, thus individualizing it. What is internalized returns to and acts back on the world through the developed mental functions, the hierarchy of motives, the knowledge and the skills.

With this approach in mind, the issue for lifelong learning is no longer how to equip people with skills through educational activities, as it is typically addressed in functionalist and emancipatory narratives (Saunders 2006), but it shifts from the concept of education to the concern of learning. The focus becomes what activities people are involved in and their degree of engagement in these. The activities in which people are involved play an important role in the development of their learning, providing opportunities to learn in terms of needs, motives, and objects of learning. At the same time the individuals' subjectivity can take those opportunities, refuse them, and desire other ones.

In this discourse, motive and engagement are pivotal concepts to explain the participation in learning activities. The activity theory of Leontiev provides the framework to explain the origin of motive as the impulse to actions that emerge when a need meets its object. Motives are not an individual attribute, but they take form in activities. The involvement in different activities gives origin to a personal hierarchy of motives, which reflects the actual relationship between the activities in the individuals' lives. The priority of the motives in the hierarchy is given by the subject. Yet, again, the order emerges from the collective processes in which the subject is involved: it continuously changes in the continuous flow of the social interactions, internalization and externalization of artefacts, and in the co-evolution of all these dynamics, and in the changes in the activities.

On the basis of the theory of activity, it is not possible to take for granted that the European Union's motive to build the knowledge-based economy can be fully shared by older workers. Older workers are active subjects acting on the object of the industrial activity in the enterprises where they are employed. Yet their engagement in the workplace depends on their position in the activity and the personal senses of the object of activity they have been developing. I will return to the issue of activities of production, their most recent changes and workers' involvement in labour process in Chapter Five.

Vygotsky's emphasis on the internalization of cultural tools is of particular significance for the issue of older workers' learning. Since age can be a proxy of amount of experience, practical and theoretical knowledge[22] accumulated, older workers may have internalized a richer amount of work-related artefacts than younger ones in the same workplace. From their accumulated technological know-how, older workers can judge the new artefacts put forward by managers, engineers, and trainers with whom they are in relations of power. Yet, according to Leontiev's theory of personality, older workers can be differentiated by the personal senses they have developed and given to the working situations encountered in their lives. The accumulated experiences, even in the same workplaces, could mediate older workers' relations with their work in different ways due to their personal senses. I will come back to this issue in the next chapter where I first discuss the model of the cognitive decline and then the educational gerontology on older workers and learning.

[22] Practical knowledge develops through social practices and manifests its self in practice. Its transfer to different situations and contexts needs the support of conceptual understanding. Conceptual understanding refers to theoretical knowledge which has the distinctive characteristic of conceiving alternatives and making connections (Young, M. (2004). Conceptualizing vocational knowledge. Workplace learning in context. H. Rainbird, A. Fuller and A. Munro. London, Routledge**:** 185-200.). In the Vygotskian perspective, practice and theory are outcome of different, but connected activities (Guile, D. (2006). "Learning across contexts." Educational Philosophy and Theory **38**(3): 251-268.). Leontiev points out that the theoretical and practical activities are inseparable, because historically thoughts are linked to practice, and language and vocal acts have been developed to plan and organize practical activities (Leontiev, A. N. (1978). Activity, Consciousness, and Personality. Englewood Cliffs, N.J., Prentice-Hall.). I come back to this issue in section 5.5.1.

4 Studies on older workers and learning

4.1 Introduction

There is a vast literature on the relationship among ageing, work and learning. This literature is organized according to the division among the disciplines of psychological, organizational (management) and gerontological sciences and covers a wide range of aspects. Most studies, both in the psychological field and in the other mentioned fields, have been undertaken from a cognitive perspective.

In the psychological research, cognitivism has a dominant position and the focus is on the cognitive skills of older workers compared with the younger ones. In psychology of work and organizational studies, scholars concentrate on participation in learning activities and look for the social determinants and psychological attitudes to explain the under-representation of older people in those activities. They also indicate what work conditions can favour older people. In critical educational gerontology, educational issues are related to the risk of marginalization of older people in the post-modern society. In the humanist approach in educational gerontology, the meaning of growing old and its implications for education for older people is investigated.

I will examine the theoretical contributions from these fields of research through the lenses of CHAT, to highlight what aspects of older workers' learning remain neglected and why.

4.2 The cognitivist perspective on older workers' learning: the decline model

My research is about motives for vocational learning for older workers, the personal and the subjective dimension of the relation between older workers and learning. Since it is not possible to exclude the role of the cognitive functions in the development of motives, and there is a powerful discourse on the decline of mental capacities with ageing, I briefly discuss the results of the cognitivist studies on cognitive ageing.

Psychological studies on cognition and age focusing on working situations related to the use of new technologies have been selected as the ones closest to the interest of this research. Most of these studies are cross-sectional and see ageing as a natural process bringing with it weakening mental capacities such as information-processing and

working memory (Baracat and Marquié 1994; Rabbitt and Carmichael 1994; Charness, Kelley et al. 1996; Czaja 1996; Park and Schwarz 2000).

Czaja summarizes the findings of the literature about age-related changes in cognitive abilities related to the use of new tools:

"Examination of the data regarding aging and cognition suggests that older adults may have difficulty acquiring the skills necessary for successful interaction with computers. In general, the skill acquisition literature indicates that older people have more difficulty than younger people in acquiring new skills and that they achieve lower levels of performance (Charness & Bosman, 1990). This is largely because of age-related changes in cognitive processes."

(Czaja 1996)

Referring to a study carried out by her and other colleagues, she reports:

"Our findings regarding text editing are consistent with those of other investigators. In our initial study of text editing (Czaja, Hammond, Blascovich, & Swede, 1989) we examined the ability of different age groups to learn text editing. In addition, the training method was varied to compare the effectiveness of various training strategies. The training methods included online instruction, instructor based training, and manual based training. The results indicated that the younger participants were more successful at learning text editing than the older participants. The older people took longer to complete the posttraining [sic] tasks and also made more errors. (…).

With respect to training strategy, online instruction was found to be inferior to instructor and manual based training for all participants. The online package used in the study created a passive learning experience in that the learners made prescribed responses to prompts on the screen. Belbin (1970) has shown that active, discovery learning is superior for older adults."

(1996, 210)

Czaja and her colleagues do not seem to question whether these findings can be related to the different experiences accumulated through life and the meanings attached to these (for the relevance of meaning making in later ages see section 4.4). As discussed in the previous chapters, the conceptualization of mind in CHAT suggests that the differences in performance could be related to the processes of internalization and externalization of artefacts, the material production and the social relation on which this is drawn. Accordingly, the level of success in learning text editing in young and old people should be interpreted referring to the experiences of life to identify which artefacts they are familiar with and what meanings they attach to them in the specific context in which they are used. It is possible that the ability of learning text editing is higher for younger people, because they have already had occasions at school and with peers to master skills close to and similar to text editing. Moreover younger people might give a different meaning to text editing seeing it as an interesting task, while older workers can attach to it feelings of concern and uncertainty, recalling the changes occurring in their working environments.

There are some scholars who recognize that a generation effect could explain the difficulties encountered by older people in using new technologies (Molinié and Volkoff 1994). Contributions from approaches based on generation effect can be interesting in that they tend to highlight historical, cultural and social elements related to age in explaining individual behaviours[23], although they do not focus on the interplay between individuals and contexts. Molinié's and Volkoff's work shows that a generation effect exists:

"In the oldest age groups, the spread of computers between 1987 and 1991 seems broadly to reflect a generation effect. It is, of course, impossible to ascertain this with the rigour of longitudinal study. But one can move near this concept of generation by comparing the proportion of computer users in 1987 and 1991 for the same birth year group. It is as if employees who used a computer at work in 1987 continued to use it in 1991 however old they were, but that being a 'new user' would dwindle among the oldest generations. And, the more intensive the computer work, as in the case of employees, the less likely the employee is to 'begin' using the computer at work at an older age. Computer usage seems to depend greatly on the age of workers at the time computers were introduced, as well as the conditions in which technology was introduced. Software design, means of consultation, training policies and methods should also play, for many years to come, an essential role in easing the access to data processing for the older employees."

(1994, 221)

Indeed, referring to CHAT, this study clearly indicates that the process of appropriation of artefacts appears to be at the heart of the explication of the computer usage of older employees.

From the point of view of sociocultural and cultural-historical approaches, cognitivist studies have also the limit of collecting data through experimental design (Rogoff 1984; Minick 1985). Laboratory tests keep out context and real-life situations, which are closely related to individual performance. Reactions to stimuli should be interpreted in the light of the activity system in which both stimuli and reactions take form and the life histories of people.

Baracat and Marquié (1994) analyzed a real-life training situation involving fifty professional women typists attending a word-processing course. However, they asked the individuals to imagine hypothetical situations suggested in some statements and to

[23] In the sociology of age and demographic studies, age is not seen as a merely chronological indicator of the biological ageing. Rather age indicates the location of the individual in the history and the phase of life, being both factors at the origin of differentiation among individuals. This approach underlines life trajectories and time dimensions structured in social norms so that age appears as a social construct. Ryder, N. B. (1965). "The cohort as a concept in the study of social change." American Sociological Review 30(6): 843-861, Neugarten, B. L. and N. Datan (1973). Sociological Perspectives on the Life Cycle. Life Span Developmental Psychology. P. B. Baltes and K. W. Schaie. New York, Academic Press: 53-71, Elder, G. H. J. (1975). "Age Differentiation and the Life Course." Annual Review of Sociology 1: 165-190, Saraceno, C., Ed. (1986). Età e corso della vita [Age and Life Course]. Bologna, il Mulino.

indicate whether or not they would actually perform the action, to test anxiety and fear of making mistakes using the new software. Therefore, even though the study was based on a real-life training situation, the research design required participants to 'enter' into hypothetical situations. The problem here is that their answers could depend on their ability and willingness to imagine the real situation in the workplace where time and organizational constraints, stress, power relationships, can determine very complex settings. It is doubtful that individuals would react in the same way in a real situation as they imagine they would when they are far from the real context.

In general the studies on cognitive decline show their limits in assuming a direct relation between tasks and cognitive functions, neglecting the role of past experiences and the personal making sense in participating in activities. This emerges as clear in the research design of this type of research which requires only artificial settings. The assumption of the reproducibility of the "real" relation between the performance of tasks and cognition in a laboratory with the administration of tests derives from the conceptualization of mind as a repository of neutral information which are only processed, a stance typical of the cognitivistic approach, as discussed in sections 2.6 and 3.2.

This criticism holds and is even strengthened when statistical methods are used to measure the variability in performance due to age, taking into account also other sources of the differences in performance such as education, employment and gender. These studies are able to demonstrate the systematic decline across the life span for all cognitive functions[24]. Yet this outcome cannot predict the performance of older people in everyday environment, as pointed out by Park, referring to the Berlin Aging Study, carried out by Lindenberger and Bales (Lindenberger and Baltes 1997) on a large sample of older adults in Berlin:

"One important message from the Berlin Aging Study is that being highly educated, affluent, or of high cognitive ability does not protect an individual from age-related decline. The finding that sociobiographical variables such as social class and education did not mitigate age effects suggests that individuals age at the same rate and show age-related decline regardless of initial level of ability. Nevertheless, *these data should not be interpreted to suggest that individuals of diverse initial abilities will show the same effects of cognitive aging in their everyday environment*."

(Park 2000, 17-18, my emphasis)

[24] Denise Park suggests that this would indicate that the decline could be of biological origin Park, D. C. (2000). The basic mechanisms accounting for age-related decline in cognitive function. Cognitive Aging. A Primer. D. C. Park and N. Schwarz. Philadelphia, PA, Taylor & Francis: 3-21. P. 17.

This clearly demonstrates that the analysis of data collected in experiments (tests) carried out in laboratories cannot produce findings to support the interpretation of the learning processes of older adults in the specificity of their working activities.

Research on cognitive ability and work performance is of interest for this research too, because of the emphasis of CHAT on activity as source of personal development. As discussed by Park and Gutchess, most of the studies and meta-analyses show that there is no relationship between age and job performance (2000, 225). The authors identify a number of aspects in workplaces which could account for this finding, among which tacit knowledge, domain-specific knowledge and experiences stand to mitigate the effects of the cognitive decline. This suggests to the authors that appropriate environmental conditions and the development of knowledge would support older adults at work[25].

Yet they tend to interpret the role of knowledge only in its quantitative dimension:

"Because it is clear that continuous and gradual cognitive decline begins in early adulthood (see Park, chapter 1 in this volume), it is important that, as workers age, they keep abreast of changes in technology and job requirements. A middle-aged worker who updates skills in a continuous and gradual fashion will not have to make large adaptations to learn new workplaces functions. An older worker, however, who perhaps has never used a computer and suddenly is required to learn *many new functions simultaneously* as a new job requirement would be much more disadvantaged than a middle-aged worker who had to learn only an updated version of a software package as a new job function."

(Park and Gutchess 2000, 227-228, my emphasis)

Although learning many new functions could maybe be seen as more challenging than learning few ones, the process of learning also implies other important and crucial aspects and cannot be reduced to the dimension of acquisition of knowledge as this research demonstrates (see Chapters Eight, Nine and Ten).

A similar shortcut about learning emerges in the Czaja's work with other colleagues, discussed earlier, which shows the importance - as a barrier to learning - of previous appropriation of tools. They found that older workers make analogies with devices that they are accustomed to using and this hampers their learning:

"Further, the type of difficulties encountered by older adults during training suggested that they had difficulty suppressing knowledge that was inappropriate for text editing, such as knowledge related to the operation of a typewriter. This finding is consistent with our findings (Czaja, Hammond, Blascovich, & Swede, 1989) regarding inappropriate typewriter analogies. In our studies of text editing, we found that older people had difficulty in grasping the concept of computer file and also had problems with the use of the enter key. It may be that they were unable to modify previously well learned concepts relating to

[25] I report more contributions on the relation between ageing and job performance in section 4.3 dedicated to the organizational studies.

typewriters. Halasz and Moran (1982), in their study of text editing, found that many errors made by the study participants could be explained by inappropriate use of their knowledge about typewriters. Elias et al. (1987) pointed out that when teaching older people text editing it is important to point out differences between using a typewriter and using a computer for document preparation."

(Czaja 1996)

Czaja considers knowledge about obsolete tools as something to suppress. In CHAT framework, the appropriation of artefacts develops psychological functioning and their usage mediates between subjects and object. Therefore it is possible that in order to internalize (or appropriate or master, see section 3.3.3) new artefacts, the subject refers to psychological processes based on the old artefacts. In other words, the internalization of new artefacts is based on those previously acquired. Hence, only an explicit reflection on the relation between the new and the old ones can support the older workers in the process of the transformation of their mental processes. Last but not least, when the artefacts are new ones, workers need to find a personal sense of the motives to appropriate the artefacts. As highlighted in Chapter Three, needs emerge from activities and have to meet the appropriate object to spring motives towards actions, in this case appropriation and internalization of new tools. Mastering a new artefact can initialize a process of personal development too (section 3.5).

On the basis of the reflections elaborated using the conceptual tools of CHAT, I conclude that the model of the decline of cognitive functions indicates a possible deterioration of these functions, but the studies framed in this perspective cannot provide evidence of this deterioration in the older workers' performance at work and in other activities. Studies in the field of organizational psychology seem to indicate the relevance of work conditions for the intellectual flexibility of older individuals. I come back to this in section 4.3.2.

4.3 Socio-psychological and organizational approach: a deterministic relation between older workers and learning

In the field of psychology of work and organizational studies there is a prevalent tendency to conceptualize older workers' choices about vocational learning as determined by social factors. The individual characteristics are seen as exogenous, that is, as features of the individual, which incentives and external conditions can only influence, but not shape. At the same time, the contextual aspects taken in consideration

in these studies – work design, career paths, work organization, etc. – are seen as independent from the actions of the older workers.

I organize the presentation of a sample of these studies in two groups according to the emphasis given to individual rather than organizational aspects of this issue. Yet it is possible to observe, as all the studies try to combine the two sides of the issue of older workers' learning, the individual and the collective one, and in doing so, they swing the attention from one aspect to the other, without discussing the complex reciprocal interrelations between them, and overlooking the role of the specificity of the activities in which the older workers are involved. I come back to this point at the end of this section.

4.3.1 Individual factors

The study of Warr and Birdi is relevant for it investigates the effect of age on voluntary participation in learning (1998). The focus on voluntary learning is an attempt to analyse older workers' motivation to learn of. According to the authors, motivation and self-directed personal development have become important due to the changes in the pattern of careers built across frequent movements in different organizations. Their work analyses data from a large sample of manufacturing workers, mostly vehicle assemblers in shop-floor in UK companies.

Warr and Birdi examined the participation in a range of voluntary development activities[26] and found that older people participated significantly less often than younger people. Using regression analysis[27], they showed that age is not a significant factor to explain the participation in development activity. From their study it appears that the effect of age is neutralized when learning motivation and educational level are introduced in the analysis. Learning motivation is not clearly conceptualized, but only the operationalization[28] is reported[29] from which an individualistic view on motivation

[26] These are "... a company-sponsored tuition refund scheme, a company-subsidised employee development programme, a company-provided employee development centre, and a personal development record made available for each employee to plan and record his or her progress." (ibid., 191).
[27] They include individuals and environmental factors in the regression model. Yet I consider this study to be focused on the individual aspects because of its emphasis on individual characteristics.
[28] "Operationalization refers to the rules we use to link the language of theory (concepts) to the language of research (indicators)." Rose, D. and O. Sullivan (1996). Introducing Data Analysis for Social Scientists. Buckingham, Philadelphia, Open University. p. 13.
[29] The authors have identified five items to measure the level of learning motivation, from just being keen to make use of learning opportunities to the highest level of being willing to participate in learning activities knowing there is no guarantee of promotion or pay increase (Warr, P. and K. Birdi (1998).

emerges[30]. The authors conclude that education level has an important impact on learning motivation.

Since learning motivation is an important factor to explain the lower participation of older employees in developmental activity, the authors focus on it to investigate possible sources of differences. Findings show that learning motivation is explained by, ceteris paribus, age (negative sign), educational level, learning confidence, support in non-work environment (family, friends) and time constraints (negative sign). The fact that age has a significant negative impact on learning motivation needs to be investigated further by including in the regression model some other variables. Possibilities indicated by Warr and Birdi include: older workers' perceptions that they do not have any significant career goals to achieve; obstacles to career moves; conservatism; reduced level of physical energy; job satisfaction; organizational commitment; task-demands of particular jobs. They then identified as possible factors to explain the lack of learning motivation – related to and accounted for in the age variable – previous experiences of failure or great difficulty during training, as well as stereotypes of older people and an insufficiently developed 'continuous learning culture' within the work organization as a whole.

Even if the authors have hypothesized a wide range of factors, they then concentrate their attention on the content of the training activity. They suggest enhancing development among older staff by offering opportunities for voluntary learning in areas attractive to them, creating an opportunity to trigger learning confidence that would encourage them to get involved in further educational activity. They refer to a 'virtuous cycle' - the fact that "more activity leads to more motivation, which in turn leads to more activity. " (201). Such a stance fits in with the cultural historical activity theory conceptualization of motive formation (and personality) for which – using the terminology of CHAT - actions can become richer and outgrow the activity to which they belong and give birth to new motives and activities (sections 3.4 and 3.5).

I can then agree with Warr and Birdi when they say that "The key practical problem is how to encourage older staff to enter that process initially." (201). Yet on the basis of CHAT, entering an activity cannot automatically produce motivation, and, in particular,

---

"Employee age and voluntary development activity." International Journal of Training and Development 2(3): 190-204. p. 194).

[30] My conceptualization of the subjective motivational dimension is discussed in sections 3.5 and 6.5.

learning motivation. Indeed, the authors suggest that to facilitate the start of the process, opportunities to get involved in a developmental activity in areas of interest to the older employees should be given. From the findings of their study, they also deem, as an important condition to develop learning motivation, the support from the workplace. Supporting older workers in their own interests can have the meaning of recognition of the phase of life that the older employees are in, namely the fact of being at the end of the working career and the need to develop perspectives adequate to cope with the transition from work to retirement and other kind of activities.

However the 'virtuous circle' of Warr and Birdi seems to be lacking an adequate theoretical framework. They seem to think that the virtuous circle could start just because the content of the training activity is interesting. In CHAT this determinism is not arguable. It is also necessary that the action of getting involved in such a course be aroused by a motive that ranks highly in the motives comprised in the personality. As I discussed above (section 3.5), personality is not a coexistence of different motives, it is a hierarchy of personal senses of motives which develop and operate in hierarchical relationships. Therefore in order to understand how an employee chooses to start a developmental activity, it is necessary to consider her/his whole system of motives and personal sense in hierarchical relationships and analyze how and where the new developmental activity comes into this hierarchy and is related to the other motives.

4.3.2 Organisational factors

Older workers and learning has also been focused on by WORKTOW, an action research project in small and medium sized enterprises in industry, service and office-work sectors in three European countries (Tikkanen, Lahn et al. 2002). The project aimed to identify innovative ways "to motivate older employees to participate in learning activities" (ibid., 13) and provide recommendations for Human Resources Development (HRD) and European and national policies to enhance learning organisations. A number of case studies of good practice in educational and training interventions were analysed. The analyses revealed a range of difficulties in getting employees, employers and managers involved in learning and competence development. It appears that time constraints play an important role in the case of women, for whom family and other relationships create demands and responsibilities to be juggled with work commitments (ibid., 60). The issue of time also emerges in relation to workload

and middle managers obstructing participation in training activities due to pressure of work (ibid., 65). The investigation by Tikkanen and colleagues also reveals that some learning interventions were obstructed by trade unions, or by internal struggles. In a more recent work, Tikkanen, quoting other studies, again claims the reluctance of trade unions to support older workers' learning (Tikkanen 2006, 31). Other scholars identify obstacles for older workers' learning in employers' prejudice (Taylor and Walker 1998) and in the employers' decision making (Taylor and Urwin 2001).

In conclusion, in the work by Tikkanen and colleagues (2002), none of the analyses of the good practices indicated a successful way to develop motivation, especially in the case of low skilled workers, while the organizational dimension of the issue of training and learning emerged.

The authors' final recommendations for policies at European and national levels and for policies at the level of branches and companies focus on developing attitudes as "paying attention", "being sensitive", "making efforts" to address initiatives that are needed. The emphasis is on increasing awareness of the value of older workers' competences, supporting age-management in companies, strengthening educational opportunities, improving working conditions, developing incentive systems, and adapting work organization and training systems to the diversity of workforce.

Tikkanen and colleagues also suggest, shifting their attention from the organizational dimension to the individual one, that greater attention should be paid to the integration of individual interests for developing training activities:

"*When developing national policies in Europe to support flexible arrangements between work and retirement greater attention should be paid to synergies between personal interests in work, leisure and training*. Our studies have illustrated the fruitfulness of taking the interest of employees in late career as a point of departure for personal development and for updating work skills.".

(Tikkanen, Lahn et al. 2002, 116, authors' emphasis)

Tikkanen also points out that older workers are 'highly critical consumers in the training market' due to their long professional experience and capacity of judgement (Tikkanen 2006, 30).

It is not only formal training that is important to keep older workers employable. Learning at work is becoming increasingly crucial for older workers due to rapid changes in work practices and technological innovations (Tikkanen 2006). Tikkanen's study on older unemployed technicians shows that they think they need to go back to

work to maintain their job competence, even if they have previously attended formal training courses.

On the importance of work to maintain and develop the capacity of working, studies on the influence of jobs on ageing (Farr, Tesluk et al. 1998; Schooler, Caplan et al. 1998) show how complex working environments can provide stimuli and challenges that tend to increase intellectual flexibility and work performance over time (Hedge, Borman et al. 2006, 94-96). In particular Schooler and colleagues put forward the hypothesis that this is due to the higher levels of job satisfaction and work involvement of older workers compared with the younger ones.

Along the same line, Hedge et al. concentrate their attention on job design, career paths, types of jobs, training opportunities to keep the older employees employable, and stress the role of health care benefits and pension schemes as incentives to older employees to retire later on (Hedge, Borman et al. 2006). They refer to motivation as the individual desires and wishes, as reflected in their planning for the future. The knowledge about older workers' desires and plans is seen as useful to design and implement HR management policies (ibid., 110-113).

So, the literature reviewed in this section indicates that both individual and organizational aspects contribute to the development of competence (learning) and cognitive functions: workers with their own interests-desires and work organizations with their conditions of work can both support the learning process necessary to maintain the employability of older workers.

In all the contributions mentioned the older workers' context of work and the personal interests seem to be conceptualized as separated, and the recommendations are about taking into consideration both sides of the issue in order to put forward successful policies. Generally there is no mention of possible relationship between contextual and personal dimensions and how to include the consideration of this in the design of interventions to support older workers' learning.

4.4 Educational gerontology

Although a large part of the educational gerontology has been theoretically underdeveloped for a long time, more recently, studies in this field have been elaborated according to critical perspectives and the life course approach (Glendenning 2000;

Withnall 2006). These theoretical frameworks have given rise to questions about what age, ageing, and the position of old age in the postmodern society are and the role of education in supporting old people, especially in the post-work phase of life.

From a critical perspective and with reference to works of Lash and Urry (1987), Bauman (1992; 1997), Leonard (1984), and Taylor (1989), Phillipson depicts the postmodern society and its characteristic of instability, and lack of resources to support people in constructing their identity. According to the critical perspective, the task of critical educational gerontology is to highlight the role of education in supporting older people in their struggle to find a place in the postmodern society and to build their identity.

The gerontology field is traditionally defined by the concept of older age and is based on the premise that older age has a specificity compared to the younger one. The focus is on biological and psychological factors and the emphasis is on impairment of health, cognition, and loss of perspectives. Yet since the end of the 1990s the adoption of a life course approach has widened interests in the gerontology field to the social factors and the long-ranging effects of early experiences. In the gerontological literature the issue of whether age can still be seen as the relevant common denominator among older people arises, when it can be seen that variability within this group is even greater than in other age groups (Settersten 2006). The adoption of the life course approach reveals that older people do not share the same economic and social circumstances in which they have grown up and lived. This raises the question of whether it is possible to generalize the findings to future cohorts of older people (Settersten 2006; Withnall 2006). However, the life course perspective is used to investigate how social and individual experiences can influence learning in later life and how older people make sense of their own learning attitude.

In critical educational gerontology ageing is seen as a socially constructed event in which the state and the economy play major roles (Glendenning and Battersby 1990). The preoccupation is about marginalization of older adults and raising their consciousness of power and control in the construction of the ageing process (Glendenning 1992; Withnall and Percy 1994). From this point of view, education can play a role of empowerment and emancipation.

The humanistic perspective has been developed in Britain by Percy and in the United States by Moody. Percy points out the difficulties in generalizing about older adults as a disadvantaged group and questions the supposed superior position of educators in trying to transform the others' view. Educators could be facilitators of the older people's learning, taking into account that older people have a lifetime experience to pass to the younger generations (Withnall and Percy 1994). Moody offers a more complex picture of the accumulated experience of older people, noting that this can be either a resource or a stumbling block. This depends on the meanings people give to their past:

"Our attitude toward our own past deeply affects the quality of life, whether we hold on to it too dearly or disown it too readily."

(Moody 1990, 25)

On the basis of the poet T.S. Eliot's meditation on the meaning of time and ageing, and on the call for attention to the value of the process of life review made by gerontologist and psychiatrist Robert Butler, Moody stresses that past experience needs to be questioned and reviewed to find meanings for what otherwise is only a sequence of events. He relates the life review to the conceptualization of development and learning in old age. According to Moody, each age has its own developmental task. The one for the old age is the process of life review:

"It is this sense of discovery that gives the process of life review its true significance and its relationship to continuing education throughout the life cycle. If we accept this process of life review as being the major developmental task of old age, it must become the starting point for any theory of education that we might evolve. We will need to pay the closest attention to how older people use their life experience in the learning process in order to build the strengths of experience in old age. "

(Moody 1990, 28-29)

Education can support older people in this process through integrating their life experience into the classroom. Pointing to the work of Paul Freire, Moody argues that an educational method based on a dialogue and partnership between educators and older learners is needed.

Because Freire does not deal with ageing and the meaning of growing old, Moody refers to Jung and Erickson, who have a cognitive approach and single out phases of life. According to Jung, in the first part of life, individuals would seek to achieve a stable ego-identity, but in the second part of it, self-realization and a sense of wholeness are searched for. Erickson deems that the distinctive task of old age is coping with a feeling of despair and the acceptance of ageing as part of the life-cycle.

4.5 Concluding remarks

The cognitive approach considers older workers' development from a biological point of view, playing down the role of the social and cultural side. So in the absence of further biological development which occurs in the first part of life, the cognitive approach considers only decline of mental capabilities. Yet, as reported by Billett, referring to the works of Baltes & Staudinger, and Sigelman, the older workers' capacities and knowledge developed through experiences can be important to compensate for the slower nervous system:

" … the evidence also suggests that older adults have developed significant memories and capacities that are highly effective in resolving problems and performing effectively in work-related roles. This capacity can compensate for slower nervous system (Baltes and Staudinger, 1996), because the level of performance is not dependent on processing capacity alone. For instance, while typing speeds might decline with age, older typists are as efficient as younger typists, possible because their wealth of previous experiences allows them to predict and execute the typing task more efficiently than the younger counterparts: "…while older adults may develop specialised knowledge and strategies that may compensate for these losses." (Sigelman, 1999:229)"

(Billett 2006, 160)

Workplace activities surface as pivotal in the development of good performance also in the studies carried out by other scholars in the psychology of work and human resources approaches mentioned in section 4.3.2, who stress personnel management policies, working conditions, employer's support and the trades union's attitude as necessary to favour the older workers' participation in learning activities.

Yet, the mechanisms through which older workers can get engaged in learning are not clear. According to the view held in those studies, older workers become engaged in learning if they have support from the companies and training systems are more adapted to their specificity (experiences and personal interests)[31]. This implies a view of learning as an individual endeavour which has to be triggered by favoured conditions, but is not shaped by the object of the activity. These studies tend to consider all types of workplaces to be similar and fail to thematize the link between learning and strategies of production. I devote the next chapter to this issue.

[31] This is also the stance on which European Union reports on older workers and employment rest when they deal with training. See for examples Walker, A. and P. Taylor (1998). Combating Age Barriers in Employment: A European Portfolio of Good Practice. Dublin, European Foundation for the Improvement of Living and Working Conditions. and Lindley, R. and N. Duell (2006). Ageing and employment. Identification of good practice to increase job opportunities and mantain older workers in employment. Bruxelles, European Commission.

On the basis of a life course approach, educational gerontology points out how erroneous it is to consider older people as a homogeneous group. This research acknowledges the specificity of contexts and bound its investigation to older workers with low education in the industrial sector (see Chapter Seven).

The educational gerontology was certainly enriched by the critical perspective too, which contributed to overcome the dominance of the psychological 'deficit' model of older adults' learning abilities (Formosa 2002).

The invitation from the educational humanist gerontology to consider the review and interpretation of the past as the characteristic of growing old also stresses the relevance of older workers' subjectivities. The contribution of the humanist approach is to frame older workers' subjectivities in the process of growing old. This means to investigate how older workers develop personal senses[32] for their past life experience as an element to interpret their engagement with the present. While I acknowledge the relevance of the theme of the personal sense of growing old and the role of the past in it, I take a different stance from Moody who adopts a cognitivist view on personal development and attaches the activity of life review to the old age. I refer to the cultural historical approach to take into account subjective ways of growing old in the issue of older workers' learning.

I note that Leontiev also points out the role of the past review in self development, but his approach, different from the Moody's one, allows one to see a relationship between the self and experiences, and not only between age and experiences. Leontiev underlines that "the contributions of past experience to self were dependent on self itself and became its function" (see section 3.5). In other words, the past experiences can be re-interpreted by the self in accordance with its continuous cultural-historical development. That is, there is a co-evolution between experiences and self: the experiences - maturated by participating in collective and material activities - can shape the self, but the self shapes the experiences by changing the attribution of senses to them, and thus also changes its way of doing about the world, and through this it changes its self again, in an ongoing intra-changes between the self and the experiences.

[32] I discuss the concept of personal sense and the difference with respect to the concept of meaning in section 3.4.

The distinction about experiences put forward by Fischer can be useful here to understand the change of sense attributed to a past experience. In his discussion of the definition of labour process knowledge[33], he investigates the conceptualization of experiences (Fischer 2002, 129). Drawing on Hegel's dialectical account of experience, Fischer distinguishes between *having* experiences and *making* experiences. In the first case the immediate sense perception prevails, while in the second the latter is enriched by imagination, memories, emotions and thought. As I can interpret it from a Leontievian perspective, a person makes experience when she reflects on *making* experiences and develops a personal sense of it. Indeed this reflection is never detached from material-collective activities and their social meanings.

On the basis of this view, it is important to allow room for the subjectivity of the older worker in the analysis to understand his or her engagement in learning in relation to her/his interpretation of past experiences.

The discussion on the relationship between age, self and experiences highlights my way of defining older workers: they are workers who might have a lot of experiences about work and life because of their age. Indeed, a young worker may have had already a life richer than that of an older worker, and made sense of it more than an older worker. In accordance with this definition, also a young – in term of chronological age – worker would be 'old' thanks to his/her experiences. Yet what can be distinctive of the older workers, who are also chronologically old, is that the biological, physical and social constructed ageing can become an aspect of the experiences and enter in the process of sense making. Hence older workers are the ones who have accumulated a good deal of experiences and made sense of them, including the fact of becoming chronologically old. I will explore this in my empirical work with reference to working and learning.

The next chapter is devoted to work activities and to differentiate them according to work organization and labour process, and the type of work experience they can yield in the case of the workers on the shop floor. I will come back to the issue of meanings of working experiences in section 5.5 again.

[33] According to Fischer, the labour process knowledge develops in context of work where theoretical knowledge is not sufficient to cope with the tasks assigned and practical knowledge acquired through experiences is also crucial. This is typical in workplaces where computer-aided tools have been introduced.

5 Strategies of production and workers' engagement

5.1 Introduction

As the previous discussion in Chapter Three has shown, in a CHAT perspective, learning occurs in object-oriented activities. Due to the tight interpenetrations among collective activity, culture and subjectivity, it follows that learning is collective and cultural and the workers' needs and motives for learning take shape in the engagement in object-oriented activity.

Therefore, preliminary to the analysis of older workers and learning is an investigation of the different types of object-oriented working activities in which they are involved. In the CHAT influenced perspective I am developing, economic activities have to be identified on the basis of their objects, a task to which I dedicate this chapter. This serves the goal of analysing the different types of older workers' engagement with strategies of production.

In CHAT there are few studies on learning at work which take into account the form of production. In the next section I present the work of Engeström who was the first scholar, later in his career, to develop an interest in this aspect of production activity (2004). His interest is on organizational changes in interconnected activities systems (e.g., the productive system and the client's system) which he interprets through the theory of expansive learning he has developed (Engeström 1987).

Engeström concentrates on what is considered the most advanced form of production, co-configuration (Victor and Boynton 1998), where employees and managers engage together in giving shape to the object of the production and service organizations (Engeström 2007). Yet I need to investigate the different models of productive activities developed so far in the Industrial era in the Western World to outline the objects of the productive activities and the related different ways of organizing industrial work. This is to frame the analysis of the subjective relations of the workers to their own tasks in my empirical work (Chapters Eight, Nine and Ten).

I refer to the sociological literature and read it guided by the interest in the job design, the technologies in use, the work practices, and the work organization required by the different strategies of production in the global context of competition and in the western

institutional context. The concept of strategy of production is discussed as an analytic tool to identify different objects/motives in organizing economic activity (section 5.3).

The investigation into different strategies of producing goods through the sociological literature aims to show how industrial activities are connected to the development of institutions, regulations, social and local contexts (section 5.4). These connections between models of industrial strategies and institutions and socio-cultural contexts create the social aspects and meanings about work issues, even if the sociological literature plays it down. In my research, taking into consideration these connections provides the backcloth for my investigation on the workers' personal senses about work.

The account on the strategies of producing goods shows the centrality of the managerial principle of separation between conception and execution, which is applied in different ways across the models of strategies discussed in this chapter.

I propose to interpret the theoretical implications of this managerial principle for the motivational dimension of work using Leontiev's concept of hierarchy of personal senses of motives and his distinction between action and operation (section 5.5). The latter is discussed as the relation between thinking and doing, in other words, conception and execution. I question what subjective relations with the object of the activity are implied for workers carrying out operations without being involved in their design. On the basis of these theoretical ideas, I develop my working hypothesis - explored in the empirical work presented in the last three chapters - that the workers' positions in the work organization create the conditions for their personal relations with the object of activity and their subjective engagement. Yet according to Leontiev's concept of hierarchy of personal senses of motives, the engagement develops if the worker can recognize a personal sense in the motive behind the object of the activity.

Because of the theoretical implications of the managerial principle of the separation between conception and execution for the workers' personal relations with the object of activities argued in section 5.5, next I elaborate a typology of models of strategies of production according to the grade of separation between conception and execution by which these are characterized (section 5.6). It will be used in Chapter Seven to elaborate the research design.

The chapter ends with a discussion of the standard approach to the relation between strategy of production and learning to introduce the following chapter on workplace learning (section 5.7).

5.2 CHAT and production organizations

The development of a framework to interpret transformative learning in workplaces has been the Engeström's starting point in his work: for this purpose he refers to the contributions of Vygotsky and Leontiev, extending their ideas to work settings for the first time (1987; 1996; 1999). He also draws on the Il'enkov perspective on contradictions to point out that activity systems evolve through contradictions. Contradictions are structural tensions emerging within and between activity systems. He points to the multi-voicedness of activity systems as including multiple points of view, cultures and interests. The interplay between the structural contradictions and the individual participants in the activity system brings about expansive transformations and indicates that any activity system needs to be understood as the outcome of changes over lengthy periods of time (2004, 149-150). He takes into account the agency of the personnel in prompting transformations in the activities. Yet, in the work of Engeström, agency relates to the people's ability and will to transform their activities (2011, 99), and it does not include why people engage in that transformation and are ready to overcome the difficulties encountered in the changes. In fact, Engeström notes the passion and involvement of the personnel as well as difficulties in the organizational changes throughout the Change Laboratories carried out in different businesses and discussed in his Developmental Work Research (2007; 2011, 99). At the same time, he implicitly recognises insufficient theoretical tools in his theory of expansive learning to interpret the subjective dimension. I come back to this point in the next chapter devoted to the relation between workplace learning and subjectivity (section 6.4).

In this chapter, dedicated to the outline of objects of industrial activities, it is relevant to note that Engeström is interested more recently in analysing expansive learning in an emerging new way of production called co-configuration production (2004; 2007). Drawing on the work of Victor and Boyton (1998), he defines this way of organizing activity as the creation of customer-intelligent products and services that adapt to the changing needs of the user by continuous relationships of mutual exchanges between customers, producers and the product-service combinations over lengthy periods of time.

The producers collaborate in networks within or between organizations where mutual learning occurs. He studies co-configuration type of work to enrich the theory of expansive learning by analysing cases of organizational issues in companies from different sectors, mainly in Finland.

Since I want to explore the engagement of workers on the industrial shop floor, I need to pull ideas from other perspectives on economic and work activities to include other forms of production and their wider institutional and competitive contexts, and thus pave the way for the study of the subjective dimension in the work activity.

I will now review the industrial sociological and political economic literature to develop a fuller picture of the way that different strategies of production position people to be involved with the conception and execution of the work process. First of all, I introduce the concept of strategy of production.

5.3 The concept of strategy of production

Before reviewing the sociological literature, I need a concept to refer to the different methods of production I have found in it. The aim of this section is precisely to introduce the concept of strategy of production as my preferred analytic tool to interpret them. I draw on the theory of labour process to stress the relevance of the job design and work organization in the description of productive strategies. Yet I see these work aspects in a CHAT perspective, namely in relation to the object of activities and the subjectivities of the people involved in these.

The Marxist analysis of the labour process and related debate can inspire a more comprehensive understanding of the relations of employment typical of the capitalistic industrial sector (Thompson 1983; Thompson and Warhurst 1998). This debate, initiated by Marx and then renewed by Braverman (1974), points out how the design of the labour process is shaped by the property of the means of production and the management styles (Burawoy 1979).

The labour process theory uses the concept of labour process to investigate the relation of power between managers and workers, driven by the managers' goal of extracting the ability to work from the workers, in other words to transform the labour power into labour. This perspective focuses on the introduction of technologies to control the

workforce, its effect on the de-skilling and up-skilling of workers, as well as on the workers' resistance to the managerial control.

The place of subjectivity is still debated in the labour process theory. Some authors consider it as reflecting an individualistic view of the experience of working which undermines the analysis of the relations of production (O'Doherty and Willmott 2001, 9). Others attempt to respond to the criticism of a lack of understanding of the "interrelations between the objective and subjective features of work" (Thompson 1983, 178) that requires finding out how to overcome the problem of the 'missing the subject'. Thompson, with Hales, calls for a Marxist psychology (ibid., 178). O'Doherty and Willmott put forward the idea of referring to poststructuralism insights for an understanding of how the subjectivity of workers "is co-implicated in the accomplishment and reproduction of capitalist employment relations." (2001, 2).

If the starting point in the labour process theory is the issue of power and relations of production to extract the ability of work of the workers, in this research it is the object of the activity and the subjective relation of the workers with this latter interpreted in a CHAT perspective. Hence I use the concept of the labour process as an element to identify the strategy of production as it refers to the phases of labour to transform the input into output and in which workers engage in various degrees.

In contrast to the labour process theory, both labour process and work organization are seen as related to the strategy of production of the enterprise, and not only by the aim of extracting the ability to work from the workers. The strategy of production is about how to organize the labour process and the work organization to comply with the object of the activity, given the institutional and market conditions, the technological, financial and human resources available, and the economic, social and political cultural beliefs. Thus the strategy of production is the outcome of complex interrelated factors.

In the sociological literature the strategies of production are discussed as interpretation of economic changes and tend to be seen as a sequence of models, where the latest overcomes the former (Herrigel 2004). Coherently with the cultural and historical sensitivity of CHAT, I consider the different strategies of production as forms of production which can still be present in the production practices and organizations today and have not necessarily been completely abandoned to embrace new types of strategy.

The next section is devoted to illustrating the strategies of production found in the sociological literature.

5.4 Strategies of production and working practices

In what follows, I discuss different production strategies, but within the terms of this research the discussion is bound to the level of participation permitted by their different forms of labour process and work organization, as explained in the above section.

5.4.1 The mass production and Tayloristic organizations of work

The mass production system emerged at the beginning of the twentieth century as a result of a long process that saw the social forces conflicting and negotiating over the nineteenth century about the organization of production (Piore and Sabel 1984; Mathews 1989). According to Piore and Sabel, two types of technological development were in collision: one was the craft production and the other was the mass production. Both were carrying different visions of the role of machines and skills. The former was centred on a production process capable of producing a variety of products thanks to skilled workers using multi-purpose machinery; the latter aimed at cutting the costs of production and substituting the skilled workers with specialized machines, to produce a large quantity of goods at the lowest cost.

As Piore and Sabel argue, the outcome of the confrontation between these different models of production cannot be explained by the logic of industrial efficiency, but by the interplay of social and political forces. Mass production won the confrontation and became dominant, but this has not to be thought of as the unique path of progress:

> "… the research has uncovered preconditions for the success of mass production (and the concomitant decline of craft production) in the politically defined interests of producers and consumers – rather than in the logic of industrial efficiency. Thus not only do craft and mass production appear to be complements, but also, under slightly different historical conditions, the former might have been a more equal partner of the latter."
>
> (Piore and Sabel 1984, 21)

The winning vision, supported by the creation of adequate institutions and regulations, had accumulated advantages by consolidating its own technological paradigm and thus limiting room to other models of production. Although the craft production had been restricted by the economic entitlements acquired by mass production, nevertheless it survived even in the US, where mass production domination was strongest. Craft production and flexible specialization have had better fortune in the European countries

where mass production found it more difficult to penetrate and expanded much later than in the United States (Piore and Sabel 1984; Womack, Jones et al. 1990).

Along with mass production there has also been a development of a new science of management. Frederick Winslow Taylor was the first to synthesize the emerging scientific approach to the management of the production in the late 19th century (Rose 1978; Bahnisch 2000, 52). His starting point was a critique of the empirism in which production was organized to allow "soldiering" and inefficiency. Taylor's objective was to design a rationalization of the organization of production and work through a profound control of it. His theory is based on four principles:

- Task management: each task is precisely described and the worker is taught to manage the task with the method and in the time prescribed by the managers. The managers have to extract the tacit knowledge included in the traditional process of the craftsmen, and to transform it into rules and standardized methods. The workers are given the incentive to adopt those scientific methods and time to carry out tasks with an increase in the wage.
- Selection of the workers: each person has personal characteristics that make him or her suitable for a particular job. It is important to assign the right job to each of them to gain in efficiency.
- Cooperation between the managers and the workers: Taylor intended to substitute the "drive system"[34] with cooperation. Cooperation was also a way to limit the individual initiative of the workers. The solution to emerging problems is provided by foremen.
- Equal distribution of work between managers and workers: in the traditional organization, the workers had control over the production and a large autonomy in defining how to carry out a job. Taylor wanted a clear separation of conception from execution "removing all possible brain work from the shop floor and relocating it in a planning or layout department." (Mathews 1989, 23)

Taylor's scientific management approach was implemented in various forms by organizations to increase efficiency and productivity. Although the practice revealed

[34] The "drive system" was the traditional one which used to accelerate the pace of production threatening the workers with dismissals, wage reduction and disciplinary measures Della Rocca, G. and V. Fortunato (2006). Lavoro e organizzazione. Dalla fabbrica alla società postmoderna. Roma-Bari, Laterza.

itself as different from the theoretical scientific management championed by Taylor (Hoxie 1915 and Hollway 1991 quoted in Wilkinson 2003, 20-21), significant innovations emerged in the way of organizing production and work, such as the creation of the manager figure beside the capitalist, the functional foremanship with separated departments and bureaucratic processes and the incentive-pay schemes bringing about higher economic rewards for workers.

The combination of mass production and Tayloristic organization of work is called "Fordism", named after Henry Ford, the American founder of the Ford Motor Company. He was the first to introduce on the shop floor the assembly line, which has become the symbol of the mass production[35]. This mode of capitalistic development has profound links with the rest of the organization of the society, for it rests on mass consumption, policies inspired by Keynesism, sustaining consumption and on welfare systems. The social-economic sides of Fordism have been shaped by social and political conflicts over the last century creating the micro- and macro-regulatory institutions necessary to give stability to mass production (Piore and Sabel 1984).

Since the introduction of mass production, the high limitation of the workers' autonomy and the development of workers' skills had found opposition by the workers organized in trade unions. In different countries the conflict between capital and labour had given rise to specific features of industrial relations. Yet everywhere agreements were found in regulations that defined tasks, job classification, seniority, working hours, structure of the salary (Piore and Sabel 1984, 113), while the work organization has been accepted in its fundamental characteristics (Burawoy 1979).

One of these features of the typical organization of mass production is relevant for this research since it can limit the participation of workers in the activity of production, their autonomy and skills: this is represented by the principle of separation of execution from conception. From the following discussion of other production strategies (5.4.2), it will appear that this principle is still relevant in work organizations today. I will deal only with the industrial sector, but it is interesting to note here that this principle is now applied in the service sector too, for example in the economic restoration (Ritzer 1993). I discuss the principle of separation between conception and execution from a CHAT-

[35] I come back to this type of work organization in Chapter Eight, when I analyse the case of enterprise E1.

influenced perspective at the end of the review of the strategies of production in section 5.5.

I leave, for now, this issue to carry on with the illustration of other strategies of production found in the sociological literature, starting with mentioning the historical conditions for the development of other strategies of production. The aim is to complete the list of the models of production developed so far as a repertoire of object-oriented activities in which older workers can be involved nowadays.

5.4.2 New market and technological conditions and new strategies of production

From the 1970s, new developments have changed the circumstances that previously operated the corporations organized in a Tayloristic way for mass production. The spread of mass production enabled new corporations to emerge in other areas of the world, while the increasing saturation of domestic markets induced the search for new outlets as well as new economies of scale (Piore and Sabel 1984; Mathews 1989; Wood 1989; Hayter 1997). In other words, corporations now play on worldwide markets, tending more often to become transnational corporations, increasing competition in the markets, performing takeovers, bringing about the development of global information and financial services, producing interdependence and integration of the global market (Webster 2002, 68-73). At the same time the trend for the consumption of quality and diversity pushed the enterprises towards new concepts of production, both from the point of view of labour process and work organization (Piore and Sabel 1984, 189-190; Kern and Schumann 1991). Similar scenarios effected the rise of the cost of the labour force and raw materials (Della Rocca and Fortunato 2006, 54). As noted in Chapter Two, the introduction of the information technologies in manufacturing allows and requires new forms of flexibility (Piore and Sabel 1984; Mathews 1989; Castells 1996) as well as the possibility of a corporation's global localization (Webster 2002).

All these changes have been discussed in literature with different approaches and theoretical frameworks in search of the identification of the new emerging paradigm of industrial organization. Discourses can be found on flexible specialization (Piore and Sabel 1984), diversified quality production (Streeck 1991; Regini 1995), mass customization and co-configuration (Victor and Boynton 1998), lean production (Womack, Jones et al. 1990), flexible mass production (Boyer 1987; Regini 1995).

The following discussion is about flexible specialization, as Piore and Sabel (1984) call the company-level response to the crisis in the 1970s. I will then discuss the Lean Production model (process enhancement), presented by Wormack and colleagues (1991) as an evolution from Fordism. Finally, I will briefly present the strategy of outsourcing. The other types of strategies of production will be mentioned as variations of these models. For research purposes, the focus will be on workplace organization and skills required by the different strategies of production.

5.4.2.1 The flexible specialization

According to Piore and Sabel (1984), since the industrial revolution the two organizations of production, mass production and flexible specialization, had been coexisting so that in the 1970s, when mass production showed its limits, flexible specialization re-emerged as a system able to guarantee an increase in productivity.

Analysis of industrial case studies in the United States, Japan, West Germany, Italy, and France depict a revitalization of craft production. Piore and Sabel (1984) defined flexible specialization as small and medium firms, located and interconnected in industrial districts, taking advantages from being part of the same local community, acting in a complementary manner to produce a wide and changing array of products with skilled workers using multi-purpose machinery. These industrial districts are also characterized by the development of a balance between competition and cooperation. As mass production is regulated by macroeconomic institutions, flexible specialization is successful when the microeconomic regulation underneath their organizational forms has characteristics, so that:

- These forms have “the capacity continually to reshape the productive process through the rearrangement of its components” and “the set of possible rearrangement is bounded and the aim of redeployment limited”. In other words they are flexible and specialized (Piore and Sabel 1984, 269);
- They limit entry with informal restrictions: “getting a job depends on whom you know, and whom you know depends on who you are.” (ibid., 270);
- They limit competition over wages and working conditions to cut down costs, since this type of competition does not favour permanent innovation. Moreover, the organizational cohesion required for flexibility would be damaged by labour

exploitation. In flexible specialization, collaboration across the hierarchy is essential to foster innovation. Employment security, job sharing and broad job classifications can be as important as wage systems in promoting innovation.

Since competition is moderate, flexible specialization needs some other allocative mechanisms for an efficient deployment of resources. The community can have a role in providing mechanisms to support the perpetuation of the system. Training of labour is one of the tasks carried out by the community (1984, 273). Flexible specialization requires broadly skilled workers able to combine practical knowledge[36] and conceptual understanding, execution and conception:

"Production workers must be so broadly skilled that they can shift rapidly from one job to another; even more important, they must be able to collaborate with designers to solve the problems that inevitably arise in execution."

(Piore and Sabel 1984, 273)

The community serves as the setting where the formation of the craft workers both as identity and as mastery of 'productive knowledge' occurs.

According to Block's and Hirschhorn's works, as reported by Webster, in flexible specialization, information plays a critical role in many ways. First, the ICTs work with programmes that incorporate considerable quantities and complexities of information (Webster 2002, 90). This information input allows flexibility in the production of products as well as in the labour process. Therefore the operatives need to be multi-skilled, adaptable and flexible, and ready to learn and train to exploit the possibilities of ICTs:

"Where once upon a time employees learned a set of tasks 'for life', in the age of information technology they must be ready to update their skills as quick as new technologies are introduced (or even reprogrammed). Such 'skill breadth' (Block, 1990, p. 96) means employees have to be trained and retrained as a matter of routine, a pre-eminently informational task."

(Webster 2002, 90)

Secondly, the worker participates in the design of work reflected on computerisation and reprogramming systems. Since the production is flexible, the labour process is less standardized and dotted with unpredictable inconveniences. To be efficient it needs employees who are able to intervene and solve the mishaps, but more often than in other types of production, employees need to know the entire production processes to be able to respond adequately and improve the overall system (Webster 2002, 90-91).

[36] For a definition of practical knowledge see footnote 22 in Chapter Three.

Piore's and Sable's work has been criticized for its optimism regarding the possibility that the model of flexible specialization would become a dominant mode of production based on small enterprises (Bonazzi 2007, 155). In fact, initially the authors referred to flexible specialization as a mode of production typical of small and medium enterprises (SMEs), however, Sabel later argued that large firms have tried to elaborate a strategy similar to the one of SMEs and to take advantage of the flexibility of SMEs as subcontractors (Sabel 1989).

Boyer interprets the latter as a new paradigm of industrial organization which he calls flexible mass production: compared to the traditional mass production, this enables a larger variability of product and design by means of a flexible programmable automation[37] (1987). Regini further develops this ideal-type with respect to skills. He points out that its strategy to meet changing demand and volatile markets, keeping prices down, is based on an internal polarization of the employment structure (1995). It implies a reduction of skilled personnel and less emphasis on technical abilities to employ low skilled workers and save labour cost. Conversely, high-level skills employees are concentrated in sales, marketing, and customer relations.

Yet this debate on work organization in large firms is complex. Other authors - belonging to sociology of organization and industrial sociology[38] - prefer to emphasize the emergence of new models of workplace organization, such as Toyotism and Lean Production, based on the principle of process enhancement. It is to this literature that I turn now.

5.4.2.2 Process enhancement

Despite the aim to control and rationalize the production, in reality the bureaucratized Fordist corporations observed the need for large and costly inventories of materials and the space necessary to keep it, lack of incentives for workers, waste of time and resources in difficult industrial relations, the lengthy time to modify parts of products, the amount of defects because the quality control was located at the end of the assembly line (Hayter 1997, 44). All these limits of Fordist organization did not emerge as significant in the era of mass production, but became relevant when flexible production

[37] The flexible programmable automation is an extension of the programmable automation. The changeover of equipments can be done quickly and automatically, and the re-programming is accomplished at a computer terminal (http://science.jrank.org/pages/677/Automation-Applications.html).
[38] I will also refer to the contribution of business consultants as Victor and Boynton.

was needed, that is, production that was adapted to court the customers, satisfy an increasingly individualized demand for products and higher quality. Before the limits of the investments in automation in the 1980s, as a western response to the disadvantages of Fordism, the success of the Japanese mass production system became of interest during the second half of the same decade (Bonazzi 2007). The current trend of a fiercer global competition is keeping attention high towards the enhancement strategy, based on the reduction of waste in the productive processes, for its impact in cutting costs down.

Strategies and techniques to enhance the work process were first developed by the Japanese car manufacture Toyota. It takes the name Toyotism or Toyota system (Ohno 1988), that has spread to the United States and more recently to Europe. Womack and his colleagues, who wrote the most quoted book on process enhancement, call this strategy of production and work organization "Lean Production" since it aims at reducing all sorts of waste of time, space and resources through a continuous improvement in the production organization (Womack, Jones et al. 1990). The enhancement is also pursued with respect to the quality of the product. Each worker can ideally stop the assembly line if they discover a defective part or are falling behind. In this system, cooperation and teamwork are necessary with interruption to analyse in depth the reasons for a particular problem being possible (Ohno 1988; Womack, Jones et al. 1990; Della Rocca and Fortunato 2006). Such workplace organization softens the Tayloristic principles of tasks fragmentation, separation of conception from execution, control and supervision. The workers have broader skills and tasks and the role of managers is transformed from controllers to coaches (Mathews 1989; Victor and Boynton 1998). Skilled workers with multiple tasks are now required and welcomed to give feed-back and suggestions about the design of work process to the production engineering. Analysis of enhancement process firms permitted Victor and Boynton to identify expertise developed by the workers, which they call 'switching'. This is the capacity of switching between doing and thinking, as reflexivity over work practices:

> "In switching, employees go back and forth between standardized production and creative process enhancement. At one moment, the employee focuses on doing the work, such as assembling a car door or responding to a customer service call, and then switches to thinking about how to do the work better. This switching occurs over and over, and the information cues, incentive and reward systems, and structure encourages [sic] workers to do, then think, do, then think-to achieve efficiently and create ideas on improving the work itself."
>
> (Victor and Boynton 1998, 79)

By this "do and think", practical knowledge[39] is generated, where necessary, to change and improve processes. According to Victor and Boynton, all workers become "knowledge workers". From the perspective of management studies, Koike confirms that in Toyota workshops, workers develop intellectual skills too (Koike 2002). This kind of skill is developed through on-the-job training, working with veteran workers, and the supplementary role of off-the-job training. It implies the capacity of handling problems, detecting causes of troubles and fitting machines:

> "Since robots and other equipment have become evidently more complicated in structure through the merging of mechanical and electronic systems, naturally the skills required are more demanding. And it is noteworthy that workers on the production line utilise IT in identifying the causes of problems in robots. However, the relief person, the most capable in handling problems, has to input the data concerning the problems for each robot into the PC, so that their individual history may help in the diagnosis of problems."
>
> (Koike 2002, 399)

The possibility of adopting the Japanese model in American and European firms has been at the centre of an intense debate (Jürgens 1989; Aoki 1994; Delbridge 1998) as well as its interpretation to leave behind Fordism and Taylorism (Thompson 1983; Wood 1989; Wood 1991; Rinehart, Huxley et al. 1997; Revelli 2004; Della Rocca and Fortunato 2006; Bonazzi 2007). What it is relevant to note here is that empirical evidence shows that there are diverse applications of lean production, depending on cultural and institutional contexts, with different mixes of elements of the ideal-type of lean production. However, in general, the involvement of workers appears as problematic: the studies of Babson (1995), Rinehart and colleagues (1997), Appelbaum and Batt (1993) have found that this comes to be organized in a way that often is accompanied by job security reduction, lack of promotion, and weak representation of the workers interests. The same authors of "*The machine that changed the world*" point out that it is the cyclic nature of the Western economy and its effect on employment that prevents a stable cooperative relation between workers and employers from being reached.

A similar strategy of production is the 'diversified quality production' (DQP) proposed by Streeck (1991) and elaborated further by Regini (1995). The latter author refers to DQP as a strategy adopted by firms to compete on quality and price. They respond to the competition from low-wage economies orienting their products to higher market

[39] For a definition of practical knowledge see footnote 22 in Chapter Three.

segments and through customization[40]. Quality is achieved by significant organizational and coordination capacities: this implies high and broad skills of the whole workforce and its involvement in the firm constant tension towards improvement and incremental innovation. In this strategy social skills to be able to work with others as well as identification with the firm's objectives are crucial.

In this research it is interesting to note the modern tension towards a production of quantity, but with a concern about the quality, as a way both to cut costs (reducing waste) and to satisfy customers who now demand a higher quality standard of goods. To achieve quality in a quantitative production requires cooperation between managers and workers. Yet this cooperation is not easy to build and sustain, not only for the reasons mentioned by the authors quoted above, but also because of the increased role of shareholders and sometimes the lack of institutions and norms to countervail excessive market power (Wilkinson 2003, 29-33). I will return to this issue in my data analysis (Chapter Eight).

5.4.2.3 Outsourcing: modularity and collaborative practices

Towards the end of XXth Century, the practices of decentralized production through outsourcing and sub-contracting (tertiarization) became popular for different reasons, including the modest profitability of investments in the 1980s and 1990s and the growing need to integrate technologies in products without developing them and related competence in the original manufacture. The trend of concentrating on the core competence has brought about the development of networks of firms (Powell 1990; Castells 1996; Helper, MacDuffie et al. 2000; Sturgeon 2002; Whitford and Zeitlin 2002; Bonazzi and Negrelli 2003). There is a wide debate in administrative science, industrial economy, political economy and sociology of organization about the relations among the firms linked by the design and production of a product. Studies in these fields shift the focus from the internal structure of firms to the network among firms. At the same time, the standard definition of firm - based on the transaction cost economics and contract theory - is under question as new approaches emerge to interpret the new trends (Kogut and Zander 1996; Helper, MacDuffie et al. 2000; Baldwin 2007 for references).

[40] For a definition of what is customization and examples of firms adopting customization see Victor, B. and A. C. Boynton (1998). Invented here. Maximizing Your Organization's Internal Growth and Profitability. Boston, MA, Harvard Business School Press. It is a vision and approach from a consultant point of view.

Despite the diverse points of departure and methodologies, analysts agree about the openness of the networks of firms generated by the decentralized production and new characterization of the relations between the Original Equipment Manufacturers (Oem) and their suppliers (Powell 1990; Helper, MacDuffie et al. 2000; Sturgeon 2002; Whitford and Zeitlin 2003; Herrigel 2004). Debate is widespread and organized in many different threads, mainly with reference to the US case. What is relevant for this research is that the relationship between conception and execution emerges again (Herrigel 2004; Sabel 2004). Instead of finding such an issue in the interior of the firm, it is now located in the network of the firms. In the modular hypothesis, increased codification and standardization of designing modular parts of the final product, allows outsourcing of modules of production (Baldwin and Clark 2000; Sako and Murray 2000; Sturgeon 2002; Baldwin 2007), bringing about a separation between design and production. In the pragmatic collaborations hypothesis, conception and execution are fused in an institutionalized practice of learning by monitoring through which teams of workers from different firms deal with simultaneous engineering, benchmarking and control/correction of errors (Sabel 1994; Helper, MacDuffie et al. 2000). Firms are moved to pragmatic collaborations by high uncertainty and volatility of markets.

Industrial relations are experiencing significant change in decentralized production (Bonazzi and Pulignano 2002). Yet there are few sociological analyses of the effects of tertiarization on organizational structures and workers' behaviour (Bonazzi 2003). Work conditions can vary along the supply chain and depend on the aim of the outsourcing - cost reduction or search for specialized competence - as well as location in well developed countries or in less developed countries (Abreu, Beynon et al. 2000; Sako and Murray 2000; Sturgeon 2002; Whitford and Zeitlin 2002; Bonazzi 2003). When outsourcing implies modules of production working side by side and referring to different firms, work acquires a heavier bureaucratization dimension to control the transactions between teams (Bonazzi and Pulignano 2002; Bonazzi 2003). In less developed countries modularization of production is implemented with less emphasis on technologies and teamwork and more on the conceptual revolution of entrusting production to skilled workers and continuous vocational training (Abreu, Beynon et al. 2000). The production is organized on sub-assemblies in modules that are independent between them (Sako and Murray 2000).

I now come back to the principle of separation between conception and execution which, although applied in different ways, underpins the labour processes and work organizations of the strategies of production examined so far. The aim is to elaborate a theoretical understanding of the implications of this managerial principle for the motivational dimension of activity and subsequently for learning.

5.5 The separation between conception and execution: implications for the motivational dimension of learning

I will refer to Leontiev's perspective to argue that the managerial principle of separation between conception and execution has profound implications for the motivational aspect of activity and learning. I use his ideas to pull out the significance of this principle for engagement at work and vocational learning. This principle is relevant because it deters workers from learning what the object of the activity in which they are involved is, making sense of it, choosing whether to engage with it and learning what is necessary to carry out work tasks, and contributing to give shape to it. This can be particularly crucial in the case of strategies of production oriented to continuous innovation. I show how I reach this conclusion in what follows.

5.5.1 Conception of actions and execution of operations: coming in contact with the motive of the activity

My focus is on individuals' engagement with the object of activity rather than the expansion of the object. Therefore, although Engeström has made important developments about expansive learning and objects (section 5.2), I need to start again with Leontiev's distinction between actions and operations in his theory of activity presented in section 3.4, to theoretically elaborate the subjective relation with the object of the activity in the case of the industrial activities.

Let us begin by referring to the assembly line in the mass production, where workers repeat hundreds or even thousands of times a day the same operations lasting a few seconds (Como 2008). This case is helpful for its clarity, since in such a situation the separation between conception and execution can be at its highest level of application. Viewed from Leontiev's perspective, the act of execution of routinised operations corresponds to the operational level in the three-level structure of activity, when

operations are performed automatically, even if they still remain linked to the action, for operations constitute the method to carry it out (see section 3.4).

However in the case of assembly line the relation between operations and actions is different from that of the driver shifting gears used by Leontiev to illustrate the relation between action and operations (see section 3.4.2), because these two levels of the activity (operations and actions) are performed by different subjects. This is due to the internal division of labour of the work organization, which has separated the theoretical and practical activities, that is, the conception and execution, or thinking and doing. Yet these are inseparable, as pointed out by Leontiev, because historically, thoughts are linked to practice, and language and vocal acts have been developed to plan and organize practical activities in order to satisfy needs (1981, 251).

In other words, in Leontiev's view, operations refer to acting according to some pre-established methods, developed and internalized earlier through carrying out conscious actions. Actions are aroused by the motive of the activity and directed towards a goal. When actions become automatic, that is, operations emerge, then inner psychic processes related to the working activity are reduced to the minimum and previous goals can disappear, leaving room for other goals (see section 3.4.3). Operations become conditions for performing other actions.

The case of workers working at an assembly line and repeating thousands of times the same operations presents a different situation. In this case operations have been developed by someone else, typically the managers of the engineering and production departments, with the support of time and motion studies. Actions and operations are disjoined, as well as thinking and doing: managers do not carry out the actions whose operations they have designed, and workers just do operations without having been the subjects of the whole action whose operations are conditions[41].

[41] Of course, this issue is relevant not only for workers and managers, but also for employers and shareholders, who care about identifying objects of businesses, and may be less interested in the practical aspects of these. In the case of shareholders the intrinsic meanings of the motives/objects of the businesses are even fading away, while financial motives arise, increasing the level of estrangement with the motives giving shape to the object(s) of an activity. I am aware of the complexity of this issue and the contradictions in the capitalistic organization of activities. For analytical reasons, this research is bounded to the case of the relation between workers' personal senses and social meanings of industrial activities and its implications for vocational learning. However, capitalistic contradictions surface in this research and are considered as elements in the material interactions in the workplaces.

What are the theoretical implications of this separation between actions and operations, that is, between thinking and doing, for the workers' personal sense of participating in an activity?

We have to remember here how the concept of object/motive is crucial in Leontiev's framework. The human psychic development exists phylogenetically and ontogenetically in the transformative connections with the development of object-oriented activities in which subjects are involved to satisfy their cultural and historical needs (see Chapter Three). So if one experiences "an interest, a desire, a passion", it means that that person finds the actions in that activity significant for her or his life and can give to those actions personal sense (Leontiev 1978, 91). Leontiev highlights the role of motive in connecting actions in a collective activity and providing meaning to individuals participating in that activity.

The fact that workers can only carry out operations means that their operations are conditions of other colleagues' actions (sales department, strategies developed by the top management, etc.) and they have fewer opportunities to come in contact with the motive of the activity through planning the actions according to the motive of the activity. However, it is also possible for each worker to recognize that her own operation can be linked to other colleagues' operations and actions, and all operations can be conditions to support another colleague's action. But it is difficult to imagine that a worker can feel interest, passion and desire in carrying out routinised operations such as on the assembly line and make personal sense related to the objective meaning of those operations.

Therefore, a question emerges: is it enough to be in charge of carrying out operations to come in contact with the motive of the activity? In other words, how does a personal sense of that activity develop in this case?

This leads to the issue of the existence of different strategies of production and their tendentially different degrees of application of the principle of separation between conception and execution, as discussed in the previous sections.

I come back to this in section 5.6 to offer a typology of strategies of production and then in my empirical work, but before that, in order to frame the latter, I want to discuss further the distinction between social meanings and personal senses of motives

proposed by Leontiev, introduced in section 3.4, and here applied to the case of contemporary industrial activity to put forward a new theoretical approach to analyse and interpret the subjective dimension in the vocational learning of older workers.

5.5.2 Personal senses, engagement and learning

Workers have an image of the object of the activity in which they act. What is interesting is to consider that this imaged object has a social meaning, that is, the meaning socially recognized to the activity for which they work. Of course, as pointed out by Leontiev, this social meaning does not necessarily coincide with the personal sense that the worker has developed in her life about that object of activity. As I said in section 3.4, people internalize social meanings, but in the subjective moment of the internalization (Stetsenko 2005, 84) they attribute to these their personal senses according to the relevance that these social meanings have in their circumstances of life.

For example: a worker on the shop floor of an arms production factory knows the object of the activity in which she works as being the production of arms. Yet we know that the object is slightly different. Let us suppose it is producing arms to be sold in poor areas in the world where there are no standards to be respected regarding the quality of the arms. So the object of the activity could also be formulated as “production of arms with a market strategy oriented to low quality”. On the basis of the discussion in the previous sections, this object tends to develop a Tayloristic style of management and organization of work. Hence this worker is likely to carry out operations without been involved in exchanges of knowledge and information. Therefore she has few opportunities to learn what the object of her enterprise precisely is. However she knows enough of the object to say that, from her point of view, the production of arms is not a good thing for the world. This belief can come from her life circumstances which include her relevant involvement in care activity for her family and community. The motive of this (caring about others) has been internalized as a significant motive in her hierarchy of personal senses of motives (section 3.5). Yet she is surrounded by social meanings embedded in the existence of the arms production itself (see section 3.4) that express positive evaluation about producing arms. As I explain in section 3.4.1, according to Leontiev, the relation between personal sense and social meaning (that is, consciousness) can explain the engagement in objective activity. In the case of the worker in the example, we could foresee her limited engagement in the workplace and,

as a consequence, also her low interest in vocational and workplace learning. She might be even more disengaged if she knew more details about the object of the industrial activity in which she works. She could learn more about the object of this activity if she was in a higher position in the hierarchical organization or if the management style were oriented to participative models of work on the shop-floor, that is, where workers are involved in contributing to enhance working practices.

I adopt this theoretical framework to analyse and interpret the engagement[42] of workers in their tasks, that is, the relevance of the relation between conception and execution to create the conditions for the workers (and the personnel in general) to come to know the object of their activity, make sense of it, and feel engaged in their work tasks. In other words, only in carrying out actions doing and thinking (conception and execution) are reunified and access to the object/motive of the activity occurs (because actions are aroused by the motive/object of the activity). This allows the worker to recognize and develop a subjective relationship with the motive/object of the industrial activity in which she works. I depict this relationship - which is the presupposition for engagement – in the Figure 5.1, similar to Figure 3.1. In this Figure I have added two bidirectional arrows to represent the personal and subjective relationships of two workers with the object/motive of the activity in which they are involved. These arrows pass across actions in the Figure to indicate that with an involvement in actions, workers have more opportunities to develop themselves and contribute to the development of the workplace.

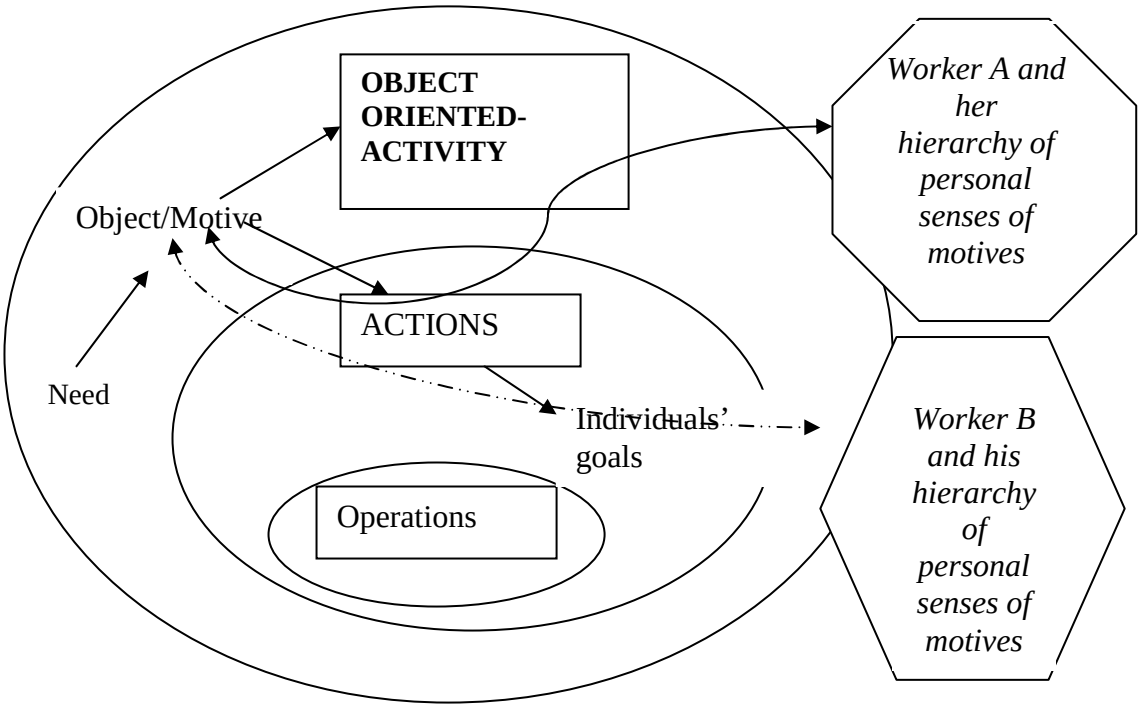
Before moving on, I want to clarify my position with respect to that of Leontiev about the issue of the property of means of production by the employers. Leontiev refers to this as an obstacle to making sense of the activity in which workers work. My position is that this is less of an impediment to develop a positive relation between the personal sense and the social meaning of an activity than the principle of separation between conception and execution. The latter has implications for coming in contact with the motive of the activity and making sense of it, while the property of means of production seems to me less necessary, especially when technological tools of work can be costly. I agree with Leontiev that the structure of the consciousness reflects the relation with the

[42] The concept of engagement is introduced in Chapter Three, section 3.5, when I discuss the subjective pole of activity, that is, the conceptualization of self and personality in CHAT. The self is the ways in which persons engage with the social world. In the conclusion of Chapter Three I write that the engagement depends on the position in the activity. Here I develop that idea elaborating on the connection between the managerial principle of separation between conception and execution and the self.

features of activities (1981, 244), and the property of the tools of work can be important, but it is also possible to image an implicit agreement of using tools owned by others (employers, shareholders) as long as there is a shared meanings about the motive/object of the activity[43].

In conclusion, in this CHAT-influenced perspective, carrying out actions is relevant for the development of a personal sense of the motive of the activity. The engagement in the activity depends on this personal sense and how this relates to the social meaning of that activity.

Figure 5.1 – Diagram of the association of motives and personal senses of motives as the presupposition for engagement in collective activity



Note: workers' engagement occurs along the lines connecting the activity motive to the hierarchy of personal senses of motives, through the actions, where doing and thinking are conjoined.

To sum up, when we deal with motives and personal senses for learning in the case of workers on the shop floor, we need to take into account the position of workers in the activity, namely to what extent the methods employed to carry out tasks in workplaces

[43] Clearly this can be a problem in profit oriented activities as in the capitalistic system, but maybe less when these are carried out with ecological and social responsibility.

are conceived by people other than the workers on the shop floor. The previous discussion indicates that from a CHAT theoretical point of view the separation between conception and execution has implications for the development of workers' personal senses.

Of course, personal senses do not necessarily develop in coherence with the social meanings of the activity, as in the example used in this section, in which the worker's hierarchy of personal senses of motives (her subjectivity) excludes the sense of producing arms. As argued in section 3.5, subjectivity is the product of ontogenetic cultural development occurred through participating in different activities and social practices, in which persons build their own hierarchy of motives and personal senses. Hence any new motive enters a previous subjective formation and, even if the latter is always in transformation, we can image that it represents a point of reference in the creation of the personal sense of the new motive (e.g., producing arms).

What I want to point out is that making sense of the motive for the activity in which the subject takes part is crucial for the engagement in that activity.

We can image that the higher the association between personal senses and social meanings of the motive of the industrial activity, the more significant can be the engagement in the working practices. Conversely, poor association or estrangement between personal senses and social meanings of the motive of the industrial activity bring about a loss of engagement. Engagement in working practices is relevant because, as I explain in sections 3.4 and 3.4.1, needs emerge in activities. The development of learning needs depends on the engagement in working practices. Only if there are learning needs, can we expect that these needs can meet the objects to satisfy them, objects which will become motives for learning[44].

5.6 Strategies of production and separation between conception and execution: a typology

Having presented the most significant strategies of production discussed in literature, and discussed the implications of the managerial principle of separation between conception and execution for the motivational aspects of working and learning, I will now schematize the relation between the strategies of production and this principle as it

[44] The relation between need, object and motive is discussed in section 3.4.

has emerged in the previous discussion and with reference to CHAT. This serves the goal of framing the selection of case studies (Chapter Seven) and providing the necessary ground to interpret in a comparative way the relation between strategies of production and motivational aspects of learning.

Table 5.1 is organized adopting the relation between execution and conception in the work practices on the shop floor as the organizational principle crucial in determining opportunities for engagement and learning. This relation - surfaced in the literature review - divides the strategies of production in two groups. Process enhancement, pragmatic collaborations in decentralized production, flexible specialization, and craft form the first group of the strategies of production where workplace organization has moments of conjunction between execution and conception (Type 1). In this ideal type, workers on the shop floor are asked to monitor and reflect on work practices and some feedback from them can modify the labour process. The degree of involvement of workers can vary across these strategies of production and their applications. I have already noticed that the involvement of workers in lean production can change according to cultural and institutional contexts. However, from CHAT, these strategies of production have the potential for being more favourable to create opportunities to develop engagement, and needs and motives for learning.

In other strategies of production – mass production, flexible mass production, and modular systems - workplace organization on the shop floor only requires the execution of tasks and therefore tends to imply a lower level of engagement of workers in the labour process (Type 2). Again, the involvement of workers can vary across these strategies of production, yet they are expected to be less favourable to develop engagement, and needs and motives for learning.

Table 5.1 – Typology of strategies of production based on the relation between execution and conception (the sign & stands for conjunction and the sign # stands for separation)

Strategies of production	*Relation between conception and execution*	*Typology*
Craft Flexible specialization Pragmatic collaborations Process enhancement	Conception&Execution	Type 1 (more potentially engaging tasks)
Mass production Flexible mass production Modular systems	Conception#Execution	Type 2 (less potentially engaging tasks)

Before moving to the empirical work on the connections between strategies of production and learning in the case of older workers, it is useful to point out how the literature usually relates the strategies of production to vocational education and learning.

5.7 Strategies of production and vocational education

Among the authors quoted in the previous discussion on strategies of production, few are interested in the relation between these and learning. When they are interested in this relation, they focus on aggregated behaviours. They focus on economic production as the necessary premise to talk about vocational education, but they show less interest in how learning needs and motives arise in the working activities. Indeed, they tend to

consider needs as emerging at the enterprise's level, as the outcome of awareness among the managerial level.

For example the reflections of Keep and Mayhew (1999), from a political economy and sociological approach, focus on what type of strategy of production is characteristic of the UK and therefore what are the skills needed. Their concern is that most work organizations in the industrial and service sectors could be Fordist and Taylorist and hence require low investment in training. They claim that UK VET policies should appreciate that skills are third-order issues for firms and confront questions such as choice of product market and competitive strategy, which indeed are first-order issues, as well as work organization and job design. They invoke consideration of skills issues in a far more complex backcloth than usual in the field of vocational education. Yet they tend to focus on skills demand and neglect the link between these and how skills develop, that is the need to consider the motivational aspect of learning for the employees.

Recently, Keep has shown an interest in how learning occurs. Yet he fails to notice that different learning environments can depend on different strategies of production (Keep 2008).

Regini also focuses on aggregated behaviours such as those of firms and educational systems (1995). He stresses the relation between strategies of production and the utilization of human resources and points out how the different training systems in Europe combine with the strategies of production characterizing the various European regions and countries. He discusses the relation between strategies of production and training systems in terms of supply and demand of skills. The demand of skills is seen as stemming from the needs of the firms. This, coupled with the conceptualization of employees and workers as human resources to be utilized, overlooks the need for an approach that takes into account the role played by workplaces, namely how these interplay with the subjectivities of workers in the formation of motives for working and learning.

I interpret the lack of concern about the engagement of employees as originating in the underpinning conceptualization of the individuals in the theoretical model based on supply and demand. The latter stems from the economic discipline and was introduced by Alfred Marshall in 1890 (Marshall 1961 [1890]) to investigate the formation of

prices in the markets. This model assumes individuals as guided by the self-interest and assessment of costs and benefits, thus responding to incentives. The individuals' development is seen as separated by the development of the activities in which they are involved[45].

My research considers the strategies of production and the ensuing workplace organizations to be crucial for the issue of the subjective side of the persons engaged in the economic enterprise. In particular, my interest is in the development of motives for working and learning adopting a conceptualization of subjectivity and consciousness grounded in collective transformative material activities (see Chapter Three).

I now turn to the literature on learning at work to obtain insights to guide my empirical work.

5.8 Concluding remarks

Because in a CHAT influenced perspective learning is an aspect of any collective and object-oriented activity, preliminary to the investigation of the engagement of older workers in vocational learning it is necessary to build a theoretical framework about the different types of industrial activities in which older workers participate. In this chapter, I introduce the concept of strategies of production as referring to the objects of industrial activities. I then review the sociological literature to find ideas about the different strategies of production models today in use in the capitalist western countries. The father of all the current strategies of production is the mass production from which all the other strategies have inherited the managerial principle of separation between conception and execution. From CHAT, I elaborate the implications of this principle for the development of motives for engaging with working and learning. Since this principle is pivotal in analyzing the workers' subjective relation with their job and learning, I put forward a typology of strategies of production on the basis of the degrees of separation between conception and execution. This typology guides the choice of case studies in my empirical work (Chapter Seven). Before moving to the aforementioned, I devote the next chapter to the critical review of the literature on

[45] European Union and CEDEFOP have adopted the model of supply and demand of skills to elaborate forecast: CEDEFOP (2010). Skills supply and demand in Europe: medium-term forecast up to 2020. Thessaloniki, Cedefop. This model is based on the idea that individuals' development is separated by the development of the activities in which they are involved and fits with the cognitivist perspective (see section 3.2).

workplace learning and subjectivity to refine my CHAT influenced perspective on this issue.

6 Workplace learning, older workers and subjectivity

6.1 Introduction

In Chapter Five I have explored the various strategies of industrial production as the objects of industrial activities (section 5.4) with which workers develop subjective relationships, presupposition for engagement or estrangement (section 5.5). The circumstances for the development of this personal relationship are both the degree of conjunction between doing and thinking in the working practices and the hierarchy of motives of the self (see Figure 5.1 in Chapter Five). The first represents the conditions of autonomy through which the workers come to know the object of their activity, make sense of it, and feel engaged in their work tasks. The second is the space in which the sense making occurring at work finds resonance with the already developed personal senses of motives which constitutes the self.

Although I have already elaborated my theoretical framework to analyse and interpret older workers' engagement with working and learning in Chapter Five, the discussion of the literature on workplace learning from the situated and participative perspectives and on engagement at work in CHAT framed studies provides further opportunities to clarify and integrate my approach. I devote this chapter to this task.

Since the work of Lave and Wenger (Lave and Wenger 1991; Wenger 1998), there has been a growing interest in learning at work and workplace learning[46] (Evans, Hodkinson et al. 2002). The study conducted by Lave and Wenger (1991) is considered to be a milestone in the literature on learning at work from a social practice perspective[47]. They point out the relevance of situated learning in the transition of newcomers to become expert workers in communities of practices. This transition occurs through legitimate peripheral participation, where appropriation of skill and knowledge takes place. Yet

[46] Learning at work has become a term which mainly refers to learning in the workplace, while for some authors workplace learning includes learning in, through and for the workplace. See Evans, K., P. Hodkinson, et al. (2006). Improving Workplace Learning. London and New York, Routledge., 9-10.

[47] I take the work of Lave and Wenger as the starting point in my literature review even if the earliest theorising of workplace learning can be dated back to the 1970s at least, as argued by Hager who discusses the works of Argyris, Schön, Marsick and Watkins (Hager, P. (2005). Current theories of workplace learning: a critical assessment International handbook of educational policy. N. Bascia, A. Cumming, A. Datnow, K. Leithwood and D. W. Livingstone. Dordrecht, Springer: 829-846.). Yet these works have features which make them less relevant to this research which draws on a CHAT conceptualization of learning (Cfr. ibid., 832-833). For the same reason I do not discuss the works of Huys, R. and G. van Hootegem (2002). A Delayed Transformation? Changes in the Division of Labour and Their Implications for Learning Opportunities. Work Process Knowledge. N. Boreham, R. Samurcay and M. Fischer. London, Kogan Page.

Lave's and Wenger's study was based on observations of apprenticeships in types of situations rather different from the one represented by the workplaces in the industrial sectors (Yucatec midwives, Vai and Gola tailors, US Navy quartermasters, meat-cutters, and non-drinking alcoholics in Alcoholics Anonymous). Other authors have extended and developed the situated approach to analyse workplace learning in western standard economic activities of production of goods and delivery of services (Fuller and Unwin 2003; Fuller and Unwin 2004; Fuller and Unwin 2006; Felstead, Fuller et al. 2009) [48]. I present their works in section 6.2.

Some scholars notice the lack of consideration on the personal side in workplace learning and claim the importance of considering this aspect without losing sight of the wider social context (Hodkinson and Hodkinson 2003; Hodkinson and Hodkinson 2004). As I discuss in section 6.3, the relation between individuals and contexts in the situated perspective is interpreted through adopting ideas from other theoretical approaches, namely Bourdieu's concept of dispositions. I will argue that this concept, as applied in Hodkinson's and Hodkinson's works, appears to be too narrow to explain the learning activity. I will use their case study to show that the interpretation is richer when we take into account the object of activity and the subjective relation with the latter.

I then move to studies on workplaces framed by CHAT and dealing with engagement (or resistance) at work. In CHAT, engagement is seen as the manifestation of the self in carrying out activities and the self is a hierarchy of personal senses of collective motives (section 3.5); it is in this subjective dimension of activity that I am interested in the studies I am going to discuss in section 6.4.

There is a growing number of studies in CHAT about workplaces and the development of activities. The focus is more often on the development of activities than on learning. This stems from the theoretical approach which – as discussed in Chapter Three – considers learning as an aspect of any activity. Hence examining the development of activity includes the aspect of learning, embedded in the development of knowledge or new practices (transformative learning).

[48] I am aware that there is a fundamental difference between the situated learning approach, as developed by Lave and Wenger (1991) and my CHAT influenced perspective: the former plays down the validity of the distinction between scientific and everyday concepts, while the second draws on the conception of the relation between practice and theory developed by Vygotsky (Guile, D. (2006). "Learning across contexts." Educational Philosophy and Theory 38(3): 251-268., 254-255). See note 22 in Chapter Three.

Some of these CHAT works interpret the subjectivity with the conceptual tools provided by Leontiev such as hierarchy of motives and personal senses of motives. In some other studies subjectivity is intended in its social identity aspects (Lee, Roth et al. 2003; Miettinen 2005) and as being derived from the emotional dimension (Roth 2007). In this chapter, for the purpose of the research, I only discuss the CHAT works which adopt the concept of motive and personal sense as a way of exploring engagement or resistance at work, in accordance with the framework built in Chapters Three and Five.

Although in this literature different ways of interpreting and using the concept of object of activity and motive emerge, I find interesting the increasing attention to the affective, expressive, and emotional aspect in working activities that these studies witness. This aspect draws up the issue of subjectivity, but still it does not represent subjectivity. More importantly, there are no CHAT studies which compare activities to investigate how different objects of activity are in relation to the engagement of the personnel.

I conclude the chapter pointing out the need to study subjectivity in workplace learning by comparing different strategies of production (i.e., objects of activity) to highlight the collective and material side of the issue of engagement and learning for older workers. As already stated in the previous chapters, I want to investigate the context of the industrial activities in particular.

There are few learning studies on older workers from these theoretical perspectives and therefore in the following sections I mainly refer to works that deal with workers' workplace learning in general. The specificity of being older will be highlighted in the analysis of the case studies (Chapters Eight and Nine).

6.2 Learning processes and work environments

In the perspective of situated learning, Fuller and Unwin have developed a framework to analyse different learning environments in workplaces. First they built it with reference to apprenticeship, seen as a model of learning throughout history (Fuller and Unwin 1998), and then they extended it to the development of the whole workforce. They point out that Lave&Wenger's work has to be expanded to take into account the complexity of the industrial and commercial settings, in which different degrees of participation can be recognized (Fuller and Unwin 2003, 410). Fuller and Unwin propose to analyse the variety of settings through the expansive-restrictive continuum of

approaches to apprenticeship programmes. Expansive approaches are identified on the basis of Wenger's ideas on 'work of imagination', which entails processes that open up "opportunities for learning through moving beyond a tightly bounded approach to participation ..." (ibid., 412).

The attributes of the expansive approaches refer to multiple communities, sharing memories, access to qualifications, time off-the-job, individual support, favourable conditions for developing extended identity, production of documents and tools (reification)[49].

They examine apprenticeship in three companies that are quite different in terms of strategies of production[50] in the steel market. Through their case studies they found different qualities of participation, with regard to scope, length and aim. They explain these with reference to the learning culture of the firms.

Fuller and Unwin have then extended the expansive-restrictive continuum framework to the workforce development (Fuller and Unwin 2004; Fuller and Unwin 2005; Fuller and Unwin 2006). They share with other scholars an inclusive conceptualization of learning at work: learning can be both formalized and intentional as well as incidental (Marsick and Watkins 1990), and occurs in formal settings as well as in workplaces and in the home. Moreover the former form of learning is not superior to the latter (Eraut, Alderton et al. 2000; Billett 2001). They also agree with Darrah in pointing out that experiences in workplaces are shaped by the work organization and technologies used, and represent a powerful hidden curriculum (Darrah 1996).

Fuller and Unwin highlight three limits in the situated learning theory of Lave and Wenger:

- it deals with newcomers learning only. Conversely, Fuller and Unwin's aim is to expand their framework to include the whole workforce. This means that some issues become more central: the labour relations, worker's status, and

[49] Wenger stresses the relevance of reification as a complementary element of participation. With reification we project meanings in the world which take forms and lives of their own. As I interpret Wenger, we use reification, as documents and tools, to secure some continuity of meaning across time and space Wenger, E. (1998). Communities of Practice. Learning, meaning and identity. Cambridge, Cambridge University Press..

[50] The concept of strategy of production is introduced in section 5.3.

possibility of working as isolated from a community of practice (Fuller and Unwin 2006, 41).

- The situated learning theory does not put enough emphasis on how organizational factors such as structure, culture, and history relate with workplace learning (Fuller and Unwin 2005).
- Conceiving all learning as situated and highly context-dependent can be used to confine workers to their workplace and limit their opportunities to cross participation boundaries to gain a new perspective[51] (Fuller and Unwin 2005, 26). It can also suppress the chance to cope with changes in work organization and production whereas more structured teaching and learning can support the advancement of workers' knowledge and skills (Fuller and Unwin 1998, 160-161).

With respect to the relation between individuals and contexts, Fuller and Unwin agree with Billett (2004) and take the position that contexts structure the opportunities for learning and individuals as active agents "can elect the extent to which they engage in the situations open to them." (2005, 26 and 42). Individual factors such as "socioeconomic and educational background, attitudes to work and learning, and aspirations" play a role in making employees experiencing the same learning environment differently (Fuller and Unwin 2006, 39). They also introduce the metaphor of "learning territory" as a way of referring to the fact that every individual has a unique pattern of learning experiences according to the opportunities they have had. This metaphor aims at taking into account that the individual's attitude towards opportunities for learning at work is influenced by their past learning experiences. Through this metaphor the authors hope to overcome the risk of overemphasis on either the structural features of the context or the individual agency (2006, 42)[52].

[51] In my opinion the risk of bounded learning is not intrinsic to situated learning. Lave and Wenger acknowledge the historical development of activities: "[i]n a theory of practice, cognition and communication in, and with, the social world are situated in the historical development of ongoing activity." (Lave, J. and E. Wenger (1991). Situated learning. Legitimate peripheral participation. Cambridge, Cambridge University Press., 51). This implies that if we look at organizations as historical constructions subject to continuous changes, situated learning can be seen as the process through which changes are generated. However I appreciate that historical aspects are not central in Lave and Wenger's work.

[52] Clearly the issue of the relation between structure and agency and the attempt at dealing with the separation between these aspects of human actions are at stake here. These are typical sociocultural

In the case of the workforce's development, the expansive-restrictive continuum includes all of the attributes identified for apprenticeship[53], adapted to the case of employees, and new ones (Fuller and Unwin 2006). The latter are: type of distribution of skills (wide/polarized); appreciation of technical skills, team work and communication; managers as facilitators vs. controllers; more or less opportunity to learn new skills; importance of innovation; multidimensional/unidimensional view of expertise.

As pointed out by the authors, the concept of expertise as multidimensional was proposed by Engeström and colleagues (1995) to contrast "the conventional vertical view of expertise as top-down [where] knowledge resides in the experts who can (elect) to transfer it to "novices"." (Fuller and Unwin 2006, 43). Fuller and Unwin support the idea of "an expansive view of expertise [that] entails the creation of environments that allow for substantial horizontal, cross-boundary activity, dialogue, and problem-solving." (2006, 43).

The authors highlight the link between this view of expertise and work organization and job design:

> "In terms of the expansive-restrictive framework, it follows that there is overlap and interrelation between the view of expertise adopted and existing organizational factors, such as the way work is organized and job designed. (...) We would argue that in order to be consistent, an approach to workforce development that incorporates a multidimensional view of expertise should also adopt an expansive approach to work organization and job design."
>
> (Fuller and Unwin 2006, 43)

As the above quotation shows, Fuller and Unwin consider work organization/job design as elements that stem from approach to workforce development. This is relevant with respect to the perspective I develop on the relation between strategy of production and market, job design and work organization in Chapter Five. Recently, Fuller and Unwin with Felstead and Jewson, have extended their interests to include a focus on wider forces of regulation influencing work organizations and learning environments (Felstead, Fuller et al. 2009, 7). I discuss their approach in next section to compare it with mine.

---

concerns that the authors try to solve by introducing the metaphor of "learning territory". Also the reference to the concept of disposition can be a way of responding to those concerns. Yet it is not clear whether the authors refer to Bourdieu's concept of disposition (6.3).

[53] From the list of attributes of the expansive-restrictive continuum of apprenticeship approaches only one attribute is not included. It is the one about the aim of apprenticeship: being to develop a rounded or partial expert.

6.2.1 Workplace learning and production systems

Adopting the conceptualization of Wilkinson (1983), Felstead and colleagues have enlarged further their studies on workplace learning and explored issues related to production systems and stages of production (2009). On the basis of this extension, they have developed the Working as Learning Framework (WALF) as a "model [that] specifies the links between the broadest system of relationships that shape employment relations and the nature of workplace learning." (ibid., 13). The concept of productive systems has been introduced by Wilkinson, in line with the spirit of continental traditions such as the French *Régulation School*, to highlight that economic systems are shaped not only by economic forces, but also by political and social forces (1983). Wilkinson is interested in highlighting the power relations within and between productive systems and how these relations interact with the social and political systems. Wilkinson and colleagues have also focused on work organizations, interpreting this as the historical outcome of theories and practices of management to face the technological and markets changes (Deakin and Wilkinson 1996; Birecree, Konzelmann et al. 1997; Wilkinson 2003).

Felstead and colleagues have adopted both these concepts - productive system and work organization - to analyse a significant number of different businesses. Regarding work organization, they adopt the concept of discretion and autonomy to depict the position of the workers in it. The authors distinguish three forms of discretion: discretion in the conception of work, in the execution of work, in the evaluation of work. Discretion is presented as linked to the relationship of trust between managers and workers:

> "The exercise of discretion, in all its forms, introduces potential uncertainty, indeterminacy and risk into the work process. Managers seek assurance that workers will make use of the autonomy that discretion brings in ways which enhance productivity. Workers wish to be reassured that the exercise of discretion in good faith will not be penalized or rescinded. Such uncertainties may be contained and defused within relationships of 'trust' (Fox 1974) between managers and workers that legitimize and specify the exercise of discretion."
>
> (Felstead, Fuller et al. 2009, 24)

Festead and colleagues consider trust as the unique 'glue' in the "complexity and indeterminacy of productive systems" which needs to be regulated by the managers'

strategies and tactics:

> "As a result of the complexity and indeterminacy of productive systems, relations of trust in the workplace and the exercise of discretion by employees all generate (greater or lesser) levels of uncertainty and unpredictability for managers. Managers respond with strategies and tactics that are a mixture of deliberate, purposive plans and unexamined assumptions and practices."
>
> (2009, 26)

Beside the problem of considering employees a cause of uncertainty, this view glosses over the role of the object of activity and the possible interest, passion and desire of workers to work on this. It takes the stance that managers have to extract the ability to work from the workers. This certainly occurs because current organizations still feel the effect of the original form of the Taylorist-Fordist industrial organization from which they stem, and tend to reproduce the basic element of the latter (Chapter Five). Yet there are changes in the work world discussed in Chapter Five which allow us to think that different ways of organizing work activities are emerging. We need new theoretical perspectives to read these changes. As argued in Chapter Five, I propose to adopt the idea of Leontiev, extended by Engeström to organizations, and use the concept of object of the activity as the motive which can create connections among people to work together. Here, I remind the reader that I adopt the concept of strategy of production to grasp the object of an industrial activity (see section 5.3) and thus pave the way to analyse this as a collective activity in which everybody participates through their subjectivities (section 5.5). This is relevant for the purpose of this research dedicated to the issue of motives for learning at work.

Before closing the examination of the work of Fuller, Unwin and their colleagues, I want to mention a contribution from Fuller and Unwin on older workers and learning, for it is probably the only work on this issue from a situated perspective. It adopts the concept of individual disposition and prior status to interpret the workers' involvement or resistance towards workplace learning. Their contribution on this issue introduces the discussion of a number of studies about the subjective dimension of workplace learning.

6.2.2 Workplace learning and experienced workers

Fuller and Unwin have focused on older workers using case studies of two companies, A and B (Fuller and Unwin 2005). Company A designs and manufactures bathroom showers, thermostats and valves and its strategies are quality and competitiveness. Company B manufactures steel rods and bars for the construction industry and, at the

time of the research, was struggling under price competition from ‘cheap imports’. The authors have found older workers to be generally interested in learning, especially when this aims at helping them to do their jobs better or easily. Yet they have also noticed negative attitudes towards organizational changes leading to more opportunities for learning at work (for instance through broader definition of tasks and job rotation). They interpret the different perceptions of the new ways of working among older workers as being related to individual dispositions and prior status (Fuller and Unwin 2005, 34).

In conclusion, on closer inspection I can see that although the expansive-restrictive framework, and then the WALF discussed in the previous sub-section, allow Fuller and Unwin, and their co-authors Felstead and Jewson, to raise interesting questions about the role of learning culture, history and the structure of the firms (2009), and workplace learning in relation to one another, it does not offer a way to address my interest in the relation between strategies of production, the subjectivities of workers and workplace learning. As shown by the interpretation of the different engagement of older workers with the new form of working, Fuller and Unwin tend to explain it through reference to individual dispositions and prior position in the system of relations of production. They refer to the concept of disposition in other more recent works (Kakavelakis, Felstead et al. 2008; Fuller and Unwin 2011). Yet referring to individual dispositions, prior status, and the metaphor of “learning territory” (Fuller and Unwin 2011, 52-53) emphasises the past experiences and tends to neglect the current activities and the personal senses that the workers give to these.

I now move to discuss Hodkinson’s and Hodkinson’s work, which is a reference in the studies of Fuller and Unwin. They also consider learning from a participatory perspective - as the one developed by Lave and Wenger (1991) and Engeström (1999; 2001) - and address subjectivity as a neglected dimension in the latter. In the next section I present Hodkinson’s and Hodkinson’s way of integrating subjectivity in analysing workplace learning. They adopt the concept of disposition by referring it to the work of Bourdieu. I will argue that these authors, despite their interest in the characteristics of workplace and the wider context, fail to fully consider these in exploring the individual aspects in workplace learning. A careful analysis of their interpretation of the latter shows a focus on learning processes and learning dispositions

and a lack of consideration for the interest and passion in the work by the teacher under examination.

6.3 Workplace learning and dispositions to learn

Hodkinson and Hodkinson (2003) deem that participatory perspectives on workplace learning such as that adopted by Billett (2001) needs to further develop to take into account the relation between individual and social structures. They point out that Billett does not explore in detail biographies and identities and their contributions to the interdependencies with workplaces:

"... Billett (2001a, p. 20) focuses upon "those factors within work practice that either facilitate or constrain individuals' participation in work and consequently their learning". He does not explore in detail the ways in which already developed and developing worker biographies contribute to both their affordances and interdependencies."

(2003, 5)

They criticise Billett's frame because it separates social structure from the individual, and sees these as interacting entities:

"... Billett implies that there are two separate entities, "mind" and "social world", that are logically separate but interrelated. Other thinkers argue that the mind is not separable from the body, and that thinking and learning, judgement [sic] making, are embodied (Beckett & Hager, 2002). It is, therefore, not the mind that interrelates with the social world, but the whole person."

(Hodkinson and Hodkinson 2003, 4)

Hodkinson and Hodkinson think that also Engeström's frame is not adapted to analyse the place of individual in activities because it sees the subject as subsumed in the social. This is the limit of the approach of Lave and Wenger too (1991). According to the authors, both Engeström's and Lave's and Wenger's work tend to see learning as a subconscious process (ibid., 4).

On the basis of the work of Phil Hodkinson with Bloomer, Hodkinson and Hodkinson adopt Bourdieu's concept of habitus to draw on an integrated vision of individuals and social structures and to highlight the individual aspects in workplace learning:

"Following Bourdieu and others, we see the individual and social structures as integrated, not separate. But people *are* separate from their place of work, as well as being integrated into it. This is because they have lives outside work, and because their biographies pre-date participation in their current workplace (Hodkinson & Bloomer, 2002). They can and do step outside the workplace, but cannot step outside social structures that are a part of their habitus and identity. They are thus both part of and separate from the workplace community. There is a need to further develop participatory perspectives on learning to accommodate this crucial conjunction. A crucial step in doing this is to pay attention to the dispositions of workers/learners, together with the ways in which social structures penetrate those dispositions and the

activity systems or communities of practice of which the workers are part.

(Hodkinson and Hodkinson 2003, 5-6)

In order to explore workplace learning in its wider interrelationships with the community of practice, the learner dispositions to learning and other influences from the context, these authors use a case study on teachers' learning at work in four different subject departments in two secondary schools in the UK (2003; 2004). They use, in particular, the story of Mary, head of an art department, to explore those interrelationships.

They stress the importance of Mary's biography in shaping her habitus[54]. Mary has always been interested in art and she was a budding artist. However the social pressure on her at the time when she was a pupil resulted in her training as a teacher. Now she carries out her job with a deep interest in art – her subject -, and concern about the pupils' development. These are – according the authors - her driving force and motivation:

"Like most of the other teachers in our study, she is motivated primarily by a deep interest in her subject, paralleled by a concern that pupils should achieve and learn."

(Hodkinson and Hodkinson 2003, 7)

However this motivational aspect –her deep interest in teaching her subject - is not further discussed in relation to Mary's learning. When the authors analyse Mary's learning, they focus on how she learns and thus glosses over that deep interest in teaching art to the pupils, which is the object of the activity of the school too.

They identify two types of learning: self-initiated learning and learning as a consequence of pressure from outside (typically a new requirement from the national educational system). They link these two types of learning to Mary's developing habitus, identity, position in the field, and previous experiences:

"These two linked approaches to learning are, as we have seen, related to her developing habitus, and have been influenced by broader aspects of her identity and position in the field, including her gender and her "aspiring working class" origins. They were also influenced by her early experiences of teaching in the 1970s, and the three extended educational courses that she had undertaken."

(Hodkinson and Hodkinson 2003, 9)

Namely the authors see Mary's intense learning as related to her disposition towards

[54] I will use habitus and dispositions as interchangeable, for habitus is a set of dispositions, see Bourdieu, P. and L. J. D. Wacquant (1992). An Invitation To Reflexive Sociology. Cambridge, Polity Press., 11.

creativity:

"[…] almost all of her learning is a search for the new and improved, not particularly because she lives in a rapidly changing world and educational context, but because this is central to her creativity."

(Hodkinson and Hodkinson 2003, 9)

The authors provide an effective analysis on how Mary is driven by her disposition towards creativity in her department and how this has developed through Mary's participation in different practices and from different positions in the educational field (from pupil, to teacher, to head of department).

However they have difficulties in interpreting some learning activity with which Mary is at odds. This is the case of learning about technicist managerial systems and controls (2003, 9). At this point they introduce a new element into their framework, that is, the development of meaning for learning managerial technicality in which Mary is not interested, but for which she receives external pressures:

"Even when the pressures to learn come from outside she copes with them by giving them her own meaning: by transforming them into forms that she is comfortable with, and which produce results she can perceive as useful."

(Hodkinson and Hodkinson 2003, 9)

Yet Mary expresses her doubts about the new managerial procedures (2003, 12) and in those doubts one could trace the vision and image that Mary has about what is teaching and implicitly how a school should be run, aspects which are related to the object of the schooling activity. Yet the authors explain Mary's objection to the Performance Management procedure and its role in learning by referring to her disposition to learning which "valued the intuitive, the unplanned and the opportunistic [learning]" (2003, 12).

I think that this reveals that the concept of disposition is too narrow to interpret the way in which people participate in different and new situations. This is because it plays down the meaning and sense that the activity has for the subject. In the article by Hodkinson and Hodkinson, Mary's objection to the managerialism introduced in her school is interpreted in the light of her preferred way of learning and not as her view on what is teaching, how a school should be organized, and how she actually runs her art department.

Mary appears as passionate and conscientious about teaching art and supporting the pupils' learning. Hence her personal sense of motive to run the art department could

lead her to focus more on art and teaching and less on management. The latter can be judged by Mary as a necessary task for her as head of that department, so she can accept the idea of learning some new management tools because she might think that this is part of her job of running the art department. Hence, I agree with the authors that Mary transforms the external pressures to learn about certain managerial procedures by finding a "meaning" for doing it, but that process occurs in relation to her image of what is useful for her teaching and to the running of the department (2003, 9). In this interpretation it is the image and the personal sense (for the distinction between meaning and personal sense see section 3.4.1) of the object of one's own activity that plays a role in explaining workplace learning and not the personal disposition towards learning.

Evans and Kersh share the same interests as Hodkinson and Hodkinson on individual biographies as relevant to interpreting employees' workplace learning, with a focus on tacit skills developed in prior experiences (2006, 68). In particular, the recognition and deployment of employees' tacit skills is important to sustain positive attitudes and motivation towards workplace learning:

> "Our interviews with a number of employees have shown that the issue of recognition of personal (often tacit) skills and competences is one of the most important factors that facilitate their motivation to use and deploy them within their workplace environments. If the employees believe that their skills are appreciated by their supervisors and colleagues, they feel more confident about making them visible through deploying them in a variety of activities. Taking into account employees' dispositions, identities, and backgrounds seems to be of importance in this context, as those factors may affect their motivation and readiness to deploy and develop their personal (tacit) skills."
>
> (Evans and Kersh 2006, 86-87)

The authors point out that there are employees who find opportunities to learn even without support from their employers or supervisors, enabled by their personalities and dispositions (ibid., 87). Evans and Kersh claim that dispositions and orientations to learn develop in the participation in communities of practices. Yet the processes that trigger motivation for learning are not clear and neither is it clear why sometimes employees do not need recognition of their skills to feel motivated to learn.

6.4 Working and learning by sharing motives

In the previous sections I analysed the situated and participatory approaches to workplace learning. First I introduced the work of Fuller and Unwin who point out the relevance of the work conditions to favour workplace learning, and emphasize the

workforce development strategy as the key driving force in the organizations to move towards an expansive approach to learning. Their work with Felstead and Jewson put emphasis on the managerial level to give cohesion to the workplace activity as well. Secondly I presented the work of Hodkinson and Hodkinson who identify the risk of prioritizing the social dimension and stress the necessity of developing studies on workplace learning that include individual aspects. They claim that it is necessary to analyse individuals and social structures as integrated and indivisible, focusing on the interrelationships between employees and workplace (2003, 4; 2006, 115) using the concepts of habitus and dispositions.

Yet their proposed solution for integrating the subjective dimension in the analysis of workplace learning minimizes the relevance of the objects of the work activities as sources for motives for participation and learning. This causes the loss of the link between the employees and the workplace and narrows the analysis into the boundary of the learning activity.

From my CHAT perspective, I think that glossing over the object of the work activity prevents the possibility of seeing the personal relationship to the object of activity and how this can work as a motive for the engagement of the workers in working and learning practices.

I discuss now the works of Nardi, Engeström, Sannino, Edwards and Daniels for the key role played by the concept of object/motive in their interpretations about collaborative working. Their works, to different extents, provide an understanding on how the concept of object/motive of activities frames the interpretation of the engagement of the personnel at work. As argued in Chapter Five, in this research engagement at work is the presupposition to develop (personal senses of) motives for learning. This literature review, especially Nardi's contribution, gives me another opportunity to clarify what I mean in this research by object/motive of activity and more generally the relevance of the subjective dimension in the relation of the personnel to the object/motive of the activity, which appears as an emerging issue in these studies, even if it is not the focus.

6.4.1 Engagement as passion for objects of desire

Nardi's study aims to show the pivotal relevance of the object/motive in explaining the "why" of the collaborative work (2005). She deals with scientific research activities and

her empirical analysis is on a biotechnology research department of a large pharmaceutical company (whose fictitious name adopted by the author is Ajaxe). The charter of the department was the discovery of one or two genes per year on which the company could develop profitable drugs (ibid., 39). Quoting Kaptelinin (2005), Nardi argues that the concept of object-oriented activity has become increasingly confusing for the English language has only one word – Object - for the two distinct concepts used by Leontiev, the first referring to the concrete object to be realized (i.e. the outcome of the activity) and the second meaning "the object of the game" (ibid., 40). She proposes to use the German term *Objeckt* to refer to the first meaning. She adopts the first meaning to talk about the object of the activity of the research department which is the selection of one to two therapeutic genes per year. She identifies the motive of the company as the increase of profits:

"Here the *Objeckt* was the genes, and the motive was increasing profits for the company."

(Nardi 2005, 40)

She distinguishes between construction and instantiation of the object[55], where the first is about formulating the object and the second is the work of realizing it by producing outcome. When the activity takes the organizational form of collaboration, as in the case of the pharmaceutical company, the instantiation of the *Objeckt* occurs through professionals who relate to it with different motives:

"Actors in an activity system may have radically different motives related to the same *Objeckt*. I would argue that this is the common case for collaborative activity. If we do not admit the possibility that many different motives, from different individuals, articulate in a single activity system, then we must define collaborative work as a collection of individual activity systems coordinating, somehow, with one another. Kaptelinin (this issue) asks, "If motives are separate, then why does a collection of motives define one activity instead of a multiplicity of activities?" In the following empirical discussion, I hope to answer that question by demonstrating that, at Ajaxe, a single *Objeckt* was shared among members of the research department, and that the researchers related to the *Objeckt* via differing motives."

(Nardi 2005, 40)

She identifies three motives behind the activity of this department: profit motive, scientific interest, helping human beings. The managers are moved by the profit motive, while the scientists are driven by scientific interest. The alignment among the motives occurs through relations of conflict, resistance and power (ibid., 40). She argues that in order to understand how the *Objeckt* finds its realization in a collective activity, the

[55] This distinction is parallel to my concern about conception and execution. Yet our analyses differ because I make this distinction at the level of action in the Leontiev's three-level structure of activity, while Nardi applies it to the Objeckt.

analyst has to take account of the interrelations among the motives in the collective activity system (ibid., 43).

The choice of identifying the object of the activity by referring to the Objeckt, that is the outcome of the activity, instead of using "predmet" as the 'subject' of the activity (Kaptelinin 2005) leads Nardi to:

- neglect the fact that producing medicines is the key element which gives direction to the activity, and not the profit, which is the feature of most activities in a capitalist system. From the Leontievian perspective of seeing the object as the motive of an activity, producing the medicines is the object/motive of the activity;
- in this way she misses the possibility of using the object motive of the activity as the force that should give coherence to the activity, so that when this coherence is lacking, we can use the concept of the personal sense of motives to explore it.

However Nardi's work deserves praise for drawing attention to the emotional side of activities. I will return to this aspect in section 6.4.3.

I now move to discuss studies which focus on the pivotal moments of changes in activities involving identital and subjective changes. Although the present research does not deal with crucial moments of change, I am interested in the conceptual tools adopted in these analyses to position my theoretical approach with respect to these latter.

6.4.2 Resistance and possibilities in transforming identity and activity

Engeström (2007) and Sannino (2008; 2010) explore the subjective dimension in organizational changes designed by the personnel itself in the Change Laboratory, a method of organizational intervention devised by Engeström on the basis of his theory of expansive learning (section 5.2).

Engeström has come across the issue of the subjectivity in some of his intervention studies in workplaces to investigate the co-configuration work and its relation to expansive learning:

"... expansive learning associated with transition toward coconfiguration work is *transformative* learning that radically broadens the shared objects of work by means of explicitly objectified and articulated novel tools, models, and concepts. Indeed, in the interventions we (practitioners and researchers) constructed new concepts, models and tools. The practitioners were happy with these and seemed to accept them as

their own. But when they were supposed to implement them in practical horizontal knotworking and trailblazing, (...), there was a lot of inertia and obstacles were taken up. (...). Conversely, in all three sites, there were episodes in which the practitioners became exceptionally engaged. (...) these phases are called "potential" episodes, referring to emerging possibilities of bridging the gap between design and implementation. All three episodes were characterized by strong personal involvement by the participants."

(2007, 36)

He has attempted to interpret the strong involvement of professionals and workers as well as the resistance that surfaced in his intervention case studies by referring to the concept of experiencing proposed by Vasilyuk and the one of 'live creature' elaborated on by Dewey to interpret critical situation and individual development (2007, 37).

The concept of experiencing refers to that critical moment in which the individual, faced with a situation which seems to be impossible to cope with, finds new chances and a new psychological equilibrium to deal with it. Engeström wants to add to this concept Dewey's notion of experience and the related "live creature" to stress how activities and individuals change and develop in their interactions.

The work of Sannino moves a step forward to shed light on the subjective dimension of this interplay by giving relevance to the concept of personal sense which is missed in Engeström's study and which can help interpret the resistance as well as the engagement. This author adopts the Leontievian perspective on the relation between social meanings and personal senses:

"According to Leont'ev (1978), meaning exists only in relation to personal sense, which connects it with the reality of the individual's own life and motives. (...) In other words, to reach meaning the individual has to develop his or her own personal sense of a given object, and this process is always indirect and mediated."

(Sannino 2008, 238)

She emphasises the communication as the channel of interactions between the internal and external world:

"Discoursive analyses of the use of language in Change Laboratory sessions should make explicit different participants' personal senses and the conflicting motives and goals with which they are associated."

(ibidem, 238)

Sannino draws on this to study conversation as the plane in which personal senses emerge in the process of experiencing. Her interest is to study how individual agency forms through the internal and interpersonal conflicts in schools in Finland and Italy (Sannino 2008; Sannino 2010). In her work in an Italian school the personal senses which teachers give to their job emerge, as well as the link between personal senses and contradictions in the activity of the school as institutionally designed (Sannino 2010).

Sannino offers a useful insight for my research pointing out the importance of conversations and narratives in revealing the role of experiences:

"Our interpretations are determined by our experiences, but the role that the latter play in conversations is underscrutinized."

(Sannino 2008, 240)

Yet she focuses on the role of experiences in the talks and how talks contribute to the formation of agency. I am more interested in keeping at the centre of the analysis the object of the activity and the personal relationship the workers have with this latter, shaped by the previous and parallel experiences (Chapter Seven). From this point of view the works of Edwards and Daniels are closer to what I intend to do, because of their interest in the relation between the features of collective activities and the engagement of the personnel.

6.4.3 Identification with object motive and activity development

The work of Edwards and Daniels draws attention to the lack of CHAT studies concerning how institutions (and organizations) mediate between the societal needs (motives) and the development and functioning of the persons:

"A weak point in the work that has taken forward their [Vygotsky's and Leontiev's] legacies has been analyses of how institutions mediate societal motives, how they stand between society and the person in institutional practices. Although present in the latter stages of Vygotsky's writing, relatively little attention has been paid to the development of a non-dualist account of cognitive and affective features of human functioning and these relate to the ways in which motives and goals arise in particular situations."

(2012, 55)

They focus on the issue of how professional knowledge is used by professionals according to the institutional modality. They argue that professional knowledge is a key element because it is selected and organized according to the motives that shape the activity. Hence the investigation of how it is used by the professionals reveals how agency and motives are linked (Edwards and Daniels 2012, 41).

Drawing on Knorr Cetina's notion of epistemic objects and on Basil Bernstein's model of institutional discourses to integrate the CHAT perspective, they explore how the talks of professionals about the knowledge that matters are affected by instrumental and expressive discourses shaping the practices in children's public services.

The Knorr Cetina's approach distinguishes between knowledge as a "ready-to-hand" tool and as knowledge objects to which the professionals are emotionally tied and which they elaborate on to deal with complex problems and contradictions in the practices

(2012, 45). Bernstein's distinction between instrumental and expressive discourses serves the goal of taking into account the emotional experiences of professionals, particularly evident in the front line of work with children and their families.

Edwards and Daniels see the identification of the professionals with their jobs through the professional knowledge which matters for the practitioners in their relations with other professionals (2012, 48). This identification and emotional engagement is in tension with the expectations of the institutions for which they work. In the authors' interpretation, the emotional experience of the professionals and how they use the professional knowledge represents Bernstein's expressive (or regulative) discourse, while the institutional expectations refers to the instrumental discourse which regulates how to classify and organize the professional knowledge. Different combinations of these discourses bring about different structures and interactions at work:

> "For example, in children's services, where the beliefs about the knowledge that matters gives rise to a strong classification and strong framing of specialist practices, it is expected that there will be a separation of professional discourses and an emphasis upon acquisition of specialised skills which may downplay both inter-professional collaboration and engaging children and families in solving problems. Relations are therefore likely to be clearly hierarchical with the instrumental and the regulative discourses as relatively distinct. However, if beliefs about the knowledge that matters give rise to a weaker classification and weaker framing of the practice then there is likely to be easier cross-service collaboration and greater engagement of children and families. In this case, the regulative discourse is embedded in the instrumental. The language that Bernstein has developed, uniquely, allows researchers to take measures of institutional modality."
>
> (Edwards and Daniels 2012, 47)

The authors conclude their study pointing out the importance of making visible the purposes of the institutional practices to offer possibilities of engaging in a dialectic with the engaged professionals who create new knowledge:

> "The opportunity for a refreshed version of professionalism within the English welfare professions has come at a time of diminishing budgets where 'what matters' or the 'why' of practices needs to be to the fore in any decision-making at both institutional and individual levels. Our argument is that this can be achieved by promoting a combining of the affective with the cognitive in professional practice and establishing work systems which make visible the purposes of institutional practices offering opportunities for a dialectic which recognises the engaged expertise of knowledgeable professionals."
>
> (2012, 56-57)

They argue for combining the affective and the cognitive and suggest the softening of the instrumental discourse to give room to a constructive tension between this and the expressive discourse of the professionals in the front line. Edwards and Daniels see a chance "for a refreshed version of professionalism" in the recent governmental move towards a policy which seems to dismantle the New Public Management (NMP) "leaving more freedom to professionals in the service professions" (2012, 56).

Clearly, these authors' suggestion aims at promoting a more collaborative and co-configuration strategy of delivering services. Indeed, they prefer to express this idea using the concept of "work systems". I prefer to use the concept of strategy (section 5.3) to better recall the dynamic feature of any activity. Interpreting the analysis of the authors, the complexity of the work done at the boundaries of service organizations that have emerged in the contemporary UK requires a shift of strategy from the NPM to a revisitation of the old model of the "ideal service" (ibidem, 40). This is to acknowledge the engagement of the practitioners in their daily work and value the professional knowledge they develop by dealing with the complexity.

What I want to point out is that the analysis of these authors highlights the salience of the strategy of the services (organizations-activities) for the issue of engagement of the professionals. Their study draws attention to the intertwined connection between emotion and cognition, and opens up the possibility to see the potential of the professional knowledge developed through the engagement to transform and innovate the object motive of activity. On the contrary, a point of difference with my research is with regard to the way of analysing organizations such as institutions or enterprises.

According to Bernstenian adopted vision which give primacy to control and power (Edwards and Daniels 2012, 46-47), Edwards and Daniels analyse organizations through the categories of horizontal and vertical distinction:

> "we examined both the horizontal distinctions between professions and the vertical distinctions that marked hierarchies within professions. The former involved assessing the strength of classification (the division of labour between different professions) in the practices of professional agencies and control or framing of the membership of these groups. The latter involved judging the strength of distinctions in the vertical division of labour, the strength of the marking of hierarchy and the associated relations of control within this hierarchy was also seen to be a central facet of the structuring of the DWR sessions. The strength of control over the regulative practice (matters of order, identity and relation) was also noted."
>
> (Edwards and Daniels 2012, 51)

In my research I analyse organizations through the concepts of strategies of production to describe the object of activity, from which labour process and work organization stem (section 5.3). I tend to see the dimensions of control and power in organizations as aspects of these and therefore functional to the object of activities which are in continuous transformations in relation to the changing cultural and historical circumstances. I prefer to adopt the object of activity as the key concept to analyse enterprises and organizations for I consider it as the engine of the activity.

However, Edwards's and Daniels's work show that the CHAT approach is promising with respect to the investigation of subjectivity for it brings together the object of activity and the subjectivity of the personnel, which is outlined by these authors through the emotional and expressive side that emerges in how professionals use and elaborate their professional knowledge in dealing with complex problems in children's public service. I want to explore more the issue of subjectivity and engagement at work in relation to the object of activity. As I argue in the next chapter, I plan it by setting up a comparative study between different strategies of production. The aim of my work is to provide new insights in the issue of workplace learning.

6.5 Concluding remarks

The discussion in this chapter shows that the aim of integrating the individual and societal processes in the analysis on workplace learning has not been reached in studies adopting the situated and participatory perspectives. This has come about because these approaches tend not to take into account what people do at work, whether that work makes sense to them, whether they feel passionate about their jobs. In other words, the interpretation of the subjective side remains inside the territory of learning and loses the possibility to explain why workers learn, even when it seems that their dispositions do not fit the type of workplace learning they experience.

The studies framed with CHAT and dealing with engagement and resistance are better equipped to acknowledge the intertwining process of learning and development of both the personnel and the organizations. In CHAT studies, even if not always with a complete acknowledgement by all the authors, the salience of the strategy of the delivering of service (or of the production) for the engagement of the personnel emerges. Nardi stresses the passion of researchers in carrying out their research for new molecules; Engeström and Sannino notice the moments of crucial changes in collaborative works and how the personnel find a way out from the resistance to changes drawing on their profound interest in their jobs; Edwards and Daniels claim to take into account the form of institutions to support the work of professionals and their engagement in dealing with complex problems.

However, even if the issue of subjectivity emerges in these studies, more often the interest of the scholars is about agency. Therefore the subjective aspect as well as how

different activities are in relation with the subjectivities of the workers remains underinvestigated. The comparison between activities defined by different object motive is lacking in CHAT to investigate the relations with the workers' subjective engagement and learning.

What I want to do with this research is to concentrate on this subjective dimension of activity and to investigate how different objects of activity relate with this dimension.

I will now recapitulate the main elements of the theoretical framework developed so far to achieve this analytic aim in the next chapter. In the same chapter I will present the research design for the empirical work.

7 Older workers and vocational learning in the transforming work: how to investigate it

7.1 Introduction

The discussion developed so far highlights the relation between strategies of production, workplace organizations, subjectivities and vocational learning. This research has used the concept of the 'object of activity' to connect practices and subjectivities. In the industrial sector, the focus of this research, the particular manifestation of this relation is the industrial production and how the workers subjectively make sense of it, as mediated by the workplace organization, labour process, and other experiences. This has enabled the research to explore the motivational aspects for vocational learning.

As shown in Chapter Six, some of the socio-cultural studies focus on the collective side of learning (i.e. learning environment) while other studies attempt to include the individual motivational aspects framing the discourse with concepts as individual dispositions to explain the employees' attitudes towards learning and tacit knowledge to take into account their prior learning. When these studies concentrate on the individuals and their biographies, the reference is either to the cognitivist concept of motivation, or to Bourdieu's concept of habitus as set of dispositions. Each of these conceptual solutions is not satisfactory because it glosses over the salience of the object of the activity to provide meanings and senses to the personnel involved in the activity.

As I discuss in Chapters Three (sections 3.4 and 3.5), Five (section 5.5) and Six (section 6.4), what is distinctive about the CHAT perspective is that it assumes that the source of human motivation lies in the activity: workers enjoy working when they work in organizations where they can make sense of what they do. This is different from the mainstream psychological conceptualization of motivation as founded on biological needs, or the concept of a pre-given disposition. The concept of personal sense of the motive for the work activity allows the subjective and objective relation of the worker with her workplace to be taken into consideration, as well as the personal development occurred in participating in different activities and in different positions in the life course through which motives for working are interiorized and personalized.

In this chapter I commence with a recapitulation of the main points of my reasoning on older workers' learning so far and introduce the research questions. I will then discuss

the choice of the case study as the appropriate methodological strategy to answer the research questions and present the research design.

7.2 Recapitulation of the research: what to look for

The European Council has agreed to address the demographic challenge of an ageing population by raising the average EU employment rate up to 75% by 2020 through greater participation of older workers and low skilled workers (Dunlosky and Hertzog 1998, 21). Education policies and lifelong learning are a top priority to help workers upgrade their skills and keep themselves employable. Yet, older workers with a low level of education seldom participate in continuing vocational training (European-Commission 2008, 59-62). Hence it has been agreed that targeted incentives are put in place "... to ensure that the number of workers over age of 45 participating in training rises much faster than that for the overall workforce." (European-Commission 2006, 11).

This study aims to question that the older workers' low participation in vocational training is an issue in any case and incentives constitute the crucial element to ensure a higher level of participation (see sections 2.6 and 5.5). These starting issues are then articulated in two research questions (see below) generated by the chosen theoretical framework, which I summarize in what follows.

The discussion in the previous chapters highlights several aspects concerning the issue of vocational learning for the employability of older workers. First, learning is social and cultural in its nature; it is not a fully individual process (Chapters Three and Six). Second, knowledge is situated, dependent on meaning making processes, and subjected to continuous changes; that is, it is not stable, homogeneous and standardized as assumed in the European policies on vocational training (sections 2.6, 3.2 and 6.4.3). Third, learning is an ongoing process occurring while activities unfold and is connected to the features of the activities performed and the employees' position held in these (Chapters Five and Six). Fourth, learning is prompted by a need for learning, emerging from the activities. Fifth, learning is related to the personal sense-making of the workers to engage in the activities (sections 3.4, 5.5 and 6.4).

Hence, because learning needs take form in activities as well as the sense making, and I am interested in vocational learning of older workers employed in firms, it follows then

that the investigation has to focus on work activities, and their objects, labour process and organization as well as their meaningfulness for the workers.

As I explain in sections 5.5 and 5.6, the autonomy of workers in their work activities – that is, when they are in charge of actions with their moments of conjunctions between conception and execution - is crucial and varies according to the object of the activity, that is, the strategy of production and market. Different degrees of autonomy open up different opportunities for engaging with work, developing learning needs and motives for learning. In a concise way, my theoretical frame sees the possibility of engaging in working practices - and developing learning needs and motives - in the contact and relation workers can come to have with the motive for the industrial production. They can 'feel' the motive for the activity and develop engagement when they carry out actions, whereas the opportunity for that contact can be restricted when they perform only operations. When they operate in autonomy, workers can learn what the objective of and motive for their activity is and make sense of it.

My initial interest in investigating the low level of older workers' participation in vocational learning can be now articulated in two related questions:

- *How* do strategies of production affect older workers' engagement in working and vocational learning?
- *How* do their subjectivities play a part in this engagement?

I refer these research questions to older workers on the shop floor in the industrial sector. As shown in the discussion of changes in economic activities (Chapters Two and Five), learning is a fundamental process in the transformation of industrial production. I choose to concentrate on older workers on the shop floor because they represent a group characterized by a low level of education. As mentioned above, older workers with a low level of education represent one of important targets in EU documents and policies.

The aims of my empirical work is to explore *what* can be learned about those research questions from a study framed with CHAT and refined, through reference to empirical situations, the theoretical ideas developed so far to interpret the participation of older workers in vocational learning. This is one of the first CHAT studies on subjectivity in vocational learning and there are no previous research experiences which can provide insights on how to investigate this empirically. The next sections are devoted to

developing a strategy of empirical inquiry appropriate to the CHAT influenced perspective that has been adopted.

In the following section, I discuss what methodological approach is most appropriate for the object of inquiry of this research and consistent with the chosen theoretical framework. I present the research design further on in this chapter.

7.3 The choice of the method of investigation: the case study strategy

In the social sciences there is a general tendency to focus the discussion on the choice between the various strategies of empirical research around the division between qualitative and quantitative methods. The debate tends to see quantitative methods as superior to the qualitative ones because of the possibility of the former to investigate large number of cases and make generalization from the findings. Qualitative methods, such as ethnographic studies, are claimed as the most appropriate ones to evaluate, in depth, the mechanisms and processes in the collective phenomena, propaedeutical to extensive survey (Goldthorpe 2000, 65-93).

Yin implicitly criticises this framing of the discussion for neglecting that some research strategies, such as case study and experiments, can be used either for explorative or explanatory or descriptive aims, a fact which demonstrates that it is not possible to rank empirical research strategies along a hierarchical axis (Yin 2003, 3). He proposes to choose the empirical method on the basis of three criteria: the types of research questions, the possibility of control on the phenomenon to be investigated, and the contemporaneous/historical aspect of the events (Yin 2003, 5-9). When research questions focus on "why" and "how" (explanatory aims), without interest in questions as "how much" or "what" (descriptive aims), he indicates experiments, histories[56], case study, as likely to be appropriate methods of inquiry. The discrimination among these three strategies occurs then according the other two criteria. If the events to be investigated can be under the control of the investigator, experimental design is possible. Case study is advised when events are not under the investigator's control and are contemporary. Historical inquiries are carried out when events occurred in the past. Yin also states that 'what' questions such as "what can be learned from a study on …?"

[56] Yin distinguishes more types of questions, but only those mentioned in this section are relevant for the sake of this study.

indicates the need for an exploratory research strategy. He deems that any of the five research strategies can serve this aim[57].

On the base of Yin's criteria the most advantageous empirical method for my research seems to be the case study. In fact, the type of research questions of my study is about *how* vocational learning shows itself in the case of older workers in the industrial sector (first criterion). However, as I point out in the previous section, the aim of this research is to explore the processes which can explain the older workers' participation in vocational learning. That is, my study has an exploratory aim oriented to develop ideas to explain processes. With reference to the Yin's second and third criteria, it is not possible for the researcher to control - as in an experiment - the manifestation of the phenomenon object of the study, and this extends itself in the past and in the present. Therefore, in Yin's perspective the case study strategy appears to be the most appropriate.

Yet there are also other motives for choosing this method of inquiry, which can appear when one takes into account my theoretical perspective.

7.3.1 Theoretical reasons for choosing the case study strategy

Indeed, in the learning studies literature, the debate on methodological issues widens the Yin's perspective to include consideration on the chosen theoretical perspectives, pointing out the relation between these and the methodologies.

Hodkinson and Macleod argue that research methodologies such as mini-ethnography, life history, cross-sectional surveys, existing panel survey tend to be adapted to different ways of understanding of learning: the first one has affinity with the participatory metaphor of learning, the second one fits more with learning as construction and formation, while the latter two methodological strategies can catch dimension of learning as acquisition (Hodkinson and Macleod 2010).

With reference to the theoretical approach adopted here, Kaptelinin and Nardi state that the appropriate method of research in CHAT is one which takes into consideration that human interactions occur in the context of development. This implies that the research method should aim at seizing the history and development of a practice and monitoring

[57] Yin refers to experiments, surveys, archival analyses, histories, and case studies (2003, 5).

the changes of the study participants. These authors note that ethnographic methods have become important in recent works (Kaptelinin and Nardi 2006, 72).

Säljö, from a cultural-historical stance and a wide temporal observation on studies on learning carried out with different perspectives, notices that the coherence between theoretical approach and method of inquiry does not always occur[58]. He focuses in particular on the unit of analysis and argues that the identification of the latter has to be adapted to analyse the object of inquiry as it has been conceptualized (Säljö 2007). He defines unit of analysis as the conceptualization of a phenomenon "that corresponds to a theoretical perspective or framework." (Säljö 2009, 206). He provides more than one example of studies where there is incongruence between object of inquiry and unit of analysis to draw attention to the relation between what is conceptualized and what is observed, a relation which can change across time and situations, depending on the questions we are addressing, but also depending on the theoretical perspective we are adopting (Säljö 2009, 204). In fact, as Säljö points out, it was more than fifty years ago that Norwood Hanson convincingly argued that any observation can be strongly influenced by our theory, hypothesis or background. Hence the objectivist position which sees the unit of analysis as stable should be overcome. This is particularly clear in the case of learning and its conceptualization, which can range from individualistic to collective perspectives, and should bring a change of unit of analysis (Säljö 2007, 7).

My object of inquiry is the motivational aspect in older workers' vocational learning which has been defined in the previous chapters as linked to the engagement with the object of the work activity, seen as a collective and material process, in which the subjective side of working and learning processes occurs in making sense of the activity, in relation to encountered social meanings and the life circumstances and experiences of the participant.

This implies a complex set of interrelation of aspects occurring in industrial activities in which older workers work and indicates the necessity of collecting information about the material and collective production, as well as the narrative of the workers about their work and learning experiences. Hence the study of enterprises, and older workers

[58] Säljö names the Vygotskian tradition as sociocultural, but in conformity with the label I use in this work, I change it in cultural-historical (see section 3.3.1).

working in these, seems to be the unit of analysis most consistent to the theoretical approach adopted here.

Drawing on Yin's contribution presented above, for the aim of this research is explorative and the questions are oriented to learn how older workers engage in vocational learning, rather than how much or how often this occurs, case studies of enterprises have appeared to me as the strategy most adapted. This is also because the aim of the research is to explore the processes connecting working and learning. Many authors point out that case study is particularly suitable when researchers look for investigating mechanisms and processes (Gerring 2007, 43-45; Hodkinson and Macleod 2010, 177), a position taken also by scholars more inclined to prefer survey strategy (Goldthorpe 2000, 65-93).

The next section is devoted to present in more details how I have used this strategy of research to address the research questions listed in section 7.2.

The following sections give the first part of a 'reflexive account' on the procedures followed to carry out this study. The second part is represented by the empirical chapters (Eight and Nine) where data are reported and connections are made between the theoretical framework and the conclusions drawn from the analysis. As Altheide and Johnson put forward (1994) and Cardano develops (2001, 2003, 2009), the reflexive account can respond to the methodological principle of providing all the information to allow the scientific community to evaluate how objective is the study. Here I mean objectivity as developed by Cardano from an ethnographic approach in the context of research methodology. Objectivity refers to the outcome of the internal debate to the scientific community, which uses the "persuasive reasoning" rather than the "demonstrative reasoning":

> "… I assume a concept of "truth" based on inter-subjective agreement, constructed discursively within a forum set up by the scientific community, or rather a specific fraction of this latter. What gives an assertion (or a set of assertions) objectivity is not the use of a "right" method (right both in data collection and analysis), nor the "tribunal of experience", which can decide whether the social world and its representation correspond. Instead, objectivity is conferred by a collective subject – a forum which arrives at a decision, using the tools of argumentation rather than those of demonstration (Perleman and Olbrechts-Tyteca, 1958). This ties down the notion of objectivity to specific coordinates of space and time, and makes the attribution of objectivity status always revocable […]."
>
> (Cardano 2009, 2)

This position is coherent with the epistemological view about knowledge in CHAT, emerged in this study when I discuss conceptions of knowledge (section 3.2) and human

development as the outcome of social and collective endeavour mediated by cultural and historical material and immaterial tools (section 3.3.2)[59].

7.4 Research design

As synthesized in previous sections, the focus of the research is on the relationship between older workers' learning and strategies of production, taking into consideration their subjectivities. The typology elaborated in Chapter Five (section 5.6) indicates mass production and flexible specialization models as two strategies of production characterized by contrasting features in terms of labour process design and work organization. According to the discussion of the possible implications of this for engagement in the workplace and learning motive, my aim has been to explore how older workers engage with their tasks in two enterprises identified - one for approximating the ideal-type of mass production, the other one the flexible specialization. The objective has been to explore the hypothesis that production strategies can create fundamental different engagement for older workers and investigate how this occurs in the interplay with the older workers' subjectivities and is related to motive for learning. Comparing two extremely different ways of producing goods serves to meet the goal of highlighting the differences in the processes of the subjective engagement of older workers in their workplaces and to answer the research questions posed in section 7.2.

The two selected enterprises are located in the region of Piedmont, in the area of Turin. This Italian region presents an ageing trend of the workforce as well as a context of significant transformation from the traditional manufacturing economy towards a knowledge-based economy (Buran 2001; Cerruti, Leonardi et al. 2009).

I have selected the two enterprises drawing on my personal contacts and I offer an account of obtaining access to these two firms in the next section.

The design takes the form of being multiple embedded, where the two enterprises count as the two case studies – and representing two units of analysis -, with embedded individual units of analysis in it (Yin 2003). The data collection has regarded older workers, executives and trade unions' delegates, mainly through interviews (fifteen),

[59] For a extended discussion framed by CHAT on knowledge and its location in the space of practices of giving and asking for reasons, with reference to the issue of learning in the knowledge economy, see Guile, D. (2010). The Learning Challenge of the Knowledge Economy. Rotterdam, Sense.

and few formal and informal meetings. The focus has been on workers over 44 years of age working on the shop floor. This threshold age is the most frequently used in the literature (Tikkanen and Nyhan 2006, 10). Yet, this was just an initial point of reference, useful to communicate to the gatekeepers and indicate whom I wanted to interview. Indeed, the gatekeepers used my indication about age in a flexible way, so that they put me in contact with an older worker who was aged 43 (in case study E2). As I argued in Chapter Four (section 4.5), I have developed a view of being an older worker based on the accumulation of having had and made experiences throughout the life, including the experience of becoming old. So I have included that older worker in my study because he had started to work when he was very young and accumulated a good deal of experiences at work (see Chapter Nine). Furthermore his current working experiences are rich of thoughts about the relationship between younger and older colleagues, a sign that indicates to me that he is reflecting on what it means becoming an older worker. On the base of my definition of older worker, he can then be considered as an older worker.

The range of type of personnel interviewed has had the aim of collecting information from different sources to comply with the methodological principle of construction of validity of the data collected about the characteristics of the industrial activity and its organization (Cardano 2001; Cardano 2009). As Kirk and Miller (1986, reported in Cardano 2001 p.191) and Gomm (2009, 367) point out, indeed, interviewing different people on the same issue often reveals the multivoicedness of a context as expression of different opinions and positions in the social network. This is what has occurred in this study sometimes, as reported in the empirical chapters (Eight and Nine). The reading of those chapters, however, can reveal a high degree of consistence among the older workers' interpretations of the dynamics occurring in the two enterprises.

The data take the form of recorded interviews and transcripts, field notes, documents of different types such as websites of the enterprises, newspaper articles about them, internal papers, sketches drawn during interviews. The interviewing and observation had been taking place mainly from October 2007 to July 2008. I am still in touch with some of the people from the two enterprises, more with people working in the mass production-approximated enterprise, with whom I exchange calls, emails sometimes, and go out for a drink occasionally. I have taken field notes of these occasional contacts up to the end of 2009.

The interviews (nine) with the older workers represent the core of the data collection. It is only in interviews that I could collect data useful to be interpreted as the subjective dimension in the industrial activity. As I argue in section 3.5, older workers' selves are the products of ontogenetic cultural developments occurred through participating in different activities and social practices, in which older workers have built their own hierarchy of motives and personal senses. I also argue that subjectivity reveals itself in the emotions and meanings (personal senses) given to the tasks and actions carried out in the workplaces (sections 3.5 and 5.5).

Hence a free discursive interview beginning with an initial request to tell me their working lives was the most appropriate tool with which to collect data from the older workers about what they have been doing in their lives, in the circumstances in which partly they found themselves and partly they have created. I come back to this type of interview in section 7.6.

The duration of the observation and the type of interviews could be seen as resembling my case studies strategy to the ethnographic research[60]. Yet I embrace Cardano's position that ethnographic research is based on participant observation mainly (2003, 110). However I have noticed all of the peculiar characteristics of the ethnographic work. According to Cardano (2001), this has three distinctive features. Firstly, the researcher is at the same time the observer and the instrument of data collection, that is, her language and subjectivity mediate the representation of the culture investigated. Secondly, the investigator is subjugated to the object of inquiry, in that this latter can decide what the first can learn about his/her culture. Third, the link between the theoretical constructs and the observed elements can only been woven at the conclusion of the research.

I discuss the role of my subjectivity in next section. My subjugation to the object is evident in the ways that I could access the firms and select the interviewees (in the next section). Indeed the connections between my CHAT influenced perspective on subjectivity and the data collected could be seen only at the end of the process of investigation (see conclusive remarks of Chapters Eight and Nine and Chapter Ten).

[60] I agree with Yin when he says that case study strategy can collect data using different methods Yin, R. K. (2003). Case Study Research. Design and Methods. Newbury Park, Sage Publications., 11 and 14.

I now turn to discuss how I have gained access to the firms and the related ethical aspects.

7.5 Access to the two enterprises and ethical aspects

In this section I critically discuss how the two enterprises have become my case studies. The two distinct processes which led to the two firms have been different: one developed through trade union contacts, the other one developed through informal professional contacts with the executives of the firm. This latter was the first to occur.

Having been a researcher for a long time in Turin in an Institute of economic and social research funded by the regional Council has provided me with a network of contacts in the economic and political world of my region, with acquaintances among the representatives of the social forces, that is trade unions and employers associations. My research interest in workplaces and businesses had also occasionally led me to take opportunities to know economic realities more closely, as when I attended a cultural programme of events, organized by a pool of institutions, banking foundations and universities in my region, devoted to favour the relationships between companies and areas and population where the companies were located (in my region). On that occasion I could visit some companies as a citizen and with other citizens. That occurred in 2005. Hence in 2007, when I was starting my empirical work and was on leave from my Institute of research, I thought that one of those companies, visited two years earlier, would have suited my second case study. I realized that the company – which I named as E2 in my study - has the characteristics which recall the model of flexible specialization, one of the two theoretical models of strategy of production that I wanted to explore (see previous section). Therefore I contacted it through an engineer whom I had met during that cultural programme of visits. At the time of that visit, after he had presented the most innovative aspects of the activity of E2 to the visitors – a group of around twenty citizens -, I introduced myself as a researcher on older workers and learning. He showed a lot of interest and wanted to present me to the president and director of production in E2. Mindful of that visit and welcome two years earlier, I sent late in 2007 an email to that engineer I had met at that time, asking if I could adopt E2 as a case study for my PhD research. He readily showed willingness to support my request and within a few days, arranged a meeting with the Operations director, Engineer V, who was the director of production at the time of my first visit. The person

in charge of public relations, communication and vocational education, Ms R, participated in the meeting and by the end of it she had already made an appointment with the CEO three days later, for an interview. To my great surprise, my proposal had been already accepted. After few weeks I was able to start the interviews with the older workers, selected by Mr T, the person in charge of Human Resources. Mr T selected five workers following the criteria I had asked for: workers with lower secondary education as a maximum, older than 44 years, working on the shop floor. I also asked to interview one worker for each type of work carried out on the shop floor: a tools machine operator, a welder, an operator on the assembly[61], two from the most innovative area. The contacts were provided quickly and I started to interview the older workers very soon.

The process to gain access to the second enterprise has been longer. It has taken nearly four months. I started by asking for help from trade unionist whom I have known for a long time, but with whom I use to have very rare occasion of meeting. It happened that I met him by chance at a conference towards the end of 2007 and took the opportunity to ask him for help. He is a trade unionist active in the industrial sector of my region, for the Italian trade union CGIL, the most important one in this sector in terms of members[62].

I had asked him to look for me for one or two companies with the following characteristics: being in the Turin area, operating in the industrial sector, with more than fifty employees (that is, a small or medium enterprise), with workers older than 44 years, with an *assembly line*, and being *little innovative*. I see the element of producing through an assembly line as the one which identifies the model of mass production. The fact of searching for a company considered as little innovative is explained by the need of emphasising the contrast with the second case study, which refers to the model of flexible specialization. This latter one has in its nature to adapt to the changes in the market demand, being more sensitive to this latter than the mass production model, especially in its original form. After a few weeks I was given by this trade unionist the contact details of another trade unionist, whom I had never met before, who was in

[61] This area was suggested by Mr T. The interview with Mr D will reveal that this assembly activity is completely different from one carried out on assembly line (Chapter Nine).
[62] CGIL stands for Confederazione Generale del Lavoro (General Labour Confederation) and represents workers and employees in any sector.

charge of the company E1[63]. He organized a meeting with the director of human resources and the RSU (employees who are representatives of the trade unions in the company) at the site of the E1. In that meeting I explained the object of the research and my need to interview about ten older workers: the personnel director showed some perplexity as he had understood that the research was based on questionnaires, which could have been easily handed out to the workers by the RSU. The interviews involved a different commitment from the workers. However he told me that he would have to talk to the owners about my request and come back to me later. After a few days I received an email in which he said that they could not accept my proposal for the company was going through a difficult period. However he did not refer explicitly to the owners, fact which suggested to me that he could not have asked the owners indeed and hence, there was maybe a chance to insist and get the access. Therefore, I decided to try to meet him again, and gain more confidence by giving him an opportunity to know me more, and thus understand that what I wanted to do was only collecting data for my PhD thesis and that I was (am) aware of the complexity of the life of an organization as the enterprise E1, facing a ferocious competition from the Eastern countries. I replied to the personnel director's email saying that I took his point, but asking whether he would be interested in discussing with me the challenges of the global market and the Italian model of industrial relations. We had a business lunch during which we talked about different topics related to the issue of older workers, innovation, and workplace organization. At the end of the meeting, without me mentioning again my request of access, that is, without pressing him, he suggested that I asked the trade union to support me in organizing some interviews with the older workers in E1. I think that he understood that I appreciate the difficulties of managing an enterprise and that I would have carried out my empirical work trying my best to avoid interferences with his work. Indeed I found myself very often in the situation of listening to the voices of the older workers complaining for the conditions of work and showing empathy, but at the same time avoiding to take position against their managers and foremen. This was possible because the workers seemed as though feeling already satisfied that someone – me – was listening to them and maybe hoping – through the research – of being heard in the outside world too.

[63] E1 is the name in code of the enterprise closer to the ideal type of mass production.

So, after that business lunch with the HR manager of the enterprise E1, I contacted the trade unionist who organized the first meeting again, and he directed me to Ms B, a RSU woman 50 years old, working on the assembly line in the enterprise E1, as a person who could help me get in touch with other older workers. I interviewed four older workers with the help of Ms B. She played a fundamental role in choosing who would be interviewed and attended the interviews with her colleagues, except the interview with Ms A.

7.5.1 Type of access, strategy of production, and ethical issues

I want to develop some remarks on these two different ways of access and related ethical aspects. In the case of enterprise E1 the access was problematic and the management showed some concern and resistance. In the case of enterprise E2 the access was smooth and unproblematic. In the access to the former I was in the position of trying to convince the organization that the topic of my research would not have interfered with the company clime. In the second one, I did not need to persuade them about the value of my research because they had shown interest in my research the first time they heard about it, in 2005: so I found myself in the position of just having to explain what I needed in order to carry out my research. From the point of view of ethical aspects of doing research, the requirement of a professional approach to undertake social inquiry, and the kind of relationships needed with sponsors (British-Sociological-Association 2002, guideline number 43), the type of interest shown towards my project by the management of E2 was a genuine one, stemming from an implicit acknowledgment that the aim of research activity is to advance knowledge. Therefore it did not lead to any interference with my empirical work. However, beside this genuine interest, there might have been the assumption that allowing me to carry out my research in their enterprise would have led some benefits to them in term of visibility as a true innovative company[64].

Indeed I interpret the different interest shown to my research as the result of the different strategies of production of these two firms and the meaning that my identity has assumed to the management of the two firms with respect to these strategies, mass production and flexible specialization. As will be recalled, E1 is a firm which

[64] I had guaranteed anonymity of the enterprise, but I was under the impression that they did not care about this.

approaches the model of mass production, whereas E2 is closer to the ideal type of flexible specialization, two strategies of production discussed in Chapter Five. We will come across other elements in Chapter Nine which denote E2 as driven by a competition based on innovation. I see in this the need for support from the society and its government. Indeed enterprise E2 had received funding from the regional government for an innovative project. Moreover E2 is a public company, that is, the CEO is autonomous in his decisions, but at the same time he is bound to the good performance of the company to be presented to the assembly of stockholders. Therefore the CEO and the management of the company E2 could have seen me as part of the regional establishment - because I am a researcher in the centre of research funded by the regional council -, and therefore as able to enhance their relationship with the regional government once I went back to my office after the leave to do the PhD. Even if this is the case, I sent neither any sign to support this view nor made any promise to facilitate their relationship with the regional council or government nor provided to them the findings of my research as acting as a consultant. However, as part of the process of negotiating the access, I said that I could have let them know when my work would have been finished, even if none had asked to receive the findings of my research. Yet, at a certain stage in my empirical work, I understood that I could not give to the management my work in its entirety, because they could easily recognize the voices of the workers interviewed. Hence at the end of my work I contacted the Manufacturing Director and offered the possibility of a meeting to return a kind of executive summary, without excerpts from the interviews or any other references to these latter. It happened that he was not able to organize a meeting. And I did not insist on that.

In the case of E1 the family - who set up the business some decades ago - holds the keys positions in the company structure and the management is closely controlled by this. As the data analysis will show in Chapter Eight, the strategy of E1 seems driven by a competition based on cost. The property and management of E1 does not seem in need of an open support from the local government, in contrast to what it looks to occur in case E2. As I report in Chapter Eight, E1's strategy is delocalization to lower the labour cost and remaining competitive. My interpretation is that, in this case, being open and allowing a closer investigation as with interviewing – instead of collecting data with a questionnaire – does not have appeal, because – in their imagination - it cannot promise any advantage to the strategy of the company. Moreover, because the model of mass

production is no longer attractive in the western socio-economic context in which the emphasis is on innovation, technologies, and knowledge, this research could have been seen by the owners and the management as revealing to the outside world that the mass production still exists in this part of the world, struggles in the competition with the East (China, India, Malaysia, Indonesia) and delocalization is its strategy to cope with this situation.

Hence the proprietors and management of E1, on the contrary of those ones of E2, might have seen my research as threatening their activity by fostering a public debate about the economical and social advantages of supporting that type of business in a developed European region instead of promoting a more advanced and high-added value industrial activity.

Despite the fact that my research could have been seen as a threat of becoming too much visible (E1) or as a chance to be more visible in the public domain (E2), in any case I did not receive interferences in my work. They chose the older workers I could interview, while I would have liked to do it by myself, but I consider this as the outcome of the negotiation of the access, and not as interference. Since I found difficulties in gaining entry to companies, and these two enterprises were exactly what I was looking for, I preferred to stick to these two cases, instead of looking for other enterprises willing to open their gates to me more widely and running the risk of not finding better cases to study.

I remark on the connection between type of access and type of strategy of production: the enterprise more innovative (E2) was open to what they suppose could have resulted in being a scrutiny of their activity for the Regional Council, while the enterprise more traditional (E1) has protected itself from what they might have seen as an intrusion. I see these different attitudes toward a request of being the subject of a research such as mine as one of the findings of my study. The data analysis and interpretation presented in the Chapters Eight and Nine will show how these attitudes - being open or closed toward being part of a research - are coherent with other features of the workplaces these enterprises create through their activities.

I now turn to discuss how I have organized the interviews with the older workers and highlight the related ethical aspects.

7.6 Free discursive interviews

7.6.1 The contacts with the older workers

I have adopted free discursive interview to allow the interviewee unfold the story of her/his working life. I started all the interviews with the older workers by asking when and where they began working and what workplaces they have worked in, focusing then on their current workplace[65]. But before that, I introduced myself and the research that I am conducting. I gave further details about who I am and what I do, and fewer details about the research object to minimize distortions in the data due to opportunistic attempts to fit with expectations. During the interviews I was aware of the importance of the tone of my voice and body posture in order to demonstrate transparency and fairness.

I was also conscious that the talks with the female older workers were facilitated by being a female researcher and interviewer. When I met Ms B, the older worker who helped me contact the other older workers, I tried to send signals to confirm that I am a woman who likes listening and being respectful. I think that Ms B passed her positive feelings about me to the other female older workers, so that it was easy for them to trust me. I felt that they saw in me a person who could understand their problems at work. This easiness of the relationship between female researchers and female interviewees has been discussed in feminist literature, as coming from the fact of sharing the same female culture (Oakes 1981; Duncombe and Jessop 2002).

On the contrary, this did not happen with the male interviewees, all belonging to the second case study. The person who put me in contact to them was their personnel manager, another man. Whereas that kind of female communication and signals did not occur, the fact of being introduced by a superior, might have had the opposite effect, and cast a shadow of suspicion on me, the suspicion of being someone sent by the management for some unknown reason. Moreover I was under the impression that they have found it strange to describe in details their jobs to me, because it was clear – from my requests of clarification - that my understanding was a general one, and not a technological one, as they might be used to expect when they talk about their jobs with other colleagues, who must be almost exclusively men. When I felt hesitations from

[65] The interviews with managers aimed to collect data about the strategy of production and the organization of work.

them, I had encouraged them to not worry if I could not understand everything, because my objective was just to get an idea of their tasks and jobs in the shop floor. However, all the workers at the beginning were clearly wondering who I really was, but after the initial hesitations, I could see all of them relaxing. I think that my way of presenting myself, with my business card with the logo of my Institute of research, and clearly stating my position as one of the researchers, although on leave, could have helped to reassure them. I cannot exclude that they could have tried to represent themselves to me as having less problems than actually they were feeling. The analysis in Chapter Nine shows that some discontents surface in the interviews, but the overall picture appears convincingly as opposite to the one in the case study of enterprise E1, as I argue in Chapter Ten.

7.6.2 Free discursive interviews and subjectivities

The choice of a free interview allows the interviewer to obtain more information about the person being interviewed and to adapt the questions to the emerging themes (Cardano 2003). Actually, I let the themes emerge from the interviewee's account in order to see what her/his agenda was and what issues were arising about professional life in her/his workplace. In accordance with my discussion in section 3.5, I see the worker's agenda as an expression of her/his subjectivity, that is, the emotions, thoughts, and personal senses which emerge in the narration of their professional lives and highlight what aspects and dynamics are more important for the worker in the workplace and s/he wants to represent to me. I have introduced my themes about learning connecting to what the interviewee was telling me. Very rarely I asked questions about learning experiences without having a context created by the interviewee in which my request of more clues fitted well. When I raised direct questions on experiences of formal learning (Mr G in section 9.5), I received a reply which denoted a change of tone of the voice of the interviewee, hesitations, and attempts to fit the answer with what the interviewee thought I was thinking about the issue. That confirmed to me that I prefered conversational interviews, in which I tried to elicit the freest as possible narrative of the interviewee.

In this process of adjustment between the interviewee's agenda and that of the researcher, it is not possible to avoid the role of the subjectivity of the researcher in shaping the discourse of the interviewee. As discussed in Chapter Three, every relation

is mediated by artefacts internalized and transformed into individual behaviours, and this brings subjective dimension into the social interaction. However, with the support of an internalized awareness of my subjectivity and its effect in social relations, developed through psychotherapy done for some years, I have tried to minimize the influence of my subjectivity in the interview and take a maieutic attitude to facilitate the interviewee in building his/her own discourse. This can be obtained by posing few and incisive questions, sending non-verbal signals to show interest and attention, and echoing the interviewee's words (Cardano 2003). I have drawn on my relational skills and empathy, with the aim of creating the conditions for listening to what the older workers wanted to tell me.

Thus, the free discursive interview provides not only a great deal of information about the interviewee, but also his/her discourse: expressive style, proceeding point by point, "punctuation", emotional tone, postures (Cardano 2003).

For the interviews have been conducted with the aim of eliciting the subjectivity of every older worker, the pattern of each interview has been unique and has not followed a fixed sequence of topics. For example the interview with Ms D, older worker in the enterprise E1, has started with the narrative of how she started working when she was very young, but soon the interviewee has moved to talk to what happened the day before, which upset her a lot, that is, the communication that she had to move to work in another department in the shop floor. This has led her to talk about the poor training received to do that new job, then how what she had learned in the previous years had gone lost, but at the same time is now part of herself, her need of knowing more about the components, the low consideration of the worker as a person, the physical aspect of her work, the regret for not having studied when she was young. I have connected my questions to these issues by asking more details about: her upbringing, the type of employment of her husband, the relations with her colleagues, and the communication of the change of job. I also asked why the current training received was not enough.

Even if I tried not to interfere with the narrative and stories that the older workers wanted to represent to me, I had in mind some themes that I wanted them to touch. As I said above, I tried to yield to temptation of asking questions directly, and tried to connect to the narrative of the interviewee. The themes which I tried to introduced in the course of the interviews include: work tasks, degrees of autonomy in carrying these out,

learning relations with other colleagues, relations with colleagues in other departments, opportunities of formal and informal learning, and feelings about new artefacts at work, new trends and changes.

When I could not ask about these themes, because it would have been as forcing a topic in the structure of the story with a risk of interrupting the flow of thoughts of the interviewees and losing some interesting data[66], I had to renounce to it and use the material provided in the interviews.

I believe that even when I try to adopt an everyday language to formulate my questions, as it happened in my interviews sometimes, they are still shaped by my interests, which are very different from ones of the interviewees. As Chase warns, from the perspective of narrative inquiry and quoting Sacks, these are sociological questions, because they are organized around our research interests and as such are likely to get sociological answers (2008, 71). That is, the interviewees speak in generalities rather than specifics, because they attempt to correspond to what they assume is our interest as researchers.

Chase stresses the importance of letting the interviewee to tell her/his stories, accept digressions and fully listen to them. What could look as a digression from the expected (by the interviewer) story might be integral to the narrative of the interviewee and represents a way to bring new elements as central to the story (Chase 2008, 72). This point is extremely relevant to my interviewing which aims at eliciting subjective aspects in working and learning.

Every interview has been transcribed in its verbal interaction (questions-answers) and non-verbal interaction, since the meanings given by the participants to events and situations can be detected and interpreted referring to these two planes of communication (Cardano 2003). I discuss this issue after reporting how I have dealt with ethical aspects.

7.6.3 Ethical aspects in the relationships with the interviewees

In the latter decades the ethical dimension of social research has grown in importance. As reported by Angrosino, the movement has started in the United States in the 1960s, where federal regulations mandated informed consent for all those taking part in

[66] This is only a risk. In Chapter Nine I report an instance of dynamic in which I apparently interrupted the narrative of the interviewee, but he really wanted to tell something to me and therefore was able to go back to what he was saying and introducing the story that he wanted to represent to me (section 9.3.1.1).

federally funded research, following some scandals in biomedical experiments (2008, 168). The ethic debates have then invested the social research and generated a wide range of ethical codes, especially in the Anglo-Saxon culture. After a progressive institutionalization of ethical procedures, there is now a growing interest in questioning those codes from feminist approach (Mauthner, Birch et al. 2002) and post-colonial perspective (Moosa 2013; Robinson-Pant and Singal 2013; Shamim and Qureshi 2013).

When I started my empirical work back in 2007, I was aware of the requirements from the Doctoral School about the ethical aspects of my research. I followed the procedures provided by the Doctoral School in terms of papers to submit to the Ethical Committee and examined the Statement of Ethical Practice by the British Sociological Association (British-Sociological-Association 2002). This latter states that its aim is to make the researchers aware of the ethical issues surfacing in the research processes and invite them to make choices on the base of principles and values, and the interests of the participants. It also says that it does not provide recipes. This seems related to the acknowledgement that research works can vary in styles and settings (British-Sociological-Association 2002, 1). For my work is about exploring subjectivities through free discursive interviews to elicit narratives, it involves a relationships with the interviewees based on trust. Narratives bring back memories, emotions, feelings, and even if the interviewees can protect themselves by selecting what to tell to the interviewer, nonetheless they share part of their personal stories with someone stranger – the researcher – but whom they have felt being worth of trust. Being trustful implies a moral responsibility for the researcher.

Thus the BSA ethical statements offered to me enough flexibility to reflect on the ethical practices in my research doings and act with care and responsibility in accordance with the situations I was encountering in my meetings with the interviewees and in the process of carrying out my research work.

As will be recalled, I have started my meetings with the older workers (and the other conversations with managers and trainers) by presenting briefly the object of my research and who I am. I mentioned that I was a PhD student and that my interviews were to produce data for my PhD research. I have also told them that I was a researcher working in an institute of research, even if on leave, and showed my business card.

I have then asked them to record the interviews and explained that I needed it to re-listen these latter, in order to analyse carefully the texts. I said that I needed to quote them in my research report with some sentences and I would have used codes instead of their names to warrant their anonymity. I asked them whether this suits them. All the older workers have accepted to be recorded and I do not remember any one uncertain in his or her reply to my question about using my voice-recorder, maybe in some cases just a bit aware of the digital-recorder on the table at the beginning of the interview. I was aware that the older workers from the enterprise E2, introduced to me by their managers, could have found difficulties in denying to participate to the research. However I was also aware that the type of interview (discursive) I was about to conduct allowed them to choose how far to be open to me. As I have already mentioned (section 7.6.1), I could see all of them relaxing after being in some cases initially hesitant, and even enjoying telling about their work and life (for example in section 9.3.1.2).

I obtained the consent to be interviewed and recorded from my interviewees verbally. I asked them whether they wanted a written letter. None expressed the interest in that. I did not prepare the letter and hand the letter out at the meetings, because I felt something incongruous in the context. As I already mentioned above (section 7.6.1), a relationship based on trust seemed to develop in the meetings with each interviewee. Putting forward a written letter could have been seen as a sign of distrust and suspicion, with the risk of producing distortion in their narratives. I will come back to this point in next sub-section.

I did not ask my interviewees why they have given to me their consent, but it is possible that they agreed to be interviewed because firstly they trusted me and secondly they saw some social value in my research. The British Sociological Association states in the Ethical Guidelines about the common interest in advancing knowledge in the relationships between researchers and sponsors and funders (British-Sociological-Association 2002, guideline number 42). Yet the BSA overlooks that the interest in contributing to the advancement of knowledge can be shared by the research participants too. It is also possible that my interviewees' easily accepted to be interviewed because interviews are the ones that very important persons grant to journalists and experts. I am a researcher, and I cannot exclude that they saw in me

someone in the power of being able to give them a chance to become part of the public sphere, even if in their anonymous voices.

The fact that I wanted to be trusted by them and they accepted to trust me is giving to me the moral responsibility of doing my best to i) cover their names and ii) disseminate the findings of this research as widely as possible. This latter commitment comes from the hope that I felt in the voices of some of the interviewees that they could be heard from outside their worlds and from what stressed in the BSA statements:

"Members [of BSA] should, wherever possible, disseminate their research findings as wide as possible …" (British-Sociological-Association 2002, guideline 60).

To cover the names of the people involved in the empirical work, the codes adopted to refer to them have been used not only in the research report, but also in the content of the files of transcription as well as the files containing the field notes stored in my personal computer (with a back-up on an external drive).

I realised only later on that the wider dissemination of the findings can lead to the disclosure of the identities of the interviewees. It might be relatively easy to keep the anonymity of the enterprises, but if someone from the enterprise reads the research report, he/she can easily identifies the voices of his/her colleagues. This issue has also been highlighted, even if in slightly different terms, by Moosa who carried out her research in a small community (Moosa 2013).

I want now to report about how I tried to be fair with my interviewees and have a reciprocal relationship. Indeed I did not plan how to do this, but I just remember that I had this desire with me.

Since I believe that trust resides in a personal relationship, I wanted to establish with my interviewees some personal links. I gave to my interviewees my mobile telephone number (which was not included in my business card). This has been particularly relevant in the case of the older workers in the enterprise E2 who were all men, and were introduced to me by their managers. I did that as I wanted to find a way of developing a direct relationship, not mediated by the managers, so that they could call me in case they wanted. Besides giving my mobile telephone, I asked their ones, justifying my request by saying that I could have contacted them in case I needed it. No one has called me since then and I did not call them, except Mr F from enterprise E2 to ask some clarifications and Ms B from the enterprise E1. Indeed I called this latter the

day after her interview to make sure that she was alright. She gave to me an interview full of emotions. So the day after, I wanted to hear whether she was feeling uneasy with her interview. But on the contrary she was very happy about it. So I realized that I had projected onto her what I would have felt in her place. As Miller and Bell note about feminist researchers, it might be the case that as a woman researcher, reflecting very often on the impact of my research practices on the others, I was overly sensitive (2002, 66).

For I was feeling during the interview that the establishing relationship with the interviewee was developing as unbalanced because they were disclosing their experiences and judgements to me, I let me go to some comments or references to personal experiences at the end of the interviews. In some cases, in particular with the women interviewees, the interviews transformed in conversations in the last part of the meetings. In general, the meetings assumed the pattern of having as two parts: the first one in which I acted as an interviewer keeping at the minimum the interruptions, and just to ask clarifications, and the second part in which I put forward my comments, reasoning, opinions, personal experiences related to what the interviewee was telling. I recall that my interventions were prompted by emotions arisen by the narrative of the interviewees and the genuine desire of sharing thoughts. However I have used only material produced in the first part of the meeting, dedicated to the interview, for my data analysis.

I am aware that there are differences and social distance between me and the interviewees, and that these attempts of sharing ideas and experiences did not clear the differences off nor counter-balanced the relation of power between me as researcher-interviewer and them. However I believe it is possible to develop meaningful relationships with the interviewees which are bounded by the activity of interviewing and exploring certain issues, in this case the personal stories about working and learning. This is the object – in CHAT language - that gives sense and direction to our research relationships. Yet I appreciate that each of the interviewee could have interpreted the boundaries of this in a different way, a point made by Duncombe and Jessop from a feminist point of view about ethics in qualitative research (2002). These authors warn that the interviewees can interpret that relationship as friendship and disclose too much, regretting it later on. My way of seeing this is that each of us – interviewer and

interviewees - act with respect to his/her image of our relationship. My responsibility and care is about sending all possible signs to make clear what my objectives are.

As I have thought only recently, having aimed at establishing a relationship, this will facilitate me to go back to my interviewees when I publish my research and need to renegotiate the consent obtained at the time of the interviews only for the Doctoral thesis.

7.6.4 Feminist and post-colonialist literatures on ethical practices in qualitative research

As a post-reflection over my research doing, I think I have implicitly followed a feminist ethics of care and responsibility and view ethics as the outcome of a process rather than a stage in the research process. I only learned recently that this latter point is made both in the feminist and post-colonial literatures to take into account that cultural contexts vary and with them the beliefs and values (Alldred and Gillies 2002; Miller and Bell 2002; Moosa 2013; Shamim and Qureshi 2013).

In the feminist approach to ethics in the qualitative research there is a critic to the underpinning philosophical conceptions of knowledge and subject to the informed consent culture (Birch, Miller et al. 2002). The informed consent procedure is based on the assumption that knowledge is transparent and unambiguous. That is, what the researcher explains about her/his research can be directly understood by the person to whom she is asking permission to be interviewed or observed:

"'Informed consent' involves the idea that good practice in research means providing 'adequate' information about the study for the researchers' side of the 'consent' procedure to be fulfilled and it constructs research participants as rational beings whose judgement must reflect and guarantee their own interests. This relies on the idea that the information researchers provide is unproblematic (correct, appropriate, accessible, adequate), that the subject has cognitive information processing skills and can make a rational decision in their own interests. As a consequence, responsibility then lies with the individual – a rational, autonomous subject who is in control of their own destiny. There is, therefore, little room to consider how the social context and emotional factors affect such 'processing' and 'decision-making'."

(Alldred and Gillies 2002, 158)

On the contrary, as pointed out by Ramazanoğlu too, the differences between researchers and research subjects can be relevant in term both of values and beliefs and of interests:

"Even if you conscientiously offer information, you cannot be sure of what people think they are consenting to. The researched are not necessarily aware of the nature of research activity in general, let

alone the specific instance you represent. What may be a burning issue for you may be far from their experience or interests. Your concepts, values, concerns and ethical stance may not mesh with theirs."

(Ramazanoğlu and with Holland 2003, 157-158)

Alldred and Gillies also point out that the subject implicit in the informed consent procedure is the modern subject, that is, a subject equipped with rationality, independent and able of agency (2002, 153).

This stance about what is knowledge and how the subjects develop is very much the stance that I have taken in Chapter Three and which informs my work. I think that my way of trying to develop a relationship of trust with my interviewees can be seen as consequential to my CHAT-influenced vision of the world: the older workers were attending different contexts and activities from what I was, and I could not take for granted they understood me. In CHAT language, I can re-word it by saying that we did not share the same meditational cultural tools or artefacts (section 3.3.3). Moreover subjectivities can vary, as well as personal senses given to activities, situations, and contexts, due to the multiplicity of experiences (sections 3.5 and 4.5). Therefore any new rapport should begin by a careful attention about the implicit cultural and subjective differences and not force into it cultural tools whose meanings need to be properly shared and agreed. This is even more important when one is trying to build a relationship of trust, which is the case that I am discussing here.

In the light of this, the request of signing an informed consent could challenge the relationship between the researcher and the research subjects for it is an artefact which does not fit with the request of trust from the researcher, a point made also by Miller and Bell too (2002, 65). In the case of my research, the discrepancy between asking for trust and at the same time submitting a letter of informed consent might be felt for historical reasons. In Italy, it was enough to give the word to guarantee an agreement until few decades ago. Now written contracts –the letter of informed consent implies a legal contract – might be viewed as substitute of giving the word, when this latter is thought not to be sufficient. With hindsight, I can now explain my feeling of inconsistency of putting forward a informed consent letter to my interviewees while I was engaging in a relationship based on trust: I was feeling that it would have been as diminishing their words of agreement to be interviewed.

I present and discuss the analysis of the interviews in the next section.

7.7 Analysis of the interviews

7.7.1 Transcription of interviews

The transcription of interviews is important to ensure the quality of the translation from spoken to written word "as a vital aspect of rigor in qualitative research", an aspect which is often overlooked in the debate about how to strengthen the qualitative methods (Poland 2002, 630).

A number of notation systems have been developed in the context of conversation analysis to tend to produce a transcription able to capture all the elements of a conversation (pauses, interruptions, emphasis etc.). However, as suggested by Poland, the selection of the notation system depends on the aim of the research and limits of level of attention to detail of both the transcribers and researchers. I add that there exists a trade-off between precision of the transcription and readability of a text. Therefore I selected a notation system which would create a text still able to reflect the older workers' ways of telling their stories, but without going into to too much detail. I have compensated the (little) lack of detail transcribed and the already manifest difficulties of reading the transcribed text by listening to the interviews while I was carrying out the analysis.

The transcription has followed the notation system developed by Cardano, similar to the one proposed by Poland as an abbreviated version of other more complex ones (Poland 2002, 641; Cardano 2007). In this type of transcription, the text is seen as a narrative constituted of signs imbued with emotional tones and connected to each other in the construction of meanings (Cardano 2008). Cardano distinguishes two forms of communications between the interviewer and the interviewee, verbal and extra-verbal. These distinctions are made to collect all the information contained in the interview to interpret the meanings given by the interviewee to her/his talk. In the interview text five levels of events are distinguished. The first three levels refer to the flow of linguistic communication between the interviewer and the interviewee and distinguish three forms of communications: 1) the speech with identification of questions and answers, languages (foreign words, dialect), incomprehensible words, broken sentences; 2) the para-language expressed through tone, timbre, intensity, pitch of the voice, pauses, interruptions, hesitations; 3) the body language such as coughing, laughing, giggling, weeping. The fourth level is about the interaction between the interviewer and the

interviewee, with a focus on overlapping sentences transcribed with a special notation. These four levels of attention in the transcription generate a text which aims at being a verbatim transcription. Cardano's transcription notation system adopted in this research is schematized in the Table 7.1.

With this type of verbatim transcription the text presents an unusual prose for a written one and difficulties in reading it. As Pollard points out:

> "Verbal interactions follow a logic that is different from that for written prose, and therefore tend to look remarkably disjointed, inarticulate, and even incoherent when committed to the printed page. Inherent differences between the spoken tongue and the written word mean that transcripts of verbal conversations do not measure up well to the standards we hold for well-crafted prose (or even formal speeches), with the result that participants often come across as incoherent and inarticulate (Kvale 1988)."
>
> (2002, 633)

For this reason and for awareness of various sources of discrepancies between the transcripts and the digitally recorded interview, as already mentioned above, I have carried out the analysis of the interviews listening to and reading the transcripts in parallel. This also offers the possibility of analyzing those aspects of the interviews that cannot be always written down in the transcription such as the tone, timbre, intensity, pitch of the voice.

Cardano integrates these levels of transcription with a fifth level which is represented by notes on the setting in which the interview has taken place as well as of all 'disturbances' that occurred during the interview. Cardano explains that this has the function of giving information to understand the utterances and comments of the interviewee.

To my knowledge there is no other systematized approach to transcribe interviews closer to CHAT. Therefore I have adopted a modified version of the method devised by Cardano. While the transcription of the interview can be used for the purpose of a CHAT informed analysis for the richness of its notation to interpret the personal sense of the interviewee with respect to the object to which her/his working practices are related, the description of the context can be richer compared to the one required in Cardano's method. As I explain in sections 7.4 and 7.6.2, the free discursive interviews have aimed to collect data about the subjective dimensions in the industrial activities, but keeping the focus on the material and social aspects of them.

Table 7.1 – Transcription notation system adopted in this research

Level	Code	Description
1	[overlapped talk]	The use of squared brackets indicates overlapping utterances
1	Plain text [translation]	Words in dialect in plain text and then translated between squared brackets
1	// (?)	Inability to understand what was said
1	(text)	Added text to make the utterance clearer
1	***	Instead of a name to guarantee anonymity
2	eee or any other repeated letter	Prolongation of sound rendered with a repetition of vowel or consonant
2	…	Pause longer than approximately three seconds
2	CAPITAL LETTERS	When words are uttered with high volume of voice
2&3	/ talk / (descriptive text)	the talk between // is coloured by a change of tone, timbre of the voice, etc., as it is described in the text between round brackets; the same code to indicate laughing, crying etc.
3	// (descriptive text)	Description between round brackets of gestures or sounds which do not overlap talk

Therefore the transcriptions of the interviews of this research include a full description of the settings, information about the process of choice of the location of the interviews, and, when relevant, a report of what was going on before and after the interview. Some interview transcriptions may refer to further contacts with the interviewees (i.e., calls, meetings, emails). This is because my aim has been to collect any data emerging in my contacts with the two firms about their social and material processes.

I now turn to the description of how I have conducted the data analysis.

7.7.2 The analysis process

In this research the data collected through the interviews have been analysed through the constant comparison method (CCM). This method has been developed by Glaser and Strauss and is consistent with grounded theory (Glaser and Strauss 1967; Strauss 1987; Glaser 1992). Because this research is carried out drawing on the theoretical framework outlined in the preceding chapters, the application of CCM has served a partially different purpose than in grounded theory. In this case I have used CCM, not to develop a theory, but to refine concepts. In fact, the theoretical framework has provided my data analysis with concepts such as hierarchy of motives (self), motive/object of activity, action, personal sense, learning needs and motive for learning. In order not to constrain the richness of the working experiences of the older workers and the complexity of the activity system of enterprises by the existing theoretical categories, I have compared the theoretical concepts with the categories emerging from the data collected. I intend to demonstrate in this section how the CCM has been the appropriate means through which to achieve this aim.

I have followed the procedure put forward by Boeije (2002). Her approach is based on two activities: fragmenting and connecting texts. Texts are fragmented when text-bits, which represent a theme relevant to the research questions, are taken out of the context and coded. As validated by Sivesind (1999) to whom Boeije refers, the content-coding is a tool for the researcher to schematize and summarize the relevant elements in the interviews. The process of connecting these elements within and between interviews takes place in the researcher's mind. I will return to this concept later.

Boeije identifies a number of steps by which to conduct the comparison. Because she had interviews from couples, Boeije had a five-step procedure, that is, she also had

comparison in pairs at the level of the couple and comparison among couples (Boeije 2002, 395). However, generally, three levels of comparison occur: comparison within a single interview, comparison between interviews and comparison of interviews from different groups. In this research I have utilised these three steps. Yet, because the focus is on the relation between strategies of production and subjective dimension in older workers' learning, the first two steps are only considered preliminary to the analysis in the third step: comparison between the two enterprises.

In the next sub-sections, first, I illustrate in more detail the content-coding process as discussed by Sivesind (1999) and then I explain how I have adapted Boeije's procedure to the data analysis of my empirical work.

7.7.3 The content-coding process

The coding has been carried out following the model of content-coding of text-bits (Sivesind 1999). To appreciate the specificity of this model, it can be useful to contrast it with the variable-coding. As stressed by Sivesind, the variable-coding, oriented to creating a variable, can impoverish the richness of data collected through a qualitative method. Content coding, on the other hand, is more flexible to reflect the nuances in the content of the text and has the prerogative to investigate the meanings that individuals give to the situations. Because these are not always expressed with clarity, a coding that can reflect the ambiguous and elusive language is needed. Variables have to be specified in their values or categories, which need to have clear boundaries and be exclusive. This type of definition is not appropriate when the analysis takes into account subjectivities. In the content-coding it is not important if different text-bits identify overlapping and contradictory aspects of the same theme. In this type of coding the whole interview with its verbal and non-verbal elements support the coding.

The content-coding and the variable-coding also reflect two different procedures to highlight causal relations. The association and correlation among the variables are found through statistical techniques. When coding of texts is oriented to create variables, it becomes possible to apply the statistical techniques. When coding of texts is oriented to the content, the relation among the codes is visualized in the researcher's mind, through a process which is not quantitative as in statistics, but follows creative and logical ways of connecting categories.

I will now briefly sketch the description of each step of the Boeije's procedure and specify my stance about her indications.

7.7.4 The steps in the comparison process

The comparison within the interview starts with the open coding and ends with a summary of the interview through which an interpretation is developed and contradictions are pointed out. In my research, the coding has not been completely open, as I have examined the interview within the theoretical perspective developed so far. As mentioned previously, I have implemented the theoretical categories as tools to interpret, but also as tools that may need to be refined when they are compared with the narratives of the people interviewed and new categories can emerge.

After the single interviews have been analysed, the second step has begun, that is, to compare interviews belonging to the same group. In my research, the groups are represented by the two enterprises. The fragments from interviews of enterprise 1 (E1) and coded as dealing with the same theme have been compared across the interviews (axial coding). The same has been repeated in case of enterprise 2 (E2). This has helped make an inventory of themes in each case study which is reflected in the content of Chapters Eight and Nine.

The third step involves a comparison across groups. Two types of result have been obtained from the comparison between the two firms (case studies): different themes and codes and similar themes and codes. I have developed interpretations of those similarities and differences in Chapters Eight and Nine and discussed them in the conclusive remarks of those chapters and in the final Chapter Ten. It is at this stage that my ideas about the relation between strategies of production and older workers' engagement and learning in workplaces have developed. It is also at this stage that the aforementioned Boeije's process of imaging and visualizing has benefited by the mediation of theoretical categories.

Boeije (2002) mentions the possibility of using other sources of data through the steps and their support in developing interpretation. I have used a variety of information (interviews with managers and field notes) about the two firms to generate understanding and interpretation of the themes from the interviews with the older workers.

In her research on multiple sclerosis and couple relationships, Boeije used the first five analysed interviews to select further interviews. I wanted to add interviews with older workers who were less engaged with their tasks in both case studies, but the gatekeepers did not support me. For this reason, further research is needed to find out about other possible types of engagement at work besides the ones which I have identified. I discuss this in Chapter Ten.

7.8 Concluding remarks

For its explorative aims and to be consistent with its CHAT influenced perspective, the case study strategy has appeared as the most appropriate for this research. Two case studies have been carried out, one on an enterprise identified as approaching the mass production ideal type and the other one on another firm considered to be similar to the flexible specialization model. Data have been mostly collected at individual level, configuring multiple embedded case studies. Data from older workers and other key individuals in the enterprises have been collected through free discursive interviews (fifteen) and a few formal and informal meetings. The interviews have been transcribed following a code of notations that highlights subjective aspects in the individual narrative. All the visits to the enterprises to interview or meet people were taken as an opportunity for observation and other types of documentation on the two enterprises have been collected. These different sources of data, as well as interviewing a vast range of personnel, have provided multivoicedness to the research account, as well as consistence with respect to certain aspects of the issues explored in this study.

The analysis of the interview transcripts were carried out with constant comparative method (CCM) that I apply in an original way. As I commenced this study by employing and developing theoretical categories, I have used these to support the interpretation of the themes surfacing from the interviews. However, they were seen as provisional and in need of being refined in comparison with the themes and dimensions emerging in the interviews.

Indeed the theoretical framework - drawing on CHAT, educational gerontology, literature on industrial sociology and workplace learning - has offered a set of theoretical conceptualizations which have allowed me to develop ideas about the

relations between strategies of production and older workers' engagement and learning in workplaces.

Together with more details about my fieldwork, I now present my data and the connections I elaborated between these and my theoretical ideas in the next two chapters.

8 Engaging in vocational learning in mass production

8.1 Introduction

As highlighted in Chapter Seven, the empirical work has been carried out by two case studies, corresponding to two enterprises, one mirroring the basic characteristics of the model of mass production, the other one closer to the ideal type of flexible specialization. In this chapter I start to present the analysis of the empirical evidence collected in the fieldwork for the first company whose strategy of production is a paradigmatic example of mass production.

The analysis begins with an overview of the company and the challenges it is facing to cope with the economic changes as they emerge from the interviews. This sets the scene for what follows, which focuses on the older workers' accounts of their work and professional life. As I explain in section 7.2, the adoption of the CHAT perspective imposes the necessity of analysing the processes and the connections older workers make when they talk about their workplace and tasks. I start by depicting the workers' task, which is assembling components. Different aspects of work surface in the interviews and I present them. Through these aspects the position of workers in the company emerges.

I then present the analysis of what was possible to pull out from the older workers' narratives about their subjectivities. As I argue in Chapter Four (sections 4.4 and 4.5), past experiences are what make older workers distinctive and the process of making sense of experiences and activities is what forms people's consciousness and personality (section 3.5). I also investigate their inter-subjectivity as the dimension of the social and professional interactions at work, where the working practices take place and issues can emerge.

After having presented the data about what older workers do and how and from what position they do it, and their subjectivity and inter-subjectivity, I move on to highlight whether and how they are engaged in their work. According to the framework developed in section 5.5, engagement is the presupposition for the development of learning needs and it depends on the position workers' have in the activity and their subjectivities. In the last part of this chapter, I discuss the learning activities in which older workers participate and the connection of these to their learning needs.

I connect the data to my theoretical framework in the conclusive remarks of the chapter where I start to explore through which processes subjectivity is related to engagement on the shop floor in the case of a strategy as mass production, exploration which is completed only in Chapter Ten, after the analysis of the second case study in Chapter Nine.

8.2 Working in mass production

E1 is a supplier of parts of machines[67] which are produced for the E1's customers. These customers are multinational companies and their orders include strict requirements about the quality of the production process and products. In other words, E1 is a supplier to other companies which produce the final product.

Besides four interviews with the older workers, I also interviewed the director of the personnel and two trainers (see Table 8.1).

The enterprise has grown over some decades from the dimension of a craft activity at the beginning to the current company of nearly one thousand workers. The production is mainly organized in assembly lines. In the last 30 years it has been decentralizing the production in developing countries. In the 1990s, the management tried to transform the mass production to lean production, without success. I will come back to this point later in this section.

Nowadays the organization of work is based on assembly lines with around ten workers, under the direction of an operator. The HR director says that workers change post every two hours to limit physical problems (field notes, 12 February 2008). These groups are then part of an area managed by a foreman (there are no forewomen in the enterprise). All the areas are then under the control of a director of production. Most of the assembly lines are partially automated, that is, they are controlled by reprogrammable equipment[68]. E1 can change the characteristics of the products to either innovate or respond to the customers' requests. E1 develops products' changes in its Research & Development department. Innovations in the products are then tested in the plastic department where skilled workers operate a computer aided machine to forge the parts which will be assembled with other parts on the assembly line.

[67] I do not specify what kind of machines to protect the anonymity of the enterprise.
[68] This information is provided by Ms B in an exchange of emails.

Table 8.1 – List of people interviewed in company E1

Name in code	*Role*	*Age*	*Birth year*	*Department*	*Gender*	*Education level*
		(March - July 2008)				
Dr[69] Q	HR director	48	1960	HR	M	graduate
Ms B	older worker and trade union delegate	50	1958	shop floor - assembly line	F	compulsory school
Ms C	older worker	49	1959	shop floor - assembly line	F	compulsory school
Ms D	older worker	54	1954	shop floor - assembly line	F	compulsory school
Ms A	older worker	44	1964	shop floor - assembly line	F	upper secondary
Dr T	director of the centre of vocational education	46 (estimate)[70]		external company	M	graduate
Dr L	trainer	35 (estimate)		external company	F	graduate

This enterprise also organizes the production through subcontracting to small businesses where conditions of work can be precarious and instable (Ms A's and Ms C's interviews).

E1 sells the assembled parts in the American, European and Asian markets (Dr Q, par.105-110) [71].

In the 1990s the management tried to implement a quality-oriented production based on teamwork. According to Dr Q, the director of the human resources department, this attempt was not successful because the process of implementing the new organization of work was interrupted by the economic crisis at the beginning of 2000. There are also

[69] In the Italian context "Dr" refers to the educational level of graduated. I leave this label even if in the English language it would refer to a Ph.D level of education. In Italy this title has been used to distinguish the most educated people from the less one, considering being graduated as a very high and special title. In particular older generations believe it. It is a cultural trait which helps understand the relevance of social differences between the workers and the management. The trainer and the director of the centre of vocational education are Dr too in the sense highlighted above. The interviews to the older workers will show how they appreciate that social difference of education and position, which however does not prevent them to be critical towards the management or the trainers.

[70] I do not know the birth date of this interviewee and the next one in the table, so I have made an estimate of their ages. Dr T gave to me the consent to use his interview, which I did not record, only in general terms. So I will not refer to his interview. However the conversation with him has provided some insights which I have used to interpret the interview with Dr L, trainer in the same centre of vocational education.

[71] For each excerpt I report the name in code of the interviewee, the paragraphs of the interview transcription.

other interpretations of that interruption offered by the older workers interviewed. In their opinion, the experiment was not giving the expected results and there were tensions among the managers. The manager who was leading the programme of introduction of the new qualities-oriented methodologies left the E1 at the end of the 90s. At that point the project ended.

Nowadays the quality is controlled through procedures active at different stages in the labour process which consist of filling in forms. According to Dr. Q, quality has become essential in mass production, because customers require it[72]:

"Let's say that t- the quality ehm in the span of the last thirty years, I mean, has become increasingly requested by the customer, thirty years ago stopping on the motorway because, I mean, the transmission belt has broken was thought as a event, as now also in China, as a normal event, no? I mean, the fact of buying a television, and finding a fault after fifteen days, used to be thought as a normal fact, I call the technician, I have the warranty, I ask for repair, well, never mind, it can happen that I had bought a- a television // (clearing his voice) which had some fault. Now this has become unbearable, so that the qualitative controls both by the producer in exit, and by the final ehm producer in entrance, have become ferocious."

(Dr Q, par. 177)

Dr Q says that, in general, in the company E1 the rate of faulty parts is excellent (par. 209) and "in some cases" very low (par. 177). He notes that however it can happen – as it happens to any enterprise even those famous for quality such as Toyota – to have a problem of quality with some products.

He refers to the plan of implementing Toyotism[73] in E1 so that the physical aspects of work could also improve and occupational illnesses decrease (Dr Q, par. 93).

Shortly before the interviews, E1 had made an important investment in vocational education and training, involving the whole shop floor workforce, including the foremen and operators. E1 has spent some hundreds of thousands of euro (including the cost of the missed hours of work) to organize a vocational course devoted to various issues. E1 has also received funding from the European Social Fund and the local government to run this course. There were nearly 60 classes of 10-12 workers each. Each course lasted 16 hours and dealt with three types of issue: safety, quality and communication. According to the HR director all these topics are very important for E1: the first one is relevant to avoid the economic cost of work accidents for the company

[72] For a complete list of the conventional signs used to transcribe the interviews see Table 7.1 in section 7.7.1.
[73] I discuss this type of strategy of production in Chapter Five, section 5.4.2.2.

(par. 29); quality is strategic; and the third one can impact on work atmosphere. He lists the topics of the course:

"the first of course is that of giving emphasis ehm to to the safety aspect which for sure is the primary aspect and most important that one could experience in a firm, no? everything can happen but the person ehm hurts himself/herself[74]*. The other aspect: to stress the strategic value of quality and show ehm the operational instruments through which one makes quality, they also are instruments of bureaucratic character because there are the instruments in which ehm, I mean, are, they are called control papers in which the employed (to the assembly lines) have to report possible faults and in which, I mean, the /performances/ (in English) of qualitative character are recorded. Then we have done something very innovative, in the sense that we have given some basics on communication, hence we have started to say what is communication, to define the /feed-back/ (in English), to defineee the concept of transmitter and receiver and so on: this to give instruments of cognitive character which impacted positively on the company climate."*

(Dr Q, par. 29)

This vocational course is recalled by workers, the director of human resources and the trainer as an intense and troubled one. Accounts from these persons differ according to their position. The workers say that workers took the occasion to express their unhappiness about how they were treated by the foremen and in general by the management. The director of human resources interprets this as a weak motivation to learn, which rapidly fades away when faced with some difficulties and despite of the efforts of the management to offer interesting courses. The trainer confirms that the workers had given vent to their anger during the courses and that it was difficult to obtain a good outcome from the courses because the workplace organization did not change and implement enough of the safety practices which were one of the focuses of the vocational course. I will come back to this issue later on in section 8.6.

The following sections highlight the difficulties of combining the mass production strategy with the need for assuring high quality, as requested by the E1's multinational customers. With reference to the CHAT perspective, the tension between quantity and quality as aspects of the mass production in E1 is relevant to the discussion of what the object of its activity is. As argued in Chapter Three, the workers' mediated relation with the object of the activity represents the focus of a CHAT influenced analysis of the engagement in learning.

In what follows, I use the older workers' accounts to offer an interpretation of what it is like working on an assembly line and whether and how they engage with their jobs. The

[74] Dr Q uses a neutral form, which I translate mentioning the two genders. I will adopt this strategy in all the following quotations.

reconstruction of the features of the working activity in which older workers are involved is crucial to discuss motive for learning from a CHAT perspective.

8.3 Older workers' object: the task of assembling

Ms C tells about the repetitiveness and monotony of the job at E1 where she works on the assembly line. She started working when she was 16 years old and has been employed in small firms which use to produce components and supply other firms like E1. She is now 49 years old and was hired by E1 a few years ago, when the small firm where she used to work went bankrupt. At that time, that firm was working to supply E1. In this excerpt she compares the differences between working on the assembly line at E1 and working at "desks" as she used to do in that small firm. Apparently the desk is a small table where the worker assembles all the components to obtain the part. Ms C recalls that in that small firm, when a new tool was necessary to assembly the components, she used to be involved in building it. In the excerpt there are also utterances by Ms B: she is the older worker and trade union delegate who mediated between me and the E1 workers, as reported in section 7.5. Ms C's account, prompted by one of my questions, is about what it was like to start working on an assembly line. I report the excerpt at length to show the richness of elements involved in the Ms C's assessment of working on the assembly line and how these emerge from the comparison between the assembly line and the desk as two different ways of organizing the task of assembling components. These elements are: variety of operations, space of movements (possibility of "looking at" different things), implications for the self, autonomy, creativity. In what follows are the words of Ms C, in turn with those of Ms B and mine. As illustrated in section 7.7.1, I use squared brackets when our words overlap:

"Ms C – Well let's say that you ehm deal with a position in the line, you are in your position, because even if sometimes you are tempted to look at eh, however you deal with your position and that's all, while on the oppositeee outside perhaps- yet however let's say it is not as the desk, there, the desk you used to do that, then maybe- in the line [once that]

Ms B - [you do your operation]

Ms C – you do your operation and that's all, it is not that

Ms B – at the desk you do more operations

Ms C - you do more operations

Me – And was iiit the same for you? [Wasn't it that you liked]

Ms C - [Let's say that]

Me – more one than the other [one]

Ms C - [me who I know-] I was the one who had been always working at des-, let's say also in the past it was more various, it was- I liked more the desk, there, than the line because the line for me became monotonous, no it is becauseee

Ms B – But actually it is like this

Ms C - it is like this, for me the line becomes monotonous, especially when you start doing //(noises made by her hand beating the surface of the table as to mimic a repetitive operation) me who I am one who is quite- but also in the normal life I am one who deals with things quickly, I am //(?) me, cooking, //(?) I make an effort, there, I am not one who sleeps.

Ms B - Yes, she is not one being static.

Ms C - No, I am not one being static.

Me – And what about putting more or less head eh is there the necessity of thinking a little bit more when you work [at the desk?]

Ms C - [Well me even] if at work, say, [when it is-]

Me - [or also] at the line you have to think of [all the times you do the operation?]

Ms C - [No, at line you do not have to think] I for instance when I used to work outside sometimes there were to- to do some things, no? New parts or thing were produced, there was to make, so to speak, a little tool, a thing, we used to get down to it, I used to create it the tool, I used to think of it with my employer, so to speak: "What do you think? Shall we do it in this way?", there, I used to create it."

(Ms C, par. 248-280)

As shown in this excerpt, Ms C says more about the work at the desk than the work on the assembly line. She also points out the contrast between the repetitiveness of the same fragmented operation and herself as a person who is dynamic. She depicts her past experience of work at the desk as more interesting. Yet she does not complain too much about the monotony of the assembly line. In other parts of the interview she says that she was looking for a bigger firm so as to have a more stable job. Hence it is possible that the spirit of acceptance she shows is the outcome of a compromise between having better conditions of employment and a less interesting job.

It is relevant to note that Ms C also says in the previous excerpt that the task of assembling does not require thinking while she is working (Ms C: "No, at line you do not have to think").

According to the director of HR, Dr Q, this is the attractive aspect of this job for these workers, especially when they are women: they can think of their familial issues or chat with the colleagues while they are working.

Ms D's account seems to correspond to this view. She says that creating a nice working environment with her colleagues is important to her for the job can give little satisfaction. She feels lucky because she has had nice colleagues almost always and this is one of the reasons that made her to decide to carry on working at E1 instead of

leaving it to work with her husband who set up a business many years ago (see section 8.4.1) (Ms D, par. 131-139) [75].

She also notices that the pace of changes of products has been increasing lately. This implies the necessity for more frequent training, but also a turnover of staff with whom one works:

"Ms D – […][76] then I am realizing, I was thinking about it now in these days, once the periods were long, ehm when you- ehm were, for instance in a production even if it was new etcetera, the change was longer, now everything is /rapid/ (with emphasis)

Ms B - Eh yes

Ms D – rapid, a lot, for instance even a new product, you make it, after two years, three years it already becomes obsolete, and therefore you change again, for instance look at us all these these productions which which we are doing, slowly slowly in time they are aaall

Ms B - Obsolete

Ms D - all obsolete and so you change, you always have to adapt continuously, work, new productions, ehm new people, everything."

(Ms D, par. 151-159)

Despite the fact that sometimes workers get on well with other colleagues on the assembly line, there are other aspects of their working situation which results in them not being completely satisfied. In what follows, I highlight four aspects of their working situation. The first aspect is related to the object of the activity and how this is reflected in the working practices: in particular the tension perceived between the aim of reaching a certain number of parts assembled per day and the quality requirements. The other three issues are about the conditions of work: the perception of being considered just as functional to the production, the physical problems due to the repetition of movements and finally the rigidity of the management in responding to the workers' personal requests. I will argue later how these aspects are relevant with respect to the issue of motives for learning. After the discussion of these various aspects of the workers' object activity and the subjective and inter-subjective dimensions (see 8.4), I will use their accounts to highlight their engagement more specifically in section 8.5.

[75] There is also another reason that made her decide to keep her job at E1, related to preference for avoiding the risk both her and her husband working in the same company, in case of economic troubles.

[76] I use in this excerpt and the followings ones three dots between squared brackets […] to indicate omitted talk from the interviewee's turn which I consider not relevant to the issue for which I want to provide evidence.

8.3.1 Mass production: the focus on quantity and the issue of quality

As mentioned in section 8.2, the company E1 finds it difficult to implement procedures to enhance quality. The workers interviewed seem to experience these difficulties. It seems that on one hand the enterprise does things to obtain quality: the management introduced forms to fill in at different points of the labour process and organized a course to explain this new quality system. On the other hand workers do not operate in conditions adequate to achieve quality. The older workers give an account - in the interviews - of their efforts to produce not only quantity but also quality, yet they find themselves without full support to do it. It is the opinion of Ms B that even the foreman of the shop floor does not work according to the quality procedures and does not have control of the issue (Ms B in Ms C's interview, par. 1636-1742).

The issue of the relation between quantity and quality is now pursued referring to the accounts of the different older workers who were interviewed.

When workers are engaged in the quality production, this can be the outcome of previous working experiences either in other companies – as in the case of Ms B – or in the same company E1 – as in the case of Ms D. In her working life at E1, Ms D worked on the assembly line in the first few years, and then, for twenty years, she was in charge of controlling the quality of the process. In that period she received a lot of training on quality. Now she is back to the assembly line because the quality control has been re-organized. This passage seems to have gone smoothly for her. I discuss it in section 8.4.1. Now she controls the quality while she is assembling. Yet her relation with the object of assembling and caring about the quality of the product is a sort of personal motive and goal (see section 8.4.1.2). Hence in the case of Ms D the aim to achieve quality has been internalized and now this worker seems deeply committed to care about it. Yet the overall picture offered by Ms B is about a production which is geared towards quantity. This also emerges in the account of Ms A, who finds it difficult to get support to enhance the quality of the production on the assembly line that she manages (see 8.5).

Ms B says in her account that workers do not treat the electronic components with care and that the person in charge of the quality does not intervene to draw the workers' attention to how to handle these components. The careless way in which these components are treated may create faulty parts later in the process. Yet, according to Ms

B, nobody intervenes to enhance the quality of the process. She disagrees with the E1's management which – it seems to her - just wants to focus on quantity:

"And yet you also have to care about the production, you cannot only make quantity, because me for example just two weeks ago I have told theee boss of the quality off because me ehm having worked in the electronics and us making a a product of- electronic that analog, //(sound of cluck) you cannot the circuits ehm which are electronic with these components throw them as potatoes. ... I have said to him "one cannot work in this way", because what do you show to people ... couldn't-care-less attitude. That this, you d- d- do not work with that standard that way ehm to have the shrewdness not to waste, that that the product is all right anyway. Doing like this you do not work well. One can not not work thus only to haveee a lot of pieces.

Me – That is, these components are treated really by hand, thrown there while on the contrary you say that they should laid down

Yes laid down

Me – [with care]

[with care] why? Because these components which are put down on this circuit they are so fragile, that they can crack, you do not realize it and send the product awayyy. Yes maybe the machine then discards it, no? it to you, but how much waste you have?

Me - [of course]

[you have] also to look at this. Because if I manufacture, I should not have a lot of waste, otherwise it does not make sense. On the contrary we have had a lot of it and I have fought for this."

(Ms B, par. 492-504)

A few turns later Ms B adds:

"that I have said this thing ... anddd the boss of the quality has said to me "yes you're right, one should not blah blah blah" yet it is remained like this. That is, nothing has been done to enhance, to work in a more decent way."

(Ms B, par. 528)

Ms B gives us a nice example of a practice – i.e. the way the electronic components should be treated – which can discriminate a quantity-oriented practice from a quality-oriented one. Yet there is at stake a transition to a new type of production mediated by a new type of component, an electronic one, which needs care in its manipulation. The use of electronic components represents thus a transition from producing analogue parts to producing electronic parts, which implies – as illustrated by Ms B's excerpt – a different way of manipulating the components. Ms B's excerpt is a good illustration of the complexity of the transition from a quantity and analogue goods-oriented production to a quality and an electronic-oriented production. It highlights that the latter implies a whole structure of relations oriented to quality. It is not enough to have a quality department in the organization of production, and forms to fill in, it is also necessary that the production is organized so that quality is achievable and all the employees, whatever their position, act coherently to the aim of achieving a good quality level of

the production. Ms B's account indicates that the low level of attention to the fragility of certain electronic components can be interpreted by workers as a signal that quality is not relevant.

If I compare the accounts discussed in this section to those of the management (see section 8.2 when Dr Q says that E1 has an excellent low rate of faulty parts) the object of the activity in the company E1 appears not to be completely clear: is its object 'manufacturing quantity of parts' or is its object 'manufacturing quantity of parts achieving, at the same time, high quality of the parts'? In this section the workers interviewed complain that they do not receive enough support when there are problems with the rate of faulty parts (Ms A) and when procedures are not properly followed (Ms B).

In Chapter Five I have discussed that when the strategy of production is quality in quantity, also relations between the management and the workers are expected to change towards a more cooperative model in order to get everybody involved in the process of enhancement of the production. In the following sections I analyse what emerges from the interviews about how workers feel they are treated in company E1.

8.3.2 The relation between workers and superiors

One theme that emerges in the interviews is the quality of the relations on and around the assembly line. The issue of interrelations in E1 will be surfacing all through this chapter. As discussed in Chapter Five and mentioned a few line above, when the strategy is quality in quantity the relations among the personnel should be characterized as a cooperative model. In this section I want to show the type of relations within E1, from the point of view of the older workers interviewed.

Ms B reports that the workers on the line (I remind the reader that they are mainly women) are referred to by the management in Italian as "le manine", that is "the little hands", because 'what matters is to have fast hands'. Apparently this way of referring to the workers was introduced in the company E1 some years ago by a general director[77] who used the nickname "le Marie", in English 'the Marys' (Ms B in Ms D's interview par. 563-575). 'Mary' is a typical feminine name in the countries with a dominant

[77] Indeed the reference to factory workers as hands is a very old fashion. Thompson mentions that it was already being used by intellectuals in the 1800's (Thompson, P. (1983). The Nature of Work: An Introduction to Debates on the Labour Process. Basingstoke, Macmillan., 47).

Christian culture. Ms B wants to say that workers are considered just for the ability in their fingers, which are smaller and defter than those of men. Ms D adds that she does not accept it because she wants to be called by her name and surname to show her respect, to acknowledge her dignity.

Ms A thinks that her foreman is a very good organizer, but he is very formal, he communicates only via email, he is rigid and it is not possible to discuss with him. Ms B uses nearly the same words (Ms B, par. 346).

Ms A adds that "he [the same foreman] lacks a bit the human sense [in the relations], so there". She thinks that they do not have problems about how work is organized; the problem is managing people (Ms A, par. 903-927). She complains that there is no opportunity to talk about this:

"If the product is not good, then he might do a meeting and say why it is not good. But if a line does not work, nobodyyy no-nob- there has never been a line a a meeting forrr the problems that one has with peopleee orrr no this no. Just there are meetings just if there is a problem about the product and that's all. […] the organization of the of the personnel ehm ... and of work is practically that and therefore is quite rigid, non. You have to know to do your job well and that's all, to the-the best one can do and that's all, however otherrr spaces to give youuu about how work could be organized better, there is not this, they do not care for this at all /eh, eh/(smiling).

[…]

Me – Hence the tensions you have with your boss of the manufacturing department may be about small things

[…]

Yes or about not to have made enough production, that yes, however sometimes, if you don't manage, (it is) because the machinery doesn't have- has some problems. You say him it, you write him it ... and then he replies to you to you and things go on like this, however always using e-mail / eh, eh / (smiling)."

(Ms A, par. 879-911)

These remarks of Ms A are interesting for she contrasts the boss's interest in issues related to products with his carelessness about issues related to management of the workers on the assembly line.

The little importance given to relations also emerges in Ms B's interview when she talks about the time of her hiring and how the relations with the new colleagues were not good. Ms B relates how she was received by her colleagues when she started working in E1. Even if she was an expert worker (see sections 8.4.1 and 8.6.2), she needed some support from her colleagues on the assembly line, but for some reasons they were against her (Ms B par. 254). Once, still at the beginning of her employment at E1, Ms B got wrong a part and instead of drawing her attention to the mistake, the colleagues took that faulty part to the foreman, to her great surprise, as she was still a novice and

learning the new job. She complained to her foreman about this, but she was disappointed that he seemed to be resigned to this and commented that the shop floor was “a jungle”, meaning that nothing could be done about it (Ms B par. 334). Hence, also in this case, the management did not intervene to help solve the relations problems at the assembly line.

Ms D complains about how she received the communication that she had to change jobs: she feels she is considered as just being a number (par. 171-187). This feeling seems related to the fact that she has been sent to work in a department where she has to work all the working day standing by the assembly line and, moreover, she has not received enough training (see respectively sections 8.3.3 and 8.6.2). She also says that she was not expecting this type of change now that she is 54 years old. She says she is really angry because this change of work means that the company does not recognize her “professionalism, honesty, commitment, reliability” (Ms D, par. 161-171).

8.3.3 Physical problems in the repetitions of operations

It seems that there is a narrow consideration of the physical needs of the workers sometimes. This emerges from how some parts of the assembly lines have been designed and how the labour process has been planned, both aspects being factors of occupational diseases.

Ms C reports that at a certain point a new “transfer” – an assembly line on which the workers did not have enough room to turn to take the components - was installed (Ms C, par. 2390-2452). This creates problems for the workers’ shoulders, especially because they have to respect the rhythm of the line. Ms B – as trade union delegate – has complained to the Time and Motion department, pointing out the problem of having designed a transfer which makes working difficult. The transfer has not been modified, but more time was allowed for the operations.

Ms B mentions the issue of well-being and health on the assembly line, linking it to the monotony of the work as a drawback of their job to which she adds the problem of occupational diseases:

“here it is already a monotonous processing rather monotonous and repetitive so that a lot of occupational diseases have been found to have been caused by this, by the repeated movements.”

(Ms B, par. 467)

Ms D reports suffering from having to stand up for eight hours, using intensively her feet and arms (Ms D, par. 161-167). Later in the interview she indicates as causes of absenteeism in E1 the work shifts and the repetitive tasks, which wear out “the little hands, /the little shoulders/ (with irony) and all the rest //(laughing)” (Ms D, par. 689-693).

Because the research is on motives for learning, the aspect of posture and the well-being linked to this are relevant as conditions of work which can contribute to the worker’s feelings of being evaluated and recognized as important member of the work organization.

In the interview with Ms D, well-being is also associated with the quality of the relations with colleagues: she enjoys the company of her colleagues (Ms D, par. 131-139). The theme of the quality of relations as a relevant aspect of working practices will return in many of the following sections, confirming the sociality of the human activities, and at the same time, its high position in the hierarchy of motives of these older women workers.

8.3.4 The issue of working hours for women workers

The large predominance of women workers in E1 makes the issue of time and schedule crucial. As it appears from the following excerpts, this is not only due to the need for women to combine familial responsibilities with work more often than men workers, according to the traditional gender division of care tasks, heavier for Italian women than for those in the other western countries (Saraceno 2003; ISTAT 2008; Eurostat 2009). In the account of Ms C about an important controversy she had with the management about her weekly working hours, one can see the need for a life organized so that the paid work could fit with the rest of her life, made up of familial relations and personal needs. In what follows she is explaining the difference between forty and thirty-six hours as weekly working hours. Dr Q – the HR Director – had asked her to work thirty-six hours a week. This means working ten hours on Saturday and ten hours on Sunday, and on the other two days, working eight hours. Ms C is really unhappy about this, namely because she used to have standard working hours in the previous workplace. When she was hired at E1, Dr Q asked her to do these unbalanced working hours for a while, with the promise of passing her on to the standard ones soon. Yet when after sometime she asked Dr Q to change the working hours, she received a negative answer.

A few months later she got a serious health problem and now she is on sick leave. I only report the text in which she describes how the new working hours unsettled her life because when she has to work ten hours, that means being out for much longer than that, because she also counts the travelling time to go to work and then back home. She finds this schedule very demanding because she is not used to it. Moreover also her habit of having lunch at her sister place on Sunday has been destroyed:

"eating, going back- it is a- because I do not leave at six a.m., but at five-thirty, then, arriving at the company, because then I am one who does not like to arrive at two minutes to six, as I am, look, thus I mean that- then, you leave home at five-thirty, you arrive there, you work, eh, you come back home, you come to eat, eat, clean, because however, I mean, it is not that- also if my husband used to make me find everything ready also on Sunday, every Sunday I used to go for lunch at my sister's home, because I acknowledge that I was lucky, I used to have lunch at my sister place, and everything, I always used to- to ask whether I could leave at one o'clock or at on- or at twelve-thirty so that I could eat with my family because anyway it is a dista- for a person who after having made a certain life for thirty years, you have to change it radically, it is like this, it is that. Come back, work, leave at six-thirty, at six, at six and something, you practically there are twelve hour no longer, because- because two hours of break are fort-thirteen fourteen hours, they are two days per week. Then when you come back to do the Monday morning, when you did the first (shift), you practically have not had a pause, I image those you do the night (shift), it must be terrible, you- because you go in on Saturday evening, anyway the Saturday afternoon- everything without interruption, in fact I- to me it was a terrible blow"

(Ms C, par. 596)

Being asked to follow working hours which do not fit with one's own life is something that can happen in an organization. Yet also in other interviewees' accounts the rigidity of working time in E1 emerges.

Ms B, as trade union delegate, thinks that she has a general vision of this problem. She talks about women workers who have asked to change their working hours, the motives for their requests being familial problems, and who have received negative answers. She reports these cases during the interviews with her colleagues and none contradicted her accounts. She points out that it can happen that workers who have been well for long time and then have a problem. It hurts them when this is not taken into account by the management (Ms B in Ms D's interview, par. 705).

In her own interview she points out that the E1 workforce is made up of women and the management should know that women can have family responsibilities which need sympathy. She also mentions with vigour and in a polemic way that women have needs related to the specificity of their body and its cyclicity:

"Since here the population is typically high is typically feminine, no and here there is not so to speak a hum.... sympathy also toward the mammas no? Who perhaps have got problems at home, have got problems with children, eh..., on the contrary here if you ask for something they cause you problems, they cause you problems. It is true that they say "eh but we cannot shoulder the problems of the families"

it is true, is true, but then it is pointless to say also you mass media no? "let's help the family" /eh/(laughing)) and then, at the end you don't help me at all, right?

Me – Of course.

That then here it is a population typically feminine, hence it is obvious that there are mammas grand-mothers // (beating the table few times) anddd we are women.

Me – Of course

Then so to speak it has also happened to me with my boss, about a lady in fact I have said "director!"about a lady, who had asked for a day off because her period had started, she had stomachache no? and they did not give it to her. Then I have said "sorry, but if I have stomachache for I have my menstrual period" and really I have said it "should I go to say it to my boss? " "look I have my menstrual period give me a day off" but are we joking? He has to understand that anyway there is a population of women here ... with all the appendages // (beating the table few times), unfortunately it is like this. If nooo ehm /you hired only men who areee/ (laughing) who are even worse because anyway women work much more. Anyway this is an observation buttt is true and hence there is no sympathy, there is no sympathy, because we also have a lo- a lot of problems about some people about some women who however either they got the divorce or they have the children who feel ill in other words a lot of problems but here really very few receive help, but really ..."

(Ms B, par. 622-630)

In the last three sections the bodies of the workers have surfaced in three ways: as complementary tools at the assembly lines (for instance the fingers, the 'little hands'), as embedded tools among other tools of different material (for instance the shoulders in the transfer described by Ms B), how body's pains which are not related to the occupational diseases are not recognized. All these aspects of work represent a problem for the workers interviewed who have tried to find a solution with their superiors. Yet the management have not responded to their needs.

8.4 Older workers' subjectivity and inter-subjectivity

As discussed in Chapter Three, we can understand older workers' selves as the product of an ontogenetic cultural development which occurs through participating in different activities and social practices, building their hierarchy of motives and personal senses (the self) (see section 3.5). The dimension of past, together with the present, is relevant to analyze the workers' subjective aspect in the E1 activity. Hence the next sub-section on the subjective dimension starts with a presentation of data about the workers' past experiences, followed by another sub-section in which I pull out from the interview data issues about the workers' subjectivity, that is, what emerges as important for them now. This is a way to detect their personal hierarchy of motives. The last sub-section is about inter-subjective dimension and focuses on the relations with the superiors and colleagues, already emerged above.

8.4.1 The subjective dimension

8.4.1.1 The past experiences

Ms B says that she can appreciate the difference in term of learning culture between this enterprise and the one in which she used to work for ten years (Ms D interview, par. 375). She talks about that previous workplace in enthusiastic terms. She began working there when she was 26 years old after working ten years in a small enterprise that she characterizes as a craft enterprise, where she used to work very hard. So when she moved to this bigger enterprise as a worker, the management recognized in her a hard and clever worker and promoted her progressively so that after only three years she became a fifth-level employee in the quality department[78]. In this short career she has also been in charge of an assembly line of eight workers where she introduced job rotation without knowing – she says – that this was an emerging practice (it was in the second half of the 1980s). It was a wonderful time for her: she used to feel that she was being listened to and valued, and the climate in that enterprise was so good that she never took a day off for health problems (Ms B, par. 246).

This very good phase of the working life of Ms B was interrupted by a downturn in the business of that company. The enterprise activated the procedure of mobility ("mobilità"), which allows employers to reduce the workforce, and the employees and workers to receive their salaries for a few years, while they are put on special lists of unemployment. Ms B tells that she felt wounded and betrayed by the company. Other colleagues shared these feelings (Ms B, par. 254).

Even if she was not asked to leave the enterprise, she decided to go and realized the dream she had of setting up a shop[79]. When this happened Ms B was 37 years old. Unfortunately her business was unsuccessful and she had to carry on working as a worker in E1[80].

[78] Workers in the shop floor are usually appointed giving to them the three-level. The fifth-level is a position which approximates the one of an employee and implies some task of coordination and responsibility over a small group of colleagues.

[79] When enterprises are in crisis, this procedure can be seen as an opportunity to leave the enterprise because it also gives to workers and employees extra money. This money is often used to set up their own business.

[80] The circumstances recounted by Ms B are interesting to highlight what the engagement in the workplace can produce when a decision to reduce the workforce is made by the top management, the same top management which was thought as a good management, able to recognize the workers' contribution to the business. The decision to open the procedure of mobility broke something in the

Ms B's work experience in the previous enterprise has given her some insight into how work should be organized when electronic components have to be assembled and quality guaranteed. Ms B believes that she is now entitled to be critical with respect to issues of electronics and quality:

*"Exactly because arriving fr- from *** (name of the company) where I used to work on electronics and then on quality, I can give my judgment, I can express myself [...]"*

(Ms B, par. 504)

Hence in this case the past experiences give a term of comparison to judge the present situation, as well as a practical knowledge about certain types of production (in this case assembling electronic components). In the case of Ms B, past experiences – with their mixture of pain and happiness – seem to have empowered her in the current workplace, giving her a vision of how a workplace should be, in her opinion. I will argue later on that, in fact, this vision has shaped her personal relation with (or personal sense of) the object of activity in E1 and seems to be working as a motive which orients her union activity.

As already mentioned in section 8.3.1, Ms D has worked in the quality department for twenty years. That has been a very enjoyable period of her working life.

It is worth noting that Ms D's husband used to work at E1, but then he set up his own business (which had been his dream for long time) with his brother. This has developed as a family business for now Ms D's daughter works in it as well as Ms D's sister in law. This business has given her family a satisfactory economical situation. She has not

---

relation between Ms B and her employer, as if she felt as heart-broken in a loving relation. I interpret this as the result of the contradiction in the relation between workers and employers in the post-fordist economy: the emphasis on quality, enhancement and continuous innovation requires – as discussed in Chapter Five – the engagement of workers and employees and a reduced separation between cognition/conception and execution. Workers who accept to engage in working practices develop attachment to their enterprise. In CHAT this is interpreted as occurring because actions are related to the motive of the activity: when people are engaged in an activity, their actions are aroused by the motive of that activity. At the same time, people who participate in the activity, develop expectations of sharing the benefit of their engagement. Salary can be seen as socially and culturally accepted as the fair share of the outcome of the activity. Yet salary is an historical device developed when mass production was introduced. As I mention in Chapter Five, in different countries the conflict between capital and labour has given rise to specific features of industrial relations. However, everywhere agreements were found in regulations that defined tasks, job classification, seniority, working hours, structure of the salary. These agreements have developed with reference to a specific model of production, that is, mass production in which the autonomy of workers is reduced to the minimum and engagement is not required, but only following instructions. In the post-fordist economy the participation in working practices is characterized by the type of engagement Ms B has experienced in her previous workplace. Ms B seems now more disenchanted with work organizations, but also deeply frustrated, because she knows how workplaces can be pleasant as working environment. She is now fighting to improve her current workplace, but finds it difficult to obtain changes.

joined it through her own choice, but also as a result of a shared decision with her husband to have a more secure familiar economic situation (Ms D, par. 131).

I have already referred to the past experiences of Ms C's work in section 8.3 and her comparison between working at the desk and working at an assembly line. She had started working when she was 16 years old and was employed for 25 years in a small firm where she was welding condensers. This task needs the skill of being quick and to be able to concentrate "to not take away the tinplate" (Ms C, par. 102-134). So she learned to be very quick, a quality of her work which was acknowledge when she was hired in E1. Yet that job of welding used to be carried out in noxious conditions and without rotation. So she was surprised when she learned that in E1 workers were asked to change task every two hours. After this period of welding condensers, she received an offer from one of her acquaintances who is an entrepreneur. At that time, he was looking for a person who could be a sort of factotum for his small business. She decided to go to work with him and in this place she gained experience of overseeing the whole process of assembling: from learning how to assembly a certain part and passing the information to the other few workers, to receiving the components to be assembled, to dealing with quality issues, to assembling, to delivering the parts assembled, and to mediating between the employer and the workers when there was not liquid assets to pay the salaries (Ms C, par. 164-244). At a certain point in 2001 that firm also installed an assembly line but still with the old welding machinery (as opposed to those that are computer numerically controlled). Then the business went bankrupt and she was hired by E1 because that small business was a supplier to E1. In E1 Ms C has gone back to carrying out only assembling tasks.

8.4.1.2 The self

Ms B describes her character when she offers her interpretation of why she received many votes from her colleagues in the delegates' election. She thinks that her success was due to the fact that she is serious, honest, and sympathetic in dealing with colleagues' problems. She says she does what she would like others to do to her, even if – she regrets – this does not happen. Her way of underlying her own description with guttural sounds and little strokes on the table suggests to me the idea of a woman who has become assertive to fight for what she considers important, but she needs some approval from the interlocutor:

"Why this is something? because anyway, well, I have my personal character, but I think I am a serious person // (cluck), very altruistic // (cluck), anddd howeverrr I have found a lot of difficulties, a lot of difficulties and I am still finding these these now, really because thisss side of my character, of being too much honest. Because to me that is whennn // (cluck) mmm I defend a worker anddd identify myself and iden- and and being and identifying myself / obviously /eh,eh/ (laughing) I really go straight, in the sense thattt // (she hits with little strokes the surface of the table) I believe that that person has to be helped, as I would like that the others did to me even if then in fact it is not like this."

(Ms B, par. 415)

Ms B seems to be a person moved by the desire to improve the conditions of work in E1 for herself and her colleagues. This seems related to her previous experience of work and the comparison between that experience and the current one in E1. In the following excerpt she refers to her first year of work in E1 and her choice to fight instead of "burying her head in the sand":

"Then ehm hence I have passed one year really very bad because I repeat // (laughing nervously): the environment was bad, work wasn't satisfactory thereforeee you will understand how I have found myself, no? Thank goodness that however I have a strong character // (sound of chuck), I have succeededdd to emerge in the sense to make someone to note me that however I was not, not one whom you can buryyy / the head in the sand/ (smiling). And the boss have understood this, so that I used to always have debates with him

Me – manufacturing department boss?

Yes, yes, yes, yes but very heated."

(Ms B par. 342-346)

Ms D constitutes an interesting case showing the intertwined relations between the subjectivity and the objectivity of an activity as well as the influence of what she had developed in the past on the current time. As presented in section 8.3.1 and mentioned above in this section, she had worked for many years in the quality department before going back working on the assembly line. She says that she cannot just care about quantity; it is now part of herself, paying attention to produce parts without fault. In this excerpt Ms B is intervening and giving interpretation on how both the self and the training are important in the fact that Ms D is so attentive to quality aspects of her production:

"Ms B – Because it is true that when she (Ms D) has entered in in the department of quality there was more training

Ms D – Yesss I [have attended so many courses!]

MS B – [Indeed one can see] can see from the person who has anyway acquired many

Ms D – Yes those notions stay with you [then]

Ms B – [Exactly]

Ms D – and also affects in your way [of working]

Ms B – [Yes indeed], it really stays [in yourself]

Ms D – [which is something] that you have inside, however I have always [had I]

Ms B – [Yes, but really] into your self

Ms D – a thing which you have yes in yourself and [then]

Me - [What] have you had in yourself?

Ms D – For examples certain things at the level offf, well, if I have to assembly a product mhh for me it is not only important to place the little pieces [the components], [I-]

Ms B – [it is understanding]

Ms D – understanding and also looking at that which which I place that beee- that the pieces be good, for example, that the components be good and thattt that that I do I do it well, it is not important to do them maybe twenty and three are not good, maybe I always make twenty of them or I can make eighteen, but eighteen good, that is I mean this, to do them well. And controlling what I am also doing, it is not only for the taste offf

Ms B – [Then]

Ms D – [then] assembling and sending them ahead, it is this that I mean one- that that one has inside, not [we all]

Ms B – [then]

Ms D – we are similar

Ms B – no, well, but one should say that however she (Ms D) as a person is also quite painstaking, no? I think that however she is very cautious in her job, that on- that that she does, she is attentive, and hence all these things here make sure that she has acquired the preparation, the training, that is why she says: "I have got it in- also in myself"[it is really because a person]

Ms D – [Yes because it is a thing that] I have [acquired]

Ms B – [because she is observant] in her things, fair, and so on, and moreover she has exactly this characteristic of having acquired well

Ms D – Of course

Ms B – the training, that nowadays is not there, that nowadays is not there."

(Ms D, par. 431-475)

Ms D and Ms B try to explain why Ms B is so good in her job, in following the rules to achieve a high standard of quality in her production. They agree that when one works in that way it is because she/he has "something inside". But this poses a problem for them: does this "something inside" come from inside or is something that has been acquired from outside? Their reasoning seems to attribute the attention of Ms B to quality procedures both to a personal attitude (Ms D says "which is something that you have inside, however I have always had I") and to something acquired ("Yes because it is a thing that I have acquired"). In this excerpt they agree that vocational training has played an important role in shaping Ms D's way of working ("I have attended so many courses! … those notions stay with you then"). At the beginning of her interview Ms D remembers how much she liked the period (lasting twenty years) in which she was working in the quality department: she used to feel passionate about her work. That was also because she could have some autonomy in carrying it out and she had good relations with her colleagues (Ms D, par. 147-151). Ms D and Ms B do not mention the

relevance of having worked in that department - for such a long time and being so satisfied of this - in Ms D's development of sensibility towards working practices with quality. Neither did they mention the fact that Ms D's family is running a small company (section 8.3) and there is the possibility that Ms D mediates her relation with the object of activity with the entrepreneurial culture of her family.

Ms A does not talk much about her past in the interview. So in this section I am not able to connect what emerges about herself to her past. I can only notice that differently from the other workers interviewed, she attained the level of upper secondary school and she covers the role of operator in her assembly line. That is, she operates the machinery and organizes the work of a group of six to seven workers (all women).

Ms A thinks of herself as a person inclined to cover roles of responsibility (Ms A, par. 150). In fact, she acts as a potential entrepreneurial person or a manager. This emerges in a quotation where she tells me why she did not accept a position of responsibility in a small enterprise. In her reasoning surfaces a number of evaluations typical of a person for whom a good management is important. She refused that offer because the owner of the enterprise was not showing enough ability to run the business. Ms A thinks that it is not easy to run a business. She lists a number of issues which one has to consider when running a company (Ms A, par. 536-568).

This entrepreneurial motive in the personality of Ms A might orient her to invest in learning which I discuss later in section 8.6.2. Behind this investment in learning there was also a feeling of being excluded because other colleagues knew how to do the job, while she did not (Ms A, par. 186). Yet this feeling seems linked to the desire of feeling able to do things without having always to ask the intervention of another more experienced colleague. It seems that the search for autonomy is linked to the desire to feel equal to the others and then included (Ms A, par. 190). It is interesting to note that Ms A has chosen the operators as a reference point to evaluate her position in the shop-floor rather than the workers who do not use the PC. Moreover she describes herself as a person who does not like to do just her eight hours of work and then "stop". She is moved by her curiosity and passion for knowing (Ms A, par. 360-364), but these could be connected to her desire for managerial responsibilities too.

Ms C seems to be moved to work by motives that are not strictly related to the object of the activity in E1. She says that work is most important to her for a number of reasons:

she feels young and she wants to travel and buy the flat in which she lives with her husband (Ms C, par. 2056-2072). Her husband is about to retire and she says that his pension will decrease their whole earnings. So she repeats more than once "I must work" [81]. She just would like to have a workplace where she could work with satisfaction (Ms C, par. 2076).

8.4.2 The inter-subjectivity

Ms A seems to regret when she has to report and refer to her foreman. He is very formal, he does not make jokes, and he wants his order to be executed precisely. She says that she had more humane foremen in the past and this one is oppressive, and this makes the workplace climate heavy. The workers have to pay close attention to what they say to him (Ms A, par. 814-846). She thinks that the E1 management appreciate his way of ruling the shop-floor, because, within a few years, the number of workers under his control has increased (Ms A, par. 846-870).

At the same time, according to Ms A, the company is aware of the difficulties of relations with the foremen and so the top management has decided to insert the figure of an engineer to support the foreman in charge of the area in which Ms A works (par. 1.086-1.090). She says that this foreman has three hundred workers to manage and according to her he has a lot of work. So she thinks that it was a good idea to hire an engineer to help him. Now, when she has a problem, she can also refer to this engineer. She gives me an example of what she recently asked him:

"if I have a problem I refer more to him than to the boss in itself. ... For example the other day I have said to him that I have, have in a line a problem which we don't succeed to solve, it is three months now and they are keeping saying to me the mechanics whom they have, that they don't have the spare parts. Now yesterday I have written to him and now let's see how it will end // (smiling)

Me – This is curious.

Eh, eh, because he says that they don't have enough mechanics, before they used to have too many of them now they have too few of them and therefore one looks for … that is, it is not that one wants to give all the problems to him, however one tries to "look I have this problem I don't succeed in solving it despite I have asked twenty times, however we have said to these persons to to solve the problem, I have not succeeded". Either it is me that I would not have the ehm the strength to make myself respected, I don't know // (smiling), perhaps it is my fault // (smiling)."

(Ms A, par. 1098-1102)

She talks about a mechanical problem. Yet it is possible to notice that there are other issues attached to this mechanical problem: organizational as well as personal ones. Let

[81] "Io devo lavorare". I translate this with "must" instead of "have to" because the emphasis she adds to the tone of her voice to stress that she really needs to work, it is something she cannot avoid doing.

us consider these types of issues in turn. Starting with the personal ones, Ms A seems to worry about whether she should go to the engineer or not in case she should be bothering him. She takes care to turn to him only when necessary. She relates the necessity to ask the engineer's support to her failure in getting the mechanic to her assembly line and she wonders whether this failure is due to her lack of being tough when she asks for something. She mentions that she used to be a shy person. She has changed a lot, but still find it difficult to be categorical in her requests and she mentions this as her fault. At the same time she also related being shy to her low level of self-esteem. However she adds that she has made a big effort to overcome what she interprets as an aspect of her personality:

"I have already changed because I was very shy, therefore … therefore I have already done a lot of forcing on my personality // (smiling), … that some time ago I used to be always very hesitant that I used to not know nothing"

(Ms A, par. 1118)

In sum, it is difficult to say whether her hesitation in turning to the engineer originates in an awareness of the complexity of the situation, so that she has to be patient and wait for the intervention of the mechanics, or in her feeling of guilt because she is not able to be tough when she asks for the mechanic's intervention.

Indeed, there is also organization aspects in the situation in which Ms A finds herself. She mentions that it is not clear whether there are enough mechanics or whether the problem to intervene to solve the mechanical problem in her assembly line is due to a lack of spare parts. This mechanical problem seems to be the origin of the high percentage of faulty parts produced on the assembly line under her control[82]. In other sections of her interview she talks about problems with the quality department and the lack of collaboration with some colleague there (see 8.5). Hence, it appears that she finds it difficult to understand what to do because the organization of the enterprise suffers from some contradictions. First of all, the declared aim is achieving quality, but then not enough resources are invested to support this purpose. Secondly, this purpose would need collaboration among different departments and a flatter hierarchy for the circulation of information and communication, as discussed in section 5.4.2.2 in the case of the lean production and Toyotism models. Yet, the top management had decided

[82] This is a deduction from her mentioning that she has been having that problem for three months. The interview took place in April. So the problem started in January, the same month in which a relevant increase in faulty parts was observed (see 8.5).

to give responsibility for a large part of its workforce to a foreman who appears to be rigid and not keen on communication. The company has tried to counterbalance this with the figure of an engineer.

However it is possible that the E1 management has chosen the strategy of production of pursuing a general low rate of faulty parts, and at the same time of tolerating a lower rate of fault in the production of certain components. If this is the case, the management has not created the conditions that allow Ms A be aware of this. In other words, Ms A has not come to know what the object/motive around which the production is being organized is.

This detailed analysis shows how complex communication with superiors can be. In this account of Ms A of a communication to the engineer, the starting point is a practical issue (the need for a mechanic's intervention), but then the communication is mediated not only by artefacts strictly related to the latter (for instance the availability of spare parts), but also organizational and personal issues are involved. From the point of view of engagement in the working activity, it appears that this complexity can prompt different personal reactions in workers. Ms A looks to be able to cope with it: her motives for doing a good job and for learning what is necessary to do seem not to be challenged by these difficulties. It is possible that her way of relating to her line managers is aroused by her entrepreneurial and managerial motive. Yet there are workers who are far less willing to tolerate the enterprise contradictions that emerge in the communications with superiors (Ms B) and feel depressed after being faced with the rigidity of the answers (Ms B's account about her colleagues).

Ms B, the trade union delegate, says that work is monotonous and moreover the management responds with rigidity, and also confusion, to the workers' requests. This brings about discomfort in many workers (Ms B, par. 850).

Ms B explains that the unclear division of responsibility in the management creates confusion and tensions among workers and between workers and management, because the rules are not clear.

A few days before the interview, Ms D was moved to another manufacturing department. She was really upset about it and even cried during the interview (Ms D, par. 161-167). She felt bad because of the way she had received the communication of

the change and the type of department that she was sent to work in. In this department workers work while they stand in front of the assembly line all the working time and make tiring movements with the arms. She did not expect such treatment now that she is 54 years old. On the contrary, she would have expected some recognition for the commitment shown to the enterprise since she was hired in the '60s. In this case Ms D's relation with her superiors appears to be mediated by her belief of being a good worker worthy of receiving recognition for it. We have already met her in the previous section as a worker who has interiorized the quality production culture. She feels as part of herself the fact of being careful in assembling components as she learned when she was in charge of controlling quality process. A few months after the interview, E1 was offered the possibility to retire which was given to all the workers close to retirement, and Ms D accepted it.

8.5 Engagement with the object of activity

In Chapter Five I argue that from a theoretical point of view the degree of engagement with the object of the activity is related with the organizational principle of separation between conception and execution and the personal sense of doing a certain job (section 5.5). That organizational principle positions the personnel differently with respect to doing and thinking, and 'feeling' the motive of the activity.

We have seen so far that in company E1 workers have little discretion in the way they carry out their tasks and little and unsatisfactory communication with superiors. On the base of the theoretical framework, I would expect a low level of engagement with the object of the activity. Yet from the previous sections, it emerges that these older workers appear to be engaged in what they do. In this section I turn the analysis to other evidence of engagement.

I start with the case of Ms A, illustrating her job at the assembly line where she also covers the role of operator, as said above. She organizes the work so that every day the production is adapted to the orders of the day. This implies that she makes sure that there are enough parts to assembly the scheduled parts. The product assembled on this line is always the same: only the stamp to put on it or the setting varies. So there are around five to six variations. Each part is made up of four or five components.

She is not happy about the recognition is getting from the management: she would like someone to acknowledge her commitment. She talks as the management would like a total commitment from her, up to the point where she would lose control of her own life (Ms A, par. 21-41). She is at the same level as some of her colleagues whom she coordinates (level four) and she says she earns the same salary (Ms A, par. 132-150). When she asks her foreman about upgrading, arguing that she does the job as one who has level five, she says she gets the answer: "you can refuse to do the job (as operator)" (Ms A, par. 150).

Ms A reports other experiences of lack of recognition, this time, in the case of her husband. She mentions the fact that her husband is also not receiving what they – she and her husband – would consider adequate for his contribution in his workplace, and her voice seemed to reveal some degree of resignation. She also compares her situation in E1 and what she was able to see in another enterprise which used to supply E1. In that small enterprise sometimes workers used to have difficulties in being paid[83]. On the one hand, Ms A complains about her workplace, on the other she thinks that it would be difficult to find a better situation. It seems that the level of acceptance of lack of recognition can be related to what she perceives as a situation occurring frequently in workplaces.

However, Ms A engages a great deal with her job, tries hard to solve the mechanical problems on the assembly line as discussed in the previous section, and the lack of cooperation bothers her.

Ms A would like more cooperation among workers of different departments. Instead of finding cooperation, she feels that some colleagues focus on trying to catch her mistakes:

"Because one assures the customer that one-w-works in a certain way and hence one works in that way

Me - hum. Therefore

doing the checks on the product, questioning if a product arrives and it isn't good, … and they want that you always communicate here when there is something which is not gooddd, hence you have to collaborate with the quality [department] and ... but here there isn't a lot of collab- there isn't much style of … team life … I don't know it would be necessaryyy, however everybody has her/his own garden, she/he cultivates it, we are a bit enemies instead of being … I don't know, we don't make group a lot [we don't team up], " ah I am in this place, I am" … you are at the quality (department) you are not … an executive, you are a worker, as me, hence you do another job but anyway we should collaborate not to come to criminalize who works at the lines. And yet there isn't this spirit here, sometimes you go to work really with ... always that they sta-stay there paying attention to what can happen to you today so that

[83] It is the same enterprise that Ms C is talking about in her interview.

someone can attack. It is nasty to work like this eh"

(Ms A, par. 944-948)

It seems that some of the workers of the quality department carry out their tasks of controlling the production on the assembly lines with the personal goal of attacking the colleagues. It is possible that these conflictual relations pursued by the quality workers could be a way of signalling their emancipation from the work on the assembly lines, on which they used to work once.

Ms A's excerpt quoted above came after she talked about decentralization of the production in other countries: she thinks that the owners have not moved all the production where the labour costs are low because they consider the Italian plant as a sort of window for the customers who can come, visit the plant and verify that the procedures are respected in order to achieve the agreed level of quality. So she thinks that it is a pity that some colleagues in the quality department look at her as someone to attack instead of a colleague with whom to collaborate. It seems that it is implicit that better collaboration would help enhance the quality of the production. According to Ms A this tension also occurs because there is no procedure to track the internal production. So when she receives faulty components on her assembly line, it is difficult to put it down to a particular person. Apparently, this offers the opportunity to some workers in the quality department to use this uncertainty.

The theme of the desired collaboration also emerges in relation to quality problems on her assembly line. Recently, it had happened that the percentage of faulty parts soared to a two-digit number. It happened a few months before the interview: they had a meeting to discuss and try to understand the reasons for this. Some enhancements to be introduced on the line were identified. One was suggested by Ms A too who proposed to put some pliers to block something[84] (Ms A, par. 1014). Yet nothing has been done for budget reasons. Ms A says that often it happens that things are said but then not done (Ms A, par. 1006-1010). Then the problem disappeared and so it was forgotten. Now it is back with the percentage of faulty parts reaching a two-digit number again. She feels frustrated because the quality department does not deal with this problem as she would like (Ms A, par. 1.001-1.030).

[84] She does not explain what the pliers should have blocked.

The analysis of Ms B's excerpts, when she talks of her commitment to enhancing the quality of the production of parts based on electronic components, fits this section too (see section 8.3.1). Here I want to note that Ms B's account can be interpreted as an indication of the engagement of Ms B in her work at E1. Yet, also in her case, it seems an engagement which generates frustration for she finds it difficult to improve E1's working practices. The fact that these workers are engaged in their jobs, but with frustration, raises the question of why they still work in E1.

I had the opportunity to ask Ms B and Ms C why they keep on working at E1, considering their unsatisfactory experience there. Their answer is that it is difficult to find another job for them, with their age[85], in a big company as E1 is (Ms C, par. 1942-2052). However, they say that there are not so many big companies around in the area. Working in a big company means having a more stable job and more rights, while in small firms, work is always precarious. Ms B has recently received an offer, but she said that first she asked how many employees that firm had. Unfortunately it employs only ten people, which means – using their way of putting the issue - "under the legal number". With this expression they refer to the Italian Labour Act (Statuto dei Lavoratori) which differentiates the workers' rights according to the dimension of the business. The threshold is sixteen people, below which employers can fire easier. Hence it is much better – they say –to work in a big company. Indeed, Ms C had been working in small businesses for twenty-five years and it was her choice to move to a bigger enterprise. She was happy working in those small firms, despite the noxiousness and the discontinuity of the salary. But when she was forty years old, she decided that it was time to try to get a more regular job and salary. In the end she was hired by E1. Ms C says that work is most important for her; she would just like to work "well" (Ms C, par. 2076), which seems– taking into account the whole content of the interview - to refer to a workplace better organized and with good relations with colleagues and superiors.

Ms D has a different relation with E1, made of good memories and feelings, but also of bitterness. As I reported in the previous sections, she had dealt with quality control for twenty years, and she found it very interesting. I discuss in section 8.4.1.2 how she

[85] Here the issue of age and being an older worker seems to emerge. Yet, as argued by Iacci, P., G. Rebora, et al. (2005). Troppo vecchi a quarant'anni? Milano, Il Sole 24 ORE. the problem is not the age per se, but the position and salary they have reached after many years of work, which make them less competitive in the labour market. However other interpretations could also be elaborated such as the one that the labour market for these workers does not recognize their professional experience.

developed an evident motive for quality through the engagement in this task, so that she also cares a lot about the quality of the assembling now that she is working on the assembly line. She also talks about her first years of employment, when she could have attended school instead of working. She used to feel so involved at work and was enjoying all the continuous changes of products that she did not invest in education, a choice that she regrets a bit now, for she could have had a more satisfying and interesting job. Products were always changing because E1 was experimenting with innovation. When the labour process of the product had been sufficiently tested, E1 used to move it to another plant. So work used to be innovative, quite demanding, giving her the feeling of being in the forefront, and so she used to feel passionate about these changes. Moreover colleagues were pleasant people and she is still in contact with them, even if they are retired now (Ms D, par. 139-151). Despite this positive long experience of work at E1, recently, she has become less content with her job, as I reported in the previous sections (8.3.2, 8.3.3 and 8.4.2). However she is still engaged in her job, as demonstrated by her involvement in guaranteeing high quality in her current assembling work (8.3.1 and 8.4.1.2).

8.6 Learning: a multiplicity of strategies

Having depicted so far the type of work the older workers interviewed carry out in E1, what, according to their accounts, are the conditions of work, and their engagement as related to both the motive/object of the activity and their subjectivity, I can now move to the learning issue and see how these older workers engage with learning, with specific attention to the motives for learning as related to the learning needs surfacing in the activity in which they are involved.

The first part of the session is devoted to discussing the experience of the vocational course mentioned in section 8.2 organized by E1 shortly before the interviews. This discussion, compared to what is analyzed in the second part of the session, represents an activity specifically organized by the enterprise to prompt vocational learning and implemented in a classroom. In the second part of the session I will refer to workers' personal learning strategies to respond to learning needs related to the assembly line job.

8.6.1 Learning organized by the enterprise

As reported in section 8.2, the vocational course has had the aims of assuring the safety conditions, implementing quality procedures and improving communication by transmitting to the workers appropriate information and knowledge. I have also stated that the sessions of the course were characterized by unexpected dynamics, interpreted in different ways by the HR director, workers and trainer. I report these three voices to show how their interpretations seem to be associated to different objects.

Adopting the Leontievian perspective to analyse activities (see Chapter Three), the vocational course can be seen as the space of the activity whose declared object was the one of transmitting new and more adapted cultural tools to mediate the working practices in the shop floor. In this activity different people have carried out different actions with different goals: the actions of organizing (HR director), running/delivering (trainer) and attending the course (workers). However, as it emerges from the interviews, the vocational course seems to have being oriented by different objects. It looks as the actions became three different objects of the activity, that is, organizing, running/delivering and attending. It is also possible that the declared object has been imaged differently by the main actors – HR director, trainer and workers[86]. As I discuss in the concluding remarks (section 8.7), what is relevant here is to see the consequences of intending the object of the vocational course as a process of transmission/acquisition of information and knowledge: the wholeness of the single development of people and activity is lost (section 3.3.2), because the initial declared object cannot take into account neither the sense making of the workers nor the production strategy of E1 and the intrinsic contradictions between doing quantity and quality at the same time which we have seen in the shop floor through the analysis of the older workers' interviews (section 8.3.1). But let turn to the voices of the main actors involved in the vocational course.

Dr Q, director of human resources, explains how the teaching method and course content were innovative and the investment very important and maybe unique in the industrial panorama. However, despite the efforts to organize an interesting course, the

[86] The issue of the object as an imaged one will return in the concluding remarks of this chapter and be discussed further in the final chapter. Here we recall as Leontiev points out that every object appears in two forms, one independent from the subject and then as an image of the object, as a product of the psychic reflection (more in section 3.4.2 and 3.5).

workers were not happy about it because they compared what had been said in the course with the actual processes in the shop floor. They did not understand – Dr Q says – that what has been presented in the course has to be interpreted as the objective to which one tends. He seems thinking the workers' "desire for learning" is unstable and frail when they are faced with the difficulties of learning. He refers to an English language course (for employees) in which everybody enrolled, but nobody reached the end of the course. Talking about another course on communication, he says that workers had complained that the content was too abstract. He concludes that it is difficult to adjust courses to suit everybody (Dr Q, par. 29-41).

Dr L, the trainer, confirms and explains in more details the discrepancy between the course and the shop floor, mentioning that in the latter the aim of producing quantity was constraining the attention to safety conditions at work. She refers to the thoughts she imagines the workers could have had when they were asked to attend the course on safety: they may have interpreted this massive investment in training as the signal that something was about to change on the shop floor in terms of safety issues. In particular, workers were expecting – according to Dr L – that the foremen would have changed attitudes with respect to use of a safety tool called "little key". I have learned from other interviews that this device has to be used to work in safety. Yet sometimes workers avoid using it to speed up their job. So at the time of this course, workers were expecting a higher control of the use of the "little key". But as the sessions of the course were going on, nothing was changing in the shop floor:

*"Yes, in the sense that this problem has b- had emerg- has emerged during the whole course of vocational education anddd the first the very first training groups, hence the firsttt two months the first month the motivation was very high, becauseee eventually they have been called in the classroom and therefore however there was an active involvement, ehm, after an initial distrustfulness in whichhh they were worrying to be analyzed 'scannered' because they thought I was a psychologist, no? and therefore they were worrying to compromise themselves and so to have then a reprisals from the company, passed the initial bugbear in which they were thinking that I wanted to psychoanalyse them // (laughing) ehm at the beginning there were good teams work, in the sense that people have let them be involved in these activities. Always with the reserve of saying: "Well, will the company do something then?" question mark. […] however a minimum of span in the majority of- at least the expectation to say: "Well, if the company call me in the classroom, no? and it finds fault with me about the use of the little keys (safety device), hence it does aaa a heavy training on safety ehm there will be then as a consequence a behaviourrr from the foremen which is in line with what we are listening to in the classroom". The problem has been this, that the cour- the courses have gone on over the months, but the foremen were carrying on closing one eye in the manufacturing departments over the safety systems which wereee not respected not respected. In other words, I was saying in the classroom: "The the behaviour has to be this, the rules have to be these ones, one must not do this, one must not do that /because/ (with emphasis), everything motivated, explained, the reason one does not do like this, ehm the consequences of what would happen, but then in the reality of facts in the production were persisting the "*fuma i toc*" [in dialect, let's do the pieces] that is let's go on with a high number of pieces, the quality, the workers were saying this to me eh? I ehm that*

is, the workers do not have the perception that actually something changed, therefore there has been a way down of motivation with respect to the course […]"

(Dr L, par. 19)

Dr L seems expecting, as Dr Q too, that workers came to terms with that discrepancy between what taught in the course about the ways of working safely and the actual ways of working on the shop floor. She complains that the workers did not appreciate the small changes occurring on the shop floor towards creating safer work conditions. Yet the workers' perceptions that the changes on the shop floor were not enough gave floor to those workers who were very discontent about the working situation (Dr L, par. 19).

Ms B, the older worker and trade union delegate, confirms that workers took the occasion of the course to express their desire for change and their frustration because their expectations were not met:

"But it (the company) has been let go, that is, they have not not been able to involve the personnel, then last year, or better still one year and an half ago they made us to attend some courses no? where practically a doctor has come, I don't want to call psy- psychologist, however one who does who deals with these training courses for the personnel but about behaviour, about behaviour and they have done this course about the safety, over the 626 (famous Italian law about safety) // (guttural sound as in search of confirmation), where people have had obviously a large vent, anddd of discontent inside the company because in fact they were feeling bad, that is, you were living really badly, anddd brought about byyy how how we have been managed by the bosses by the directors, and so on. And therefore people have burst out, they have burst out and have let loose, about the bosses about the operators in short, look, if you were there, I am not going to say to you what has happened."

(Ms B, par. 582)

Ms B says that workers were complaining about how they are managed by the bosses and the top management. She does not specify in this turn of the interview what makes workers unhappy. Yet I have already mentioned in the previous sections the content of these complaints: these are about difficult communications with the superiors, little support in producing according to the standard of quality, lack of consideration of the workers' personal needs.

Dr Q points out that vocational education is provided to operators and foremen too, meaning that the aim is to make a cultural change which involves everybody in any position. Yet all the investment in education seems not to give the expected returns. I will come back to this point in the concluding remarks.

8.6.2 Personal responses to workplace learning needs

Opportunities for learning are not restricted to the courses provided by the company. In this section I report on learning needs of the older workers interviewed, how they have dealt with these and what support they have received from the company.

Ms A has organized her own skill development. Six years before the interview – when she was 38 years old and the previous operator resigned (see 8.5) - she found herself in the position of having to cover the role of operator. She did not know how to use the PC which was the key tool used in that position (Ms A, par. 280-298; par. 312). The employer did not provide a training course neither was her learning at work supported by other more experienced workers (Ms A, par. 338-360). She then asked a young woman (whom she calls "young girl") of her acquaintance to come to her home and teach her how to use the PC. She learned a bit of Excel and Word. So today she is able to use the PC at work and surf the intranet looking for the information necessary to carry out her job, as well as doing things such as printing labels (Ms A, par. 158-208). It is interesting to note that Ms A's need was to know how to surf the intranet and find the information necessary to perform her work as operator. She says that she was not able even to switch on a PC. It seems that she chose to carry out two different learning activities: she tried to familiarise herself with the simplest operations on a PC by asking that young woman to help her, and at the same time she tried to capture other information - what is the intranet, where is the information she needs and how to use the PC – for example to print labels - from her colleagues. The other point to notice is that Ms A tends to justify her employer's reason for not having supported her learning (Ms A, par. 338-360). She says that he might have acted on the basis of the sort of judgments that everybody uses to find out who is sufficiently smart to learn by herself/himself and who is not, implicitly saying that if one is sufficiently smart one can organize oneself and learn what it is needed to carry out the job. So she did and acted as a sort of "free-lance worker". She interprets her entrepreneurship as a personal characteristic (see 8.4).

Ms B has also faced a lack of training. This occurred when she was hired and started working as a worker on an assembly line. Her colleagues showed her two-three times how to weld some wires over some pins, but without explain to her what product they were welding. She would have liked to have a smattering of knowledge about what she was doing (Ms B par. 290).

But E1 did not provide the learning which Ms B would have liked to have. Differently from the case of Ms A, Ms B complains about it explicitly. However, it is possible that the management of E1 did not organize training for Ms B because it could be seen from her curriculum vitae that she was able to do that work. Yet the need for learning more than is strictly necessary to do the job (in the case of Ms B: welding some wires) is interesting, for it highlights that there is an issue of learning needs at work which emerge and which the enterprise judges as not relevant for its purpose. This is clear through the words of the foreman, according to the account of Ms B:

*"And then I had complained of the fact that exactly they have not not explained to me nothing, they have not explained to me what you use this *** (name of the part) for, what was that *** (name of the component). Because I I had complained to my boss no? And he said to me: " ah, of course that if we should do as you are saying" no? "nowww we will not be doing all the pieces we are doing" no? As to say*

Me – this the manufacturing department foreman?

Yes, the manufacturing department foreman, as to say "of course that if we follow yourrr ehm ... ehm remarks, your claims" ehm

Me - "We would not be efficient"

"We would not be efficient" and so what I have learned it has been really becauseee I wanted to learn, but always askinggg. Therefore there has not been training, there, there has not been training. And it is going on like this, ... it is going on like this."

(Ms B par. 334-342)

Ms B was used to the working environment in the previous workplace (see 8.4.1) where she could mediate her working practices with her remarkable capacities for innovation and enhancement. In E1 she has founded a completely different environment where the target of achieving the daily production is fixed at a tight level, eroding the space for other collateral activities such as learning what are the parts assembled, for what they are used and what their functions are. Ms B says that sessions in which workers are told about the purpose of the products and the technical names of the parts are necessary, so that communication with the controllers of quality is facilitated (in Ms C's interview par. 297-475; in Ms D's interview, par. 299). It is interesting to notice how strong Ms B's personal sense of motive for learning is: however this motive for learning is seen by the middle management in terms of its economic value. According to the manufacturing department foreman, vocational learning about what you use the parts for and what they are made up of is not relevant to the production.

In the above excerpt we can also see how the resources for sharing practical knowledge and learning are shaped by the relations of power. In this case, the relations of power are

those with the peer colleagues: Ms B was in the position of being a novice (Lave and Wenger 1991). Yet her colleagues – all women – and expert in the welding job did not like her from the beginning and Ms B did not like them either. According to Ms A's account, there are no management's interventions to help solve problems of relations among workers (see 8.3.2).

Ms D also complains that she was not trained enough to do the new job she started a few days before the interview (Ms D, par. 263-291). She has changed position on the assembly line and she is not receiving enough information to assemble components which look similar. She is supposed to ask for help in case of need, but she prefers to take a part already assembled, to study how it has been done, to use all the memories she has of when she was shown how to do it, and to reproduce it. But she does not feel happy about having been left on her own and not receiving enough training. Earlier in the interview Ms D points out that sometime these components can be slightly different and it is important to pay attention to those differences in order to assembly correctly the components (Ms D, par. 161-167). As already discussed in section 8.4.1.2, Ms D is very keen on the quality issue in her production.

Ms D would attend vocational education or other form of schools, but she thinks that it is not only an individual issue: nowadays she perceives that professionalism is not valued and employers just look for short term contracts (Ms D, par. 961-965). However she tries to imagine some vocational education that could be of interest for a worker and for the enterprise too, for example, learning some basics in electricity and mechanics in order to be autonomous in managing the tool machine (Ms D, par. 965-969). According to Ms D, "a push and a return" is necessary to make someone committing to a vocational education course, that is, recognition of the development achieved with vocational learning (Ms D, par. 1319-1323).

Ms B suggests that some older workers – very few – do vocational education such as computing, but they do not tell their colleagues for fear that people would talk about that (Ms B, par. 1107-1109).

Ms C would like to know more about the quality process. She learned about quality from a colleague who was sent by the E1 to the supplier firm where Ms C used to work. She learned how to calculate the faulty rates every day and record them in a copybook

(Ms C, par. 1818-1830). Her report on these relatively limited experiences of learning is mainly prompted by my question on this topic.

Differently from the other workers interviewed, it seems that Ms C had few occasions to reflect on her experience of learning, consequently she is less aware of it and also of opportunities for learning. Her case can be contrasted as being at the opposite of that of Ms A, who is well aware of her learning needs and able to organize learning activities to satisfy them. Ms B is also conscious of learning needs, but she shows a more collective approach to this issue than Ms A. She is able to frame this issue, taking into account the importance of a common language to communicate among departments. Ms D represents a case more similar to that of Ms A: she acknowledges even with joy the amount of things she has learned in her professional life spent in company E1 and she regrets that that time is now over, because of the changes in the workplace organization in recent years.

The analysis shows that workers on assembly lines can develop vocational learning needs associated with the object of the activity, even when the work organization approximates the Tayloristic model of fragmentation of tasks and this involves a separation between conception and execution. However, in E1, these learning needs are not considered relevant for the production. Other learning needs that have been considered relevant by the company are related to safety and communication skills.

8.7 Concluding remarks

Working at E1, on the assembly line on the shop floor, seems a simple task, which does not require engagement, but just the capacity to bear repetitive and monotonous operations. Yet the interviews with some older workers reveal that they are engaged in their jobs. Engagement is relevant in this research for this is the presupposition to allow needs and motives for learning to emerge[87]. With this research, I want to explore how older workers get subjectively engaged in their working practices. As I have argued theoretically in section 5.5, being in the condition to 'feel' the object of the activity through carrying out actions - and make sense of it - can lead to engagement.

[87] Engagement is defined in section 3.5 and possibility of engagement in workplaces is discussed in section 5.5.

How is it then possible that these older workers can engage in their jobs which seem to allow little autonomy, in that they repeat operations on the assembly lines?

The analysis of the interviews has shown that actually they have little discretion in their jobs, because their operations have been designed by the Time and Motion department and each operation is linked to the operation of the other colleagues on the assembly line[88]. Yet they become engaged because assembling components is a task that is connected to different dynamics and issues. Indeed, we have seen that their tasks involve: 1) targets of quantity and quality to be reached; 2) relations with superiors to ask for permission, but also to contest work organization and rules; 3) relations with other colleagues not only to share information but also to spend their working time in enjoyable or conflictual ways; 4) their subjectivities – that is, the personal senses attached to what they are doing in E1 - which orient them in the conflictual and contradictory situations met in E1; and 5) their bodies with their needs and features with respect to the conditions of work in the shop floor.

The analysis shows that the workers' cognition is active in all these aspects and that workers are involved in the working activity, not just as a performance of repetitive operations, but as subjects who mediate their actions aroused by the object of the activity through their subjectivities and in interconnection with other subjects, being all subjects involved in the material production, mediated by a variety of artefacts. These intertwined dynamics render practical and simple issue such as, for instance, wanting a mechanic's intervention on the assembly line to check its functioning (section 8.4.2) a complex issue which involves materiality (presence of technicians and availability of spare parts), and subjective and organizational aspects. Another case in which we are able to see this intertwined dynamic is when Ms B talks about how the electronic components are treated on the assembly lines. Here, it is evident that she does not limit her participation to an executive plan, but her subjectivity orients her through the meanings[89] she has developed about how electronic components should be treated. In

[88] The fragmentation and standardization of tasks designed by other colleagues working in other departments (such as the Time and Motion department) can be interpreted as the application of the Tayloristic principle of separation between conception and execution. I discuss the implications of the application of this principle for learning in section 5.5.

[89] As discussed in section 3.4.1 meaning and sense refer to social and personal meaning/sense respectively. Here I use the term 'meaning' because what the electronic components mean to Ms B seems to derive from what has been developed in the cultural and social world of production about how to treat

other words, she has learned in the previous workplace that this type of component needs to be treated with care. Now when she deals with these components, she attaches to them the social meaning developed in the previous work activity. In other words, this has become her personal sense and motive which guides her when she deals with them.

Yet this personal motive does not seem to fully coincide with the collective motive of the activity in E1. As emerged in the analysis in this chapter, this latter looks as generated by an object which probably still feels the effect of coming from the original producing of analogical devices started many decades ago. In other words, it was a production organized to produce goods which do not need the care required by digital devices. We could also say that Ms B's image of the object of the activity E1 might be slightly different from the one which orients the management. According to the Ms B's interview, there is not explicit discussion about what is the object of the activity of the enterprise E1. And so Ms B can complain as not be heard from the management about what she judges as really bad. For what is the central interest of this research, it is evident the engagement of Ms B.

Other examples of intertwined dynamics are represented by the hostile welcome Ms B received from her colleagues on the assembly line when she started working at E1, or the difficulties met by Ms D in finding information about how to assemble new parts on the new assembly lines that she has been move to.

In all these situations we can see the different workers' subjectivities in action, relations with colleagues, the use of artefacts, and the targets to be reached. In these situations there is not only the repetition of the operations of assembling, but all of those aspects listed above.

This is relevant to the issue of motive for learning because the engagement with the activity can develop in these aspects of the working practices, that is, in the subjective and objective relations with colleagues and superiors in which people deal with issues that have arisen by the material production in their working practices. Relations are subjective because subjectivities are involved, but they are also objective because the material production is what connects them. And subjectivities are also connected to the

---

this type of artefact. In this case, social meaning and personal sense about how to treat electronic components coincide.

material production by past experiences in other workplaces or in the same firm which have provided opportunities to develop personal senses and hierarchies of motives.

The past working experiences become terms of a comparison and enrich the personal view on the current workplace, its object and its organization. We have seen that the experience of working in the past in an innovative company seems to have been significant to Ms B (see section 8.4.1). It looks as if having been highly engaged in an activity that was heavily oriented to quality and innovation could have been internalized by Ms B as a motive for building a well organized and collaborative workplace. This motive now orients her in her union activity. At the same time having internalized this motive also means that Ms B gives her personal sense to the object/motive of the activity carried out in the company E1. In other words, she performs her task of assembling as guided by her personal sense of how that work should be done.

For Ms C, past working experiences mean that working at E1 is about having a stable job. She was aiming at it after working for more than twenty-five years in small and unstable businesses. She misses the autonomy she used to have and she is paying a high cost in term of working hours. Now that she is got a stable contract, she would also like to work in a well organized workplace, which is the other aspect (together with the stable contract) that she was missing when she was working in the previous enterprise, and she still is missing in E1. In other words, her personal sense of assembling parts is related to her past experience, that is, the object and motive of her current actions (performed in her relations with colleagues and superiors for example) might be shaped by her image of the object of producing parts, elaborated reflecting on her experience in the previous workplaces and comparing it with the present one. This reflection can also be mediated by her way of carrying out domestic activities, in which she is autonomous and can be efficient, as she likes to be (section 8.3). Her hope of a better organization of work in the future could indicate that she has elaborated an image of the object and motive slightly different from the one which looks actually implemented in the company E1 in the period of my investigation. This is similar to what I noticed above in the case of Ms B, that is, Ms C has developed her own image of how her workplace should look like too.

The personal sense of the past experience of Ms A seems not definitive, suspended in the wait of the outcome of her commitment in E1: she is fighting to be recognized as an

excellent worker, trusting that the future can offer her good opportunities, rewarding her for the efforts she is making now. Her position as an operator gives her more opportunities to be autonomous, and to be in connection with other departments of the company. From my CHAT influenced perspective, and drawing on the analysis of her interview, this worker, (like Ms B, the trade union representative) has had more chance to perceive the object of the activity of the company E2, and to collect a wider range of elements of reflection on what the object is. She thinks that the object of activity of the company E1 would need more collaboration among the colleagues and department. This seems to represent her personal sense of committing herself everyday to the company E1. However she puts a limit on this commitment, to preserve her own private life from what she thinks is an exaggerated request of commitment from her superiors (section 8.5). Again, as in the case of Ms B and Ms C, she also has her own image of how the work should be organized.

Ms D's good experiences in the previous 40 years of work in E1 has given to her self confidence about what a well done job is: she likes working, caring about good quality; the pleasant memories she has of the past seems to be helping her in the current tough period of changes and give sense to what she is doing.

All these four older workers are engaging in different ways in their jobs, according to their personal sense of the object/motive of the E1 activity. Ms B is fighting to improve the working conditions in a more collaborative way, not only for the benefit of the workers, but for the success of the industrial activity, convinced as she is that it is also in the workers' interests that E1 can stand the competition. Ms A is committed to making her assembly line work properly and showing that she is a good operator, despite all the problems of communication and cooperation with colleagues. Ms D has a long history of involvement in guaranteeing quality standard in E1 production and she feels well integrated in E1. Ms C is happy to have reached her aim of having a stable job contract, even if she likes working at the desk more than on the assembly line. She still misses a well organized workplace and better relations with the superiors.

We can see that in most cases the relation between the personal senses and the collective meaning of the motive for the activity of the company E1 is in tension and

creates frustration[90]. The frustration comes, for instance, from being required to perform according to quality standards and in safety conditions, but then not to receive adequate support to achieve these. A production which aims at quality should cope with problems as soon as they appear in the labour process. Yet this approach of taking into consideration the irregularities in the process and solving them, as happens in the Toyotism (see section 5.4.2.2), requires the cooperation of the workers, who become resources of practical knowledge and recognized as both thinkers and doers. In the case of the company E1, it seems that there is a tension towards that way of producing, attentive to both quantity and quality, but at the same time there are difficulties in organizing the activity in such a way that workers receive all the support and the consideration they feel to be appropriate, due to their image of what is the object of the activity and how it should be organized. It is not the focus of this research to investigate the reasons for these difficulties and contradictions. Yet they are relevant in determining the feelings of frustration in older workers' engagement. Hence I briefly discuss these difficulties without the ambition of being exhaustive, but only to indicate how these difficulties can be relevant for learning issues.

One of the reasons for these difficulties could come from mechanical ideas about how the development of the enterprise and its workers in the changing conditions of the market (new competitors emerging) and regulations about work (for instance the new legal requirements to enhance safety in workplaces) should come together. This is what the organization of the vocational education courses seems to indicate. In the interview with the HR director, E1's large investment in vocational education is seen as strategy to pass the necessary information about safety and quality to the workers (recipients), with the expectation that the workers should act according to the new information.

Indeed the words and concepts used by Dr Q to illustrate the content of the course about communication indicate this type of view, close to a behavioural and computational perspective (see section 3.2). The expectation that workers could cope with the gap between the reality presupposed by the safety course and the one experienced on the shop floor signals an individualist view of learning. In the CHAT perspective, it is not surprising that workers have found difficulties in appreciating the course contents and – in the words of Dr Q - the "returns" were poor: in fact in a socio-cultural approach

[90] For the difference between sense and meaning see sections 3.4 and 5.5.

learning is a cultural and collective process and is linked to the development of activities. As highlighted by the trainer, Dr L, she found it difficult to hold the course after the first meetings, because the initial interest in the safety issue was not supported by visible changes to workers practices on the shop floor. Indeed the concept of single development between subjects and activity - discussed in sections 3.3.2 and 3.3.3 - has a profound meaning. The concept of single development refers to the co-evolution of subjects and activity through the process of internalization/externalization of artefacts, a process which is mediated by the sense making in the subjectivity, and occurs in the specificity of contexts and activities. In this perspective it is difficult to believe that a single course of sixteen hours can change the way of thinking and operating of workers who are still receiving contrasting indications about what is important to care about in their day by day performance. As it has emerged in the analysis of the interviews, it seems that the foremen also have difficulties in mediating their performance with symbolic artefacts of safety (i.e. the use of the “little key”). From a CHAT perspective the vocational education course on safety, communication and quality has perhaps been a step forward in the development of a shared and common culture among the E1 employees to mediate their actions in the E1 industrial production.

This experience of E1 seems to confirm the limits of computational, behaviourist and individualistic views of learning, as highlighted in Chapter Three, which tend to design courses as transmission of standardized knowledge to be applied in other contexts under the individual responsibility.

In conclusion, the missing returns expected by E1 from the vocational education course are not due to a lack of motives for learning, but – in the CHAT perspective – to a misunderstanding of how personal and activity development occurs and the role that education can play in that. From the point of view of motives for learning, the interviews with the older workers reveal clear motives for learning, and are very connected to the object of their engagement, which is assembling components in E1, achieving both quantity and quality. The problem is that the courses were about issues that workers are not used to coping with on the shop floor: the observance of safety requirements is not strictly adhered to; quality procedures are considered not to be satisfying by the same workers (for instance how to treat the electronic components);

interrelations among workers and between them and the bosses are not taken into consideration in the day to day cases.

On the contrary, other learning needs, such as computing skills and proper training in the assembly of new products when workers are moved to new lines are not met by the management.

Ms B raised an interesting point, saying that knowing the names of the components and what the parts are used for can help communication with the personnel working in the quality department as well as actually producing quality parts.

This request for vocational education on components and parts also seems to reveal a demand for consideration. The emphasis Ms B puts on lack of training and vocational education in E1 could be a way of expressing the idea that something is missing in E1. Workers feel devalued and considered just as part of the assembly line ("little hands", see section 8.3.2), executing tasks which allow them – as women – to deal with their familial tasks. Yet these women have a different perception of themselves and would also like to be seen as capable and motivated workers.

Learning is problematic in this enterprise, as I have just argued. Yet there is also another issue which has emerged more than once and which is related to the learning one. These older workers have elaborated images of the industrial production in which they work which seems to not correspond to the one(s) which orients the management. However the management is in the position of designing the labour processes and work organization. So these differences in how the object is imaged across the hierarchy, seem to have as consequences at least i) the frustration of the older workers interviewed and ii) the loss of contribution from these latter in the improvements of the production. I have also noticed some possible discrepancy among the HR director's, trainer's and workers' images of the object of the training course discussed in section 8.6.1. All these evidences of different images of objects relate to the learning dimension of working in enterprise E1. When the images of objects are not openly discussed to attempt to align them, different imaged objects can give different directions to the same activity by raising different actions and goals. Yet, as we have seen clearly with the cases of the digital components and the resources allocated to fix the faults in tools - which indicate that the older workers who reported these have in mind a different object of the activity - different (imaged) objects yield to different needs of knowledge, cultural tools,

language, practices. Yet these different needs find difficulties to meet responses, creating from one side frustration in those who feel the needs and do not get the responses, and to the other hand a loss of possibilities to enhance the activity by learning all together how to do it.

9 Engaging in vocational learning in a specialized production

9.1 Introduction

In this chapter I present and discuss the findings of the data analysis with respect to the enterprise E2, which represents the second case study of my empirical work. This company approximates the model of flexible specialization, discussed in Chapter Five. The object of its production and the consequent features of its working practices contrast with those of the labour process in the firm analysed in Chapter Eight. Accordingly, I expect a different subjective relation with the object of activity in the cases of the older workers interviewed. The analysis plan is similar to the one presented in section 8.1. Information over the access to this company are presented in section 7.5.

9.2 Working in a flexible specialization production

Enterprise E2 used to build a type of complex machinery and was part of an Italian multinational corporation. Some years ago it was sold to a foreign corporation and shifted its activity to do service to the machineries which it had set up around the world in the past. In the last years its business strategy is to extend maintenance to similar machineries made by other brands. E2 has an important activity of production involving about one hundred workers to produce the parts necessary to the field service. The workers are all men. The overall number of employees is about two hundred. My analysis concentrates on the shop floor in this company too, as I have done in the case of enterprise E1. On this shop floor manufacturing of parts needs high skills, flexibility, problem solving, and autonomy of the workers. Referring to the typology of strategies of production discussed in Chapter Five (section 5.4.2.1), this industrial activity presents some of the key characteristics of the flexible specialization. E2 is part of an industrial district, the one of the automotive industry in the area of Turin. The parts produced by E2 require a labour process organized by work centres (or central tool rooms), equipped with milling cutters, lathes and welders. Workers are broadly skilled, can shift from one job to another, and they are able to collaborate with engineers to solve the problems that arise in the execution of the tasks. On the shop floor they produce parts which may be either completely new or they repair old parts. When they repair old parts some new elements are introduced to enhance the performance of the machine into which they will be put. This work of adjustment between new and old

requires studying and problem solving (Mr B, par. 703). The object is not only to repair/maintain the old machine, but also to improve its performance.

Table 9.1 – List of people interviewed in company E2

Name in code	*Role*	*Age*	*Birth year*	*Department*	*Gender*	*Educational level*
		(October 2007 - March 2008)				
Mr A	older worker (welder)	49		shop floor	M	compulsory school
Mr B	older worker (turner)	54		shop floor	M	vocational education
Mr C	older worker (gear cutting machine op.)	52		shop floor	M	vocational education
Mr D	older worker (coupling)	45	1963	shop floor	M	vocational education
Mr F	older worker, supervisor of supervisors	57	1950	shop floor	M	vocational education
Mr G	older worker (welder, turner, MMO[91])	43	1965	shop floor	M	vocational education
Ing L	CEO	60 (estimate)[92]			M	unknown
Ing M	manufacturing director	38 (estimate)		shop floor	M	graduate

According to the CEO, enterprise E2 has a history of development to adapt to the market, using the knowledge accumulated throughout its activity:

"It is needed to concentrate on what we have to stand it out so that it became a factor of success to allow

[91] Milling machine operator.
[92] See note 70.

living, living that means expanding […] being better in the goods than the competitors"

(CEO, par. 12)[93]

I interviewed the CEO and seven employees; among them one is the manufacturing director, one is the supervisor of the supervisors, five are older workers. Out of these older workers, four are over 45 years old and one is 43 years old (see the above Table 9.1).

9.2.1 Changes in the market and challenges for working practices

In the last decade the management has chosen to respond to the global pressures by improving the quality of the parts and the service. This has required a difficult change in the culture of production, in work organization and working practices. The CEO of company E2 points out that the difficulties are about the change of mentality, because now knowledge[94] is more important than just goods:

"There is also a market change: today knowledge counts more than goods, flexibility more than – let's say – habit. Therefore, if this enterprise – as all the other Piedmontise enterprises – if it had carried on working according to the old model, absolutely it would not have been competitive on the market."

(CEO, par. 12)

The role played by customers is more central:

"Goods: it does not make sense to say 'this is what I do'. Congratulations! This is what they want! Therefore – different, isn't it? – no 'I can do this, if you want it, right, if you don't want it, wrong'. As they don't want it, then tell me what you want and I have to adapt myself to you, haven't I?"

(CEO, par. 13)

The need to establish a relation with customers requires change of attitudes:

"Our problem – but it is not just our problem, I think that it belongs to all of the more or less Italian enterprises – we are passing from a world which was based on the production towards a world based on services – all right – from attitude of arrogance towards attitude of – pay attention "service" (in English) not in the sense of acquiescence, "service" in the sense "the customer comes first", all right - therefore concepts as force, strength, command, attitudes as saurians, so dinosaurs, are no longer those good. Therefore if nowadays you want to compete, the true values are being flexible, adaptable. You don't control the world, you don't have the Alpes to protect yourself, there are no longer laws that … we are we are we are in the world, and the gifts of intuitivism maybe are becoming more important than knowing formulae by heart. Let's say, the true word is more feminine than masculine – I maybe acknowledge to you this advantage – and I would say that it will win the mammiferous, frail but adaptable, with respect to the dinosaurs."

(CEO, par. 15)

As discussed in Chapter Two, the increased importance of knowledge and services in the economic activities involves changes in the required skills and a flatter hierarchy.

[93] For a complete list of the conventional signs used to transcribe the interviews see Table 7.1 in section 7.7.1 and notes 71 and 76 in Chapter Eight about details reported for each excerpt.

[94] It is not clear what the CEO means by 'knowledge'. However from the context of the interview it seems that he refers to the immateriality embedded in the today present material production.

The development of a new way of working and producing is, however, complex for the technological changes can come along with other types of changes.

In the case of E2, the introduction of the computer-based tool machines started in the 1980s, but in the first part of the 1990s that transformation went on with a change of strategy of the multinational corporation of which E2 was part, which chose to focus on its business core production. These two changes, strategic and technological, caused redundancy of labour in the middle of the 1990s. The CEO explains that the workers who were asked to take early retirement were holding a culture unsuited to the new technological phase (CEO, par. 46; par. 64). He also shows some doubts about the possibility of changing such a culture through vocational education and training (CEO, par. 46). In sum, the strategy of the enterprise was to either make redundant or move to other enterprises a part of the workforce to respond to both challenges: the need for a new culture of working with computer-aided tool machines and the need to prepare for the sale of E2. After the acquisition of the enterprise by the foreign multinational corporation, the company E2 was slimmed down and ready to change its organizational model to adapt to the new business strategy, now oriented to providing field service with the support of a customized production. Along with a new hierarchical structure, much flatter than before, the enterprise started to hire young and highly educated employees (CEO, par. 15). Among them were graduate engineers, but there were also workers holding a diploma (CEO, par. 17). Therefore, E2 has tried to develop a new culture of work both by making redundant part of the workforce and hiring more educated employees.

Today, on the shop floor, workers belong to teams charged of manufacturing different items. Each team has a supervisor, and the supervisors have one supervisor who supports the Manufacturing director (Manufacturing manager, par. 304). The use of the word “supervisor” instead of “foreman” reflects the type of relations the top management wants to foster, that is, less hierarchical and more collaborative than in the past. This is usually an aspect of the model of lean production and, in fact, the manufacturing manager refers to it when I ask him the name of the model of organization E2 is using. He mentions ‘lean manufacturing’ and links it to the Japanese model and Toyota (I discuss this model in section 5.4.2.2).

This manager points out that the management has given these supervisory positions to the older workers who have distinguished themselves for their skills and competence. Their role is to help their colleagues to carry out their tasks (Manufacturing director, par.300). In this enterprise, the function of control is low compared to the function of organizing work, which includes providing the workers of what is necessary to accomplish the tasks, and thus supporting collaboration and cooperation. The Manufacturing director says:

"I am used to gathering - a bit - sometimes people and explaining what we are doing, how things are going, or maybe in front of challenges as we are having now, you take people who – I mean – are the principal actors of the challenge and explain to them that the collaboration is essential, that it is needed however to row in the same direction, so this is a way to talk. And however very often I am doing one thing with people working with me: I pass all the information."

(Manufacturing director, par. 152)

In the past, before the introduction of the computer-aid tool machines, another type of culture was animating this enterprise.

The supervisor of the shop floor, Mr F, who joined the company E2 in 1979, after having worked in another enterprise, says that he found a traditional way of doing things which was resistant to innovation:

*"… when I went in E2 I made a step backward as a decade. That is, in '68 I started working at *** and went on until '79; on the '79 I went to E2 and (it was) as I were catapulted say of five six years back. So from a technological point of view - at least in this enterprise - I am talkiiing that then it is my reality, what I lived, that is a step back, that is because then there still was the mentality:* l'uma sempe feit parei *in piedmontise [we have always done it in this way] no, we have always been doing like this. […] In the sense thaaat E2 took long time before modernizing itself from the point of view say of, uhm methodologies were a bit consolidated, no."*

(Mr F, par. 149-197)

He also points out the workers' jealousy of their own knowledge, and formal relations with the hierarchy. This was in the 1990s, before the acquisition of the enterprise by the foreign corporation.

Clearly the enterprise had to face the changes in the market with new working practices and culture of work, putting more emphasis on quality and readiness to respond to the market dynamics, allowing a better circulation of practical knowledge[95] among the workers. As pointed out by the CEO, one strategy could be to invest in vocational education. However he did not believe that that could be the solution. Indeed, as I mentioned above, the company E2 choose to change through turnover. The workers

[95] This concept is defined in Chapter Three, note 22.

who were young when the transformation started are now working in the transformed enterprise as older workers. It is not relevant to this research to report how they succeeded in this transition neither to discuss the choice of turnover instead of vocational education. What is relevant is to take into consideration that they learned new working practices which involve the use of ICT, more exchanges with other peer colleagues and also with engineers in the technologies department.

The focus of this study is the subjective aspects in the work and learning engagement of these older workers. Indeed, these older workers in E2 have a long experience of workplace learning. Their current learning is the continuation of the previous workplace learning and is related to this. As I will show in the next section and in the section 9.3.1.1, this relation with the past is the experience accumulated and used to mediate the current working practices.

9.2.2 Older workers' object: complex tasks using tool machines

Mr D is 45 years old. He has been doing the 'coupling'[96] for fifteen-twenty years now (Mr D, par. 742). This work involves many steps and can last two or three days. It is done following a diagram which provides parameters to start the process. Since the material can be slightly different and precision is not absolute, and each step is built on the outcome of the previous step, Mr D has to do the job with concentration and continuous evaluation of the progress of the job to adapt the following steps to the outcome of the previous operations[97].

This work requires calm and patience. Mr D mentions one of his colleagues to whom he taught the process and could not master it. Mr D's explanation is that one could easily panic: this can happen even after years of experience, and that the colleague seemed not to be able to cope with stressful situation as the one that might emerge at some point in this long process of coupling. Mr D also refers to tenacity. This type of work requires tenacity and calm.

[96] As I understand from Mr. D's description of, the coupling operation he does is the mechanical job of putting together parts with a certain angle of inclination. This task demands a high degree of precision because the number of elements to couple is high as well as the risk that tiny variation in the inclination can cumulate and result in a significant variation of the inclination in the end when the last parts are coupled. Since the coupling operations can last for two-three days, the tension and attention of the worker has to be constant without knowing the outcome of his work for days.

[97] I cannot report quotations from Mr D's interview describing his work without disclosing the object of activity of E2.

Mr B (54 years old) is a turner and produces with the lathe parts of different dimension, from one metre to six metres, made of various materials. He explains that these parts are subject to buckling and to get it right, you need to know tricks which he has learned from other colleagues (see 9.5).

Mr A (49 years old) is a welder and tells me with passion that the work of welding is complex and one has to know a lot of things. For example you should not weld and finish up one side at time, because when you pass to weld the other side you will find it difficult to do, because the piece will be bend on the side that has already been welded. You have to know how to weld a bit each side for few times. It is also important to know how to take the piece. But these are just examples of many things that you have to know (Mr A, par. 189-197). Mr A agrees with me when I comment that the jobs that have been described to me by him and his colleagues look like quasi craft. He explains this pointing out that it is important to be precise and do a good job because the part has to be passed to some other colleagues who carry on the manufacturing process (Mr A, par. 269). It is interesting to note that Mr A mentions (quickly and giggling) that if his colleagues who deal with the subsequent phase of the labour process had problems, they would complain to him and he does not like to be told off. In his account of the connection between his work and that of other colleagues the industrial design appears as having a pivotal role as the artefact to which the workers refer in their work. In the above mentioned quotation, Mr A says “they (my colleagues) must receive it (the part he produces) as the industrial design dictates”.

Mr. C also reports that he has a very difficult task. He is a gear cutting machine operator and says that there is always a high risk of damaging this machine because the operations are complex. Any damage to the machine would be highly costly. For Mr C, this task is a challenge every day. He describes his job as requiring continuous attention because the material can be slightly different or the machine can have a small problem. He changes the parameters of the machine to adapt it to the variable conditions of the job to be done (Mr C, par. 1195-1323).

All the older workers interviewed show an evident engagement when they describe their jobs. They give accurate descriptions and while they are talking, their speech becomes assertive, more confident, its rhythm quicker, the timbre higher. I return to the issue of

engagement later after discussing the subjective dimension of these older workers in their working practices.

9.3 Older workers' subjectivity and inter-subjectivity

As discussed in Chapter Three, we can understand older workers' selves as the product of an ontogenetic cultural development which has occurred through participating in different activities and social practices (in the past, but also in the present), building their own hierarchy of motives and personal senses (the self) (see section 3.5). In other words, the dimension of past is relevant to analyze the workers' subjective aspect in the E2 activity. Hence the next sub-section on the subjective dimension starts with a presentation of data about the workers' past experiences, followed by another sub-section in which I pull out from the interviews data about the workers' subjectivity, that is, what emerges as important for them. This is a way to detect their personal hierarchy of motives. Differently from the case study of the company E1, these workers refer less frequently to their subjectivity and this requires a major effort of interpretation. The last sub-section is about inter-subjective dimension and focuses on the relations with the superiors and colleagues.

9.3.1 The subjective dimension

9.3.1.1 The past experiences

Compared to the interviews in company E1, there is much less reference to past experiences in other workplaces in the interviews in company E2. The older workers of the latter firm, with the exception of Mr. C, mention more often the accumulated experience in the same company E2 in which most of them have been working since they were young. When they refer to the past it is because they are talking of the complexity of their tasks, as described in section 9.2.2, and this needs experience to be successful.

For these older workers experience means to know the tricks (Mr B, par. 424-465), but also – as in the quotation of Mr D below - to use past experiences to bridge the gap of information necessary to carry out the job.

The interviewees describe their tasks as dotted with mishaps. More than once they say that despite the industrial designs and standard procedures, their jobs present variability

related to slight differences in material or problems of buckling (Mr A, par. 90-93 and 267; Mr B, par. 442-445 and 453; Mr G, par. 260; Mr C, par. 1271, 1275, 1280-1324). In these cases they point out that experience can help a lot to adapt the procedures to the changed conditions.

It also happens that they have to reproduce parts, the industrial designs of which are not available.

"Yes because perhaps you on the basis of experience also perhaps also perhaps seen on oth- on other 'things'[98], perhaps they are a bit similar, then you can think, can say: "Well, when we use to make our 'thinggg' perhaps this we should have done like this perhaps, perhaps this is a tiny smaller yet perhaps with respect to like this or no?" then it can come up eh, perhaps then you can evaluate, you can see how"

(Mr D, par. 432)

In this case too experience is very useful. As the quotation shows, Mr D cannot explain how the experience mediates his work. The quotation is full of 'perhaps' and hesitations. However it is possible to detect a reference to the dimension of the 'thing'. It seems that the experience helps through the comparison between how the part appears and in what way it is different from previous parts produced earlier.

The third case in which experience is useful is when – even after fifteen years of work – it happens that the labour process takes a bad turn and becomes difficult and you risk panicking. Mr D remembers that a younger colleague was probably unsuccessful in mastering the job he does and which he was trying to teach him, because he used to feel very nervous when things did not work properly.

Having experience also means having developed a wide range of knowledge so that even a new job can be mastered in few days. About the possible need for another qualification to find a new job Mr B says:

"Non, but I think to be able to find a job, I think to find it, because somehow, well, Iii have – I've got a wide range of mechanics, then I've got different materials, differeeent"

(Mr B, par. 1032)

After my comments which are shifting towards another issue, he finds a way to come back to this issue about doing a new job, as if he were more interested in what he had just said (the above quotation) and had in mind a story to illustrate to me that it is true that he can master a new job in a short period of time. He wants to tell me that once the company E2 had a downturn, and he went to work in another firm in which he had no

[98] I use the word 'thing' instead of the term used by the worker for it could provide information to disclose the identity of the company.

difficulty in learning how to produce other types of parts, much to the surprise of the foreman. (Mr B, par. 1054-1074). He interprets this easiness as due to experience which results from having done different things, knowing how the tool machine works, but also from the fact of having a qualification. Today he feels self-confident and empowered by his working experience and the knowledge he has developed through it.

Mr C talks about the meaning of the accumulated experience when one is an older worker:

"fifty years old you have had experiences, but sometimes that experience there you can throw into the wastepaper basket, as when you retire, in pens- the fact of retiring, you can have a wide experience, but it is nice to transmit it to someone so that when you pass by the firm you say: "There, there inside there is one who has learned something". This – because otherwise, me once that I retire really I could throw everything in the wastepaper basket, all my thirty-five, forty years what's the use of them? The good really of work is to hand on, then logically there is who receives less, who receives more, then it is nice to know that in a firm, that you what you have learned - however one should not resist teaching, one should teach because anyway that is useless to take it home, hence teaching and having- and having- ehm ho- how can I put it? Fresh folk in order to be able to carry on in- in the activity of the firm."

(Mr C, par. 465)

In this excerpt there are many themes intertwined: the theme of the accumulated experience in decades of work, its connection with learning, and what to do with what one has learned at work through decades of coping with different situations[99], that is, the meaning of thirty-five, forty years of work when one retires and leave the workplace. Mr C does not see how the knowledge developed through experiences in the firm can be of use outside the firm. The personal sense found by Mr C is in transmitting the knowledge to the younger ones, even if he is also aware that not everybody is ready to learn everything. He takes it for granted, as something that one cannot change. However he images himself passing by the firm and thinking that some of the knowledge he had developed is now used by someone else. Mr C also gives an additional personal sense of transmitting that knowledge: for him it is passing the developed knowledge to the younger colleagues so that the activity can go on in the future. This perspective as a stakeholder of the enterprise is not new in the interview: in another part of the interview this worker stresses that, having been an organizer in the past, he can guess the difficulties as well as the potential of the company (Mr C, par. 501). As I discuss in next section, Mr C has experienced a social mobility from being an employee with an organizing task to being a worker.

[99] Mr C is one of the workers who points out that the parts manufacturing is never the same and he has always to adapt the procedures to the variability of conditions (Mr C par. 1271-1324).

Mr G is a bit younger than the other older workers: he is 43 years old. For him experiences are those that allow a worker to develop and become a professional milling machine operator or turner or welder (Mr G, par. 22-3; par. 256). He links this to the degree of employability one can get from making experience and acknowledges different opportunities for making experience in different firms.

9.3.1.2 The self

The older workers interviewed rarely talk about themselves. Elements of their subjectivity surface in their digressions prompted by a telephone call which interrupts the interview or chatting about their home or memories of their childhood. Mr A is the only one whose interview provides some material about his self to analyse. I remind the reader here that he is a welder.

Mr A thinks of himself as a meticulous person and when the job does not give the outcome he wants, it gets him worked up. He is not happy until he gets what he thinks is right (Mr A, par. 267). As reported in section 9.2.2, he is the one who describes how it is necessary to be precise in welding to obtain a good outcome. He is also the worker who shows concern about receiving not good feedback from his colleagues when he passes on the part after he has carried out the welding phase. So it seems that the type of work he does makes him precise and careful.

However, he may have also internalized being careful about the consequences of his actions in terms of the effect on others, in his relation with his father and the situation of his family. Explaining why his sons have decided to study instead of working, he recalls memories of when his father told him that he would have supported him if he wanted to carry on studying. His father was just asking him to be serious about that, because he was the only one working in the family and there were four sons (Mr A par. 286-288). It seems that Mr A thought carefully and then decided to go to work. After a short time, he realized that it would have been better to study, but he did not want to create a problem to his father, and so he tried to attend evening classes. So Mr A seems moved by the motive of being a responsible person since he was young and he may have internalized this in his relationship with his father.

Mr A shows engagement with his family and care for his sons. During the interview he received a call from one of his two sons and accepted my offer of interrupting the

interview to ring back his son. He then said that his son was about to leave home, he was taking another exam that day, after having taken one the day before, and feels a bit nervous, and that they, he and his family, are always in contact (Mr A, par. 276-284). Mr A thinks that it is good that his sons have chosen what school to attend, so that they could be convinced about their choices (Mr A, par. 300-304). From what Mr A said, it seems that it is his conviction that feeling autonomous about what one does helps one to be strong and achieve a good outcome.

I introduce the case of Mr G now.

Mr G's idea that 'making experience' is important and that one grows gradually through the workplace ranks seem to be linked to his personal history. He started working when he was sixteen-seventeen in a 'fabbrichetta' (a small firm) and "unofficially", i.e. without a proper contract. He describes his work start as doing things as cleaning, keeping order in the workplace and then gradually learning from the older workers and thus making his own experience. This idea of making experience and growing seems to have been the motive that oriented him in the choice of his work[100]. Mr G presents himself as a person who could not work on an assembly line for more than one week. He has experienced this type of work when he was young. He likes creative and challenging jobs. He likes building something from scratch and he tells me his passion for ship and aircraft modelling. This hobby was transmitted through his father.

"But I don't know not … I as a person could not succeed to stay at an assembly line but neither … I wouldn't do a week, I would leave. Because the assembly li- if you take a bolt, you put it there, you turn it, you do it two hundred times a day, the day after you know you come back there you take that again you turn it, the day after you do it take that turn it, in the end … it can work if the person says: "well, I don't give a damn, stop, I have my bolt", as in the movie of Charlie Chaplin there … […] I like to be creative, I like to be all these things here, but then I am really also a lover of challenges, because starting from from a thing and arriving to build anything. Even at home I have a hobby, I do modeling, I build ships, I build aircrafts, these things here, I like it. I take there, I take even only the design and without assembling kits or various things, I take those things here and make, build. I like starting really from scratch and build then you say: "look how beautiful". Then if you see it there which floats in in the water because with your small engine you are the // (?)"

(Mr G, par. 332-340)

Mr G says that when he was young, he used to pass the whole summertime on the mountains – close to Turin – at his grandmother's home. He says that he has nice memories of those summers and links that type of experience to his love for living outside the big city – as Turin is – and having a house in a green area so that he can

[100] In a CHAT influenced language I should say that making experience and growing is an object/motive.

enjoy cycling with his children in quiet roads. Mr G is an active person and this seems to be something that he learned when he was child during those summers. Yet he tells me that he became a passive and lazybones ("pantofolaio") person – as his wife used to call him - just after the marriage for a while: he used to have a big sofa, apparently very attractive, in which to sink after work. At a certain point he decided to get rid of it, and now he believes (again) that:

"Instead the stimulus is needed, … and it is always necessary to put himself there and start something new, even if one thinks to say something stupid but I think that … anything cannn make you … either happy and … […] likeee in other words anything hum ... I think that: a lot of people should have hobbies then to be enough, in other words to do also I don't say a lot but a little bit of sport it is needed in life. Me too I did a lot of it in the past but I say one should never put himself there and arrive home: sofa, remote control nooo, no- it doe not exist /eh, eh/(giggling) non."

(Mr G, par. 1,069-1,074)

Mr G seems to be a person that has control of his life, able to learn from experience and to put himself in the situation which he thinks is good for him and his family. In the following quotation emerges the instrumental role of work to sustain his family:

Mr G: "In fact I don't understand why a lot of people bandage their heads sometimes because maybe things are going wrong thus or things are going wrong outside the firm or they do not succeed in integrating well into the firmmm or non, it is not sometimes I don't understand them because those are only problems that are created by themselves. I think that it is necessary to go always straight, we have a life, enjoy it thoroughly, work allows you tooo carry on a discourse with the family, to go on holidays, eating, buying that, buying that, work allows you to have a salary which allows you to do these things here, until where you can afford. Then of course if people bite off more than they can chew then it is sure that they bandage their heads at that point, but you have made it to you.

I: "Hum"

Mr G: "On the contrary it is always necessary at a certain point and if you come across a problem, climbing it, go straight there and stop *[in English]. Otherwise in the end … what do you do … you get stuck there."*

(Mr G, par. 512)

Clearly Mr G wants to present himself as a pro-active person.

Mr C joined the company E2 recently and had to adapt himself to the new situation, which he considers very challenging (Mr C, par. 207; par. 424-441). He used to really like the first firm in which he started working when he first entered the labour market (Mr C, par. 211), and where he worked for thirty-three years (Mr C, par. 433). He was forced to leave that firm because it was in crisis. He now feels less involved in the dynamic of the firm E2 compared to the situation in that firm. He misses the possibility of confrontation with those who take the decisions, which he used to experience in the former firm (Mr C, par. 642-700). However he seems to try hard to do what he is asked to do. Despite the feeling of isolation (Mr C, par. 894), he keeps a perspective as if he

were close to the management view, as also reported in the previous section. Why does this person react positively to the changes in his life which are not completely in his favour? It seems to me that it is because he has developed the personal sense of being an organizer (potential manager) in his previous company, which he loved and this keeps giving him direction in his working practices. Besides this, feeling responsible for his family also plays an important role in motivating him to do his best to keep the job (see section 9.4).

Mr B describes himself as a person inclined to help others (par. 499).

Mr B shows some emotion when I say I have nothing else to ask him and give a signal that the interview is about to end. He says with an emotional voice and giggling as if he were embarrassed that it was nice to talk to me and have an opportunity to reflect on his working life:

I: "[I thank you]"

Mr B: "[No problem!] No problem, /it has been- has been nice/"(giggling with slight embarrassment)

I: "Were you interested?"

Mr B: "No, well it is also nice to examine a little bit sometimes, to confront the- the hi- your own things with someone"

(Mr B, par. 1116-1122)

As reported in sections 9.3.2.2 and 9.5, Mr B is keen on learning mechanics and teaching tricks to colleagues. He finds pleasure in these activities. So this remark on having liked to reflect on his working life with me might be connected to his passion and interest in mechanics.

9.3.2 The inter-subjectivity

Mr B's interview offers more information about how he experiences the relations with his superiors. The relation with his supervisor is good: "he [the supervisor] comes whenever he is required, he is a self-made man, he knows the work" (Mr B, par. 515-519). Mr B does have good relations with the Manufacturing director too, but he has never talked to the director of production. He has talked to the CEO on the occasions of the two meetings which he organized to share information about the sales with all the employees. Mr B thinks that it is very good that workers are invited to those meetings too. He appreciates that they are not involved in the choice of what sales or what transactions, but they are asked for their opinions when the engineering of a new part is needed. However he thinks that they as workers count little ("qualcosetta", Mr B, par.

551). It seems that despite this, every time he can see that he counts, even if little, this makes him happy. It happened the day of the interview too (for a more extended report of this episode, see section 9.4). He was working on a part that was modified by the engineering department. The change did not work. He called them, they came in five minutes. He does not understand why they did that modification, but it seems it does not matter. What matters is that his work had a problem and he could call the people above in the process to come and adjust things.

However the relations with the superiors still seem to be marked by a traditional way of intending hierarchical relations, even if it looks as though control permits some room for personal interests. I noticed that the Manufacturing director did not introduce me to the workers in the shop floor during a visit, whereas his presentation of the labour process was rich in detail (see Vignette 1). Yet he was showing tolerance, even if with some difficulties, towards a worker who was reading a newspaper. I was also struck by how an employee addressed an older worker in a rude way because he was late for the interview (field notes of the interview with Mr D), giving me the impression that at least some employees take a hierarchical attitude towards workers from the shop floor.

9.3.2.1 Vignette 1 – Visit to offices, shop floor, and canteen

I interviewed the Manufacturing director, Mr M, in his office, which is in a kind of building at the centre of the shop floor. This building looks like a greenhouse and has the shape of a parallelepiped. Mr M's office is a room in this building. The entrance leads into an open space which I had to cross it to reach his office. I felt a bit like an intruder. That is because, I suppose, that that kind of environment is masculine. I reached that building after having already crossed a good deal of the shop floor and feeling quite embarrassed for the same reason. I could see only men and machinery.

The open space appeared bright: I could see many desks – perhaps eight or ten – but few people sitting working. The few that I noticed were young men. The atmosphere seemed juvenile and quite busy: sheets and files scattered on the desks and some blackboards with sketches on. I asked someone where Mr M's office was and it was indicated to me that it was just a bit ahead on the left. Mr M's office is not much different from the open space and the other rooms I had caught a glimpse of: the furniture is simple and linear, quite basic. It seems to me that there are no pictures or

posters on the walls. For the interview, we sat at opposite sides of the table; I asked him about the story of the enterprise, its organization, types of products, training.

After the interview we went for lunch in the canteen. This is in a building on one side of the large garden with car parking in front of the main building. It is a modern and low construction which is slightly hidden by the tall trees, providing an image of something separated from the rest of the area. Going to have lunch gives the feeling of leaving a workplace and entering an enjoyable place. Inside it is even better: very bright, large windows, colourful and modern furniture, good smell of food, everything new and proper, enough space for everything. There is also a stair to go upstairs where there are other tables in a space that appears as a sort of balcony over the canteen. The engineer who first had welcomed me to the enterprise, Mr S, had already shown me that upstairs there are a small (indeed very small) library and an art exposition. In fact, in that period, a Japanese artist was exhibiting his works there, as part of a larger programme promoted by the municipality to bring art into workplaces.

After lunch, Mr M took me around the shop floor. Before starting the visit, he recommended that I should walk only on the yellow corridor for safety reasons. Otherwise I should wear special shoes and a helmet to protect myself from accidental fall of the heavy parts they produce. I doubt they have shoes of my size. As I had already noticed when I was approaching his office before the interview, the shop floor appears much quieter than expected. The space is huge: very tall ceiling (maybe 15 metres), large – let's say - 40 metres and long maybe 70 metres. Two wide corridors divide three areas in which big tool machines are put in line, one after the other. These machines are big, but they accommodate well in that huge space so that they do not look so big. They are milling cutters and lathes. Each tool machine represents a sort of station for the parts production. I could see very few people around. This is quite striking when one imagines – as I did – that a shop floor is buzzing with workers busy doing things. The light is almost completely artificial, the floor is very clean, and everything appears to be in its place. The atmosphere was that of order and control. The Manufacturing director tried to explain to me what sort of processing occurs in each "station". I pretended to understand what he was saying, and, in fact, I tried hard to understand what kind of process parts undergo at each station. Each part does its journey from one station to the other accompanied by a folder with sheets indicating the

parameters to use in the different processing it has to undergo. When he was talking at a station where there was a worker, he did not introduce me to the worker neither did he nod to him in greeting. I was feeling embarrassed because this worker was not named, while parts and machines were named as well as the actions to transform the material. At a certain point, we passed by a worker who was standing in front of his work bench with the newspaper open on it and reading it. I made a comment like "It is nice to see that you allow workers to read newspapers." But he replied to my positive remark saying with a tone of disappointment and irritation:"Well, I disagree, but I tolerate it. They should always be alert when the tool machine is working.".

9.3.2.2 Helping younger colleagues

Work relations with younger colleagues seem often to offer opportunities of fulfilment to the older workers interviewed.

All of the older workers talk about supporting the younger colleagues in their working practices. Two of them use not only the verb 'teaching', but also the verb 'saying' (Mr B, par. 465; Mr A, par. 199). Probably they refer the verb 'teaching' to a traditional way of passing information and knowledge in a top-down relation between teacher and student. So they tend to avoid this verb and prefer to use other verbs such 'telling' or 'saying'. Yet this choice of verb reveals that they perceive workplace learning as occurring among equals, and this seems to be an important aspect related to the issue of preserving their own autonomy, as it emerges in what follows.

Mr A says that he does not like to give advice if not required. He points out that this is because he does not want other colleagues to interfere with his work: so he thinks that also his colleagues prefer first to try to solve the problem and then may look for help, if necessary (Mr A, par. 199-205). It is an engagement with the work and the colleagues which preserves the independence of the single worker.

They link 'teaching/saying' tricks to a feeling of satisfaction ("this is good" – Mr B says, par. 465), self-fulfilment (Mr B: "I have done something good", par. 438). They also regret that not everybody is willing to teach the colleague next to him (Mr B, par. 471-475). Mr B says that teaching tricks helps. He is sympathetic to some younger colleagues and feels sorry if someone is left to his own devices. This reveals the

importance given by Mr B to the good relations with the colleagues working in the closest proximity, because their help can make work easier.

Behind the choice of the word ‘saying’ instead of ‘teaching’ there also seems to be awareness that the trick suggested is just one way of doing things. Mr A points out that he may say how to do a certain job, but he always adds that that is how he does the job, but if colleagues find a better way to do it, that is welcome (Mr A, par. 205). Mr G expresses a similar point and stresses that also younger colleagues can have good ideas: the quality of the products can be the outcome of putting together ideas from everybody (Mr G, par. 440-444). Mr A claims that improvements are useful for two reasons: one is about making the process more efficient, the other is about preserving the worker’s health. He has been paying attention to his posture while working since he was young, with the idea that one should not have pain in the evening or have health problems later in life (Mr A, par. 99-101).

More than one worker raises the issue that not all colleagues want to share their knowledge. Mr B reports the case of a young colleague who was lucky: he used to work in another company and when he arrived in E2, he did not know the work. However he was able to find ‘the right people’ who ‘explain to him a number of things’ which ‘he learned’ and now he is one of the best young colleagues in E2 (Mr B par. 1021).

Mr D brings up the issue of young colleagues who are educated and deal with tasks which are carried out earlier in the labour process and affect workers’ work in the shop floor. He refers to the engineers who work in another department of the company (‘Tecnologie’) where they prepare the programs for the tool machines. Adopting a tone of voice as a way of showing regret, disappointment, but also pity for them, he says that they have a theoretical preparation, but “they do not know because they have never seen practically […] and therefore they do not know what it is possible to do (and what it is not possible to do) […] because if one knows how it is produced, then he can think “it is needed this and this and this” […] sometimes things go wrong because maybe they (the young engineers) do not ask”. (Mr D, par. 442-448).

Mr G notices that young workers arrive in the workplaces later, after school, and they are supposed to be able to work (Mr G, par. 160). This is different from what was his experience of entering the world of work in the early 1980s: he was asked to do things such as cleaning, keeping the workplace tidy and gradually learned from the older

workers and gain some experience. He adds that this was the typical way of starting working at that time. This hint of the necessity of historical contextualization of the way of entering the world of work is interesting to understand the relation between young and older workers and how this is mediated by the management who regulates the integration of the youth in the firm and creates the conditions for circulation of the practical knowledge held by the older ones. Here, I just want to point out how in E2 the activities of teaching and learning at work among workers have decreased in the last decades. This could have happened as an effect of the increased schooling of the younger workers, maybe viewed by the management as holding a superior type of knowledge compared to the practical knowledge held by the older workers.

9.4 Engagement with the object of activity

The previous sections already contain a number of data which represent good examples of the interviewed workers' engagement in the working practices in the company E2. This section is dedicated to this theme and reports in more detail those instances and others.

Engagement - at least on some occasions – is collective in E2, as it emerges in the interview with Mr B who tells what happened on the day of the interview. He was producing a part that had been modified by the engineering department. At a certain point of the labour process he realized that the modification could not work. That was a problem. He rang his line superior who came and decided to call colleagues in the engineering department who had introduced that modification. They came in five minutes, as Mr B pointed out with emphasis and contentedness. He participated in the identification of the solution, but what seems to give him satisfaction is that he was not left in an awkward situation (Mr B, par. 675). As I can interpret it, the part he is producing is part of a process, in which the design of the part by the engineering department is at the beginning of the production process. If something goes wrong in some phases of production it is good to be able to go back to the design phase and adjust it. In this episode the issue of the separation between conception and execution emerges. Mr B executes a task following the design of the engineers. Yet, as we have already seen, it is not a pure execution for Mr B participated in the identification of the solution. However Mr B insists on saying that he does not have competence in design, he can just call his line superior and hopes that the right solution will be found. He also points out

that this possibility of reporting problems in the labour process is not welcomed everywhere: there are workplaces in which it is better not to say anything. He feels very happy about the way in which he is working in the company E2.

Engagement is linked to the possibility of changing the way in which things can be done, that is, autonomy. Mr A explains that sometimes they are given designs and instructions on how to do the job, "but actually it is not possible to do that way." So they change the process without saying anything, because the important thing is to make parts with the parameters required. Mr A says that the process changes are not "radical" but minor (Mr A, par. 215-219).

The following excerpt shows the engagement of Mr G in his job when he says "you need to put of your own in it" and he links this to the fact that work is various:

"Yes. Yes, here you put of your own nearly in all parts, because (work) is very very, very various. Then parts are big, are also small, then parts which go to certain places, and in short go on certain machines, then of course you have to put of your own because you are not on the assembly line who say: "I put the part here, bon *[in dialect, all right] it goes off there I even do not know where "no, it is different"."*

(Mr G, par. 260)

The theme of the importance of knowing where the part is going to being installed – in what machine and with what function - emerges later in the interview, after Mr G remembers that he used to do service on the machines for which the parts produced by the company E2 are made. Mr G links the fact of knowing the destination of the part to the fact that one puts his/her own in it and it gives satisfaction to know where the part is going to be placed:

Mr G: "Because perhaps you work a part and the- then maybe suppose you also build the engine of a machine, you perhaps work that part, then, who knows: I work that, I know that it goes in that machine but I don't know what function has, I don't know where it is placed, what it serves for, I don't know what, in the end it does not give you satisfaction. On the contrary, you work that part, then: you have the possibility you go to place it on that machine, you see what matches together in that machine, you see what it serves for, serv- a lot of things. In the end you see it working and say: "Ah, then, you have seen where those parts end up, what they serve for" all, all these things no? also because you are given a technical design, the procedures everything to work that part and then from there … putting of your own you build it. And you know that then it goes off there, you know what it serves for, and in the end you know what – also because there are different machines, one different from the other - then it serves"

I: "Hum"

Mr G "no, it is creative on this, actually there are not many firms that you succeed to become perfectly skilled."

(Mr G, par. 290-294)

But it is also important working with a "beautiful and effective group" of colleagues (Mr G, par. 404). The group in which Mr G is working now is new and he has helped to

train new workers who have joined the group recently. It seems that he could play some role in making the group working (see section 9.3.2.2). He says that when one gets on well with the group, and with the company, the work gives you enough satisfaction, one is happy and can leave home in the morning without having to say "oof I have to go there" (Mr G, par. 472). From what Mr G says, I understand that the ideal group for him is the one in which there is the capacity for listening to each other's ideas, and it is not important who gets the right idea about what to do about a certain work issue, but to work together "to achieve the quality of the product". It seems that he does not like it when one person wants to impose his way of doing something. He says that one does not go far with that type of attitude (Mr G, par. 444-448). The fact that he is happy about this "new" group of colleagues means that this group is close to his ideal of group. Mr G looks as if he is very engaged in activities of problem solving and aware of the possibility of integrating his changes in the design of the process:

"Yes, of course, […] on the shop floor that there is to make that part there, it is necessary to collaborate between us and them (the department "Tecnologie") to arrive to have in short a good AND product of quality. Otherwise if nooot in the end one does not not solve anything, in other words it can turn it out yes but it is necessary to be always in contact, especially when there is to do something new to create it from scratch, to create a new process and in the end one can make it the work has been done it has come out well and one goes on in that way there and one always improves while goes on even if one introduces changes these have to be taken to them and everything and they enter them both in the cycle and on the technical design everything."

(Mr G, par. 624)

His engagement is linked to practices of collaboration with the department "Technologies" which deals with the development of the welding process from the point of view of preparing the technical designs and describing the operations of production.

Being engaged involves feelings and emotions: Mr G refers to a feeling of satisfaction.

Mr A says that sometimes it seems that it is the first time you do the job, despite the fact you have been doing it for long time. In trying to explain why, he refers that it could be something subjective, "related to my person" (Mr A, par. 267). As I interpret what he was trying to express, because he introduced this while we were talking on how variable work can be, he wants to say that sometimes the job seems new because he likes the perfection. He adds that he likes his job. He also says that he likes his job because he has to spend all day there, so the day would pass very slowly if he resisted the job: better to do it and do it well, so that the day passes without noticing. However it happens that he gets angry because the job does not develop as he would wish: maybe

this is because he is meticulous. At the same time – he says - one has to be meticulous because then the part passes to the next phase of manufacturing, and if his job is not well done, it affects the job of his colleagues. So he feels happy only when he obtains the outcome he wants. He quickly mentions, while giggling, that he also does not like to be told off (Mr A, par. 267-269) (see also section 9.2.2).

One of the most important motives which orient Mr C's choices is being a breadwinner for his family (par. 211; par. 416; par. 463). Yet this motive does not stop him becoming engaged with his job. This is illustrated by his affection for "his machine" (Mr C, par. 940-952) and by his desire to leave something in E2 when he retires (Mr C, par. 465, reported in section 9.3.1.1). He also shows engagement when he talks about the necessity of paying attention to the variability of conditions of the manufacturing process (Mr C, par. 1271-1324). Yet this worker is not fully happy about the possibility of engagement in the company E2. He misses the spirit of dialogue and bright confrontation he used to experience in the previous company he was working with, where solutions were found in meetings in which various ideas could be openly discussed. In E2, the old atmosphere of fear of change is still in the air (Mr C, par. 642-728).

From these interviews it emerges that there is a high engagement of the interviewed older workers in their tasks, engagement which seems tightly connected to their personal passion for mechanics and achievement of good quality in the outcome of their jobs, and, at the same time to have good collaboration with colleagues on the shop floor or other departments. In the cases analysed, the personal senses of what working for the type of activity run in the company E2 means (and requires) looks to be shaped over the years of working in that company. Indeed, in the case of experience in other more innovative companies, such as in the case of Mr C, who was involved there as an employee and as an organizer, personal senses appear to be less in line with the general ways of intending how to work in E2. In another case (Mr A), personal sense finds a way out in the working practices by making little changes without the possibility of openly acknowledging these.

Because the aim of this research is to explore how this engagement in working practices is linked to motives for vocational learning, I now turn to how learning engagement appears in the case of these older workers employed in a company whose industrial

production approximates the model of flexible specialization. So far, the features of this strategy of production have emerged in the narratives of the older workers about the complexity of their jobs which requires autonomy and problem solving skills. These jobs bring to mind a sort of craft activity, in that parts take their form under workers' manufacturing operations. The same process of manufacturing is affected by many aspects of variability coming from the different materials and the introduction of changes to improve the performance and quality of the parts.

These aspects of the strategy of production emerge again in the type of learning engagement analysed in the next section. Themes already met in the previous sections, such as subjective aspects, past experiences, autonomy, will surface again, showing how all these dimensions are intertwined.

9.5 Learning: copying with variability, enhancing processes, changing mediating tools

When I ask Mr G whether he has attended training courses in the last years, he finds it difficult to remember:

Mr G: "yes, it seems to me yes. Yes, yes three, four years ago … Hum … well, maybe well, well, about the safety, about these small things all these things there. Buuut courseees"

I: "what about courses really over weldiiing or something like this?"

Mr G: "Non. Those are courses which you do somehow either at the beginning or to someone who hasss, in short … // (?) it depends on things which will be necessary to do because people even of a certain AGE have gone to attend courses and, in other words it is not that you don't do courses eh!"

(Mr G, par. 859-863)

However it appears in this excerpt that Mr G thinks of formal training as occurring at the beginning of a career and then when some needs of learning emerge in the workplace. He stresses that older workers participate in formal training and age is not relevant. He says it to disagree with my – supposed - hint that maybe the firm does not invest in vocational training for older workers.

Mr A is a welder, but when the company E2 had a downturn affecting, in particular, the welding department, he was asked to train as a milling machine operator. His first reaction was to say that he was a welder and he did not know that job. But he was told that he would work at a machine beside another machine where a more experienced colleague was working. From his account, I understand that at the beginning he felt nervous, but gradually he learned how to make different types of parts. After one year

he started to feel easy with that job. But as soon as he started to calm down and get used to that job, he was moved back to his previous job (Mr A, par. 169-177).

This experience led him to compare the two types of jobs and question which one was better. He concluded that even if the work at the milling cutter looks less demanding (while the machine is working, the operator can relax), he considers himself to be a welder. He has a long experience now, which allows him to work with plenty of autonomy. He knows the tricks to make his work easier (Mr A, par. 177-191). He is willing to teach his tricks to younger colleagues, but he wants them to come and ask him for help. He thinks that as he does not want colleagues interfering with his own job, he does not like to interfere with the one of his colleagues (as already reported in section 9.3.2.2).

In this instance of learning at work we can see that learning at work is linked to practical needs and conjuncture (demand downturn). 'Apprenticeship' can occur even for a worker who is already part of the workforce of the enterprise and has already mastered a job. In the case of Mr A, mastering a new job occurred through learning by doing, with the support of a more experienced colleague. Learning a new job implied a long period of dependence and uncertainty about how to do things and the outcome of his efforts. Yet he did and he was successful: in the end he was able to work with a certain degree of self-confidence.

Also in Mr B's experience learning is learning the tricks of the trade. There are many tricks to learn because manufacturing operations can have different impacts depending on the size of the parts and materials (Mr B, par. 438-449). These are things that school does not teach, but only older colleagues and experience accumulated in different work environments can help develop (Mr B, par. 374). He was taught by an older colleague and now he is passing on these tricks to other colleagues. Colleagues are happy about receiving these hints: "that means I have done something good" (Mr B, par. 438).

Whereas often Mr A and Mr B talk about learning as learning tricks, Mr G indirectly suggests that learning is 'making experience'. He links this to 'skilling', to mastering a profession and to employability. He compares enterprises on the basis of this criterion and says that the company E2 is different from other workplaces because "the experience that you gain here is not like the one that you make - don't know - to Auto,

to Iveco[101]" (Mr G, par. 22). Mr G says that the difference is about the assembly line. In Fiat Auto and in Iveco the production is mostly organized by assembly lines. He also thinks that in E2 you can gain more experience than in the enterprise in which he used to work before moving to E2. That company used to produce the same product that now is produced by E2. Indeed, E2 and that company were members of the same industrial group until some years ago. So it is interesting to notice that, despite the same production, Mr G thinks that he is more able to develop his profession as welder in E2 than in the company where he used to work:

I:"Could you explain me better ... at the same time what you used to do there and then what it means 'in a different way'."

Mr G: "It is not really in a different way, practically the professionalism which you make there is excellent, the one you make here is excellent and also a bit more manual, here you succeed in putting a bit more of inventive, you succeed in putting of your own in, theeen thus you grooow gradually up."

(Mr G, par. 75)

The difference between the two companies is that in E2 the job is more manual and allows more room for being inventive: it implies – as I interpret - a personal added value to the product and this allows making experience and skills development.

Some older workers say that it is important to work with the 'right people' in order to develop skills. Mr B mentions how it is important to work with the 'right' colleagues from whom one can learn a number of things. He refers to a young colleague who was lucky enough to be taught by the "right people", meaning the most expert colleagues (Mr B, par. 1008-1021). Also Mr G thinks that it is important with whom one has the opportunity of working: if one works with the right people, one can learn, even when the worker is in his fifties or sixties (Mr G, par. 392).

Sometimes learning occurs when new machine tools are introduced. Mr B received training when computer aided machines were introduced in the 1990s (Mr B, par. 952-964). It was the training provided by the supplier. He now passes that knowledge to his younger colleagues.

The training provided by suppliers is also discussed in the interviews with Mr A and Mr D. When Mr A tells me that there are only four years left before his retirement, I ask him whether he would feel himself as wrong footed if a more up-to-date welder were introduced now. In my question, I refer to what he has said earlier in the interview about

[101] Names of other companies in the automotive industry.

the fact that the company E2 has not invested in substituting the welders they use with the new generation of welders that he supposes may exist and may be more precise than those in use. Mr A answers my question saying that the technician from the supplier would illustrate to him how the welder works:

"well, m, sure it should come a technician to show me … how it works because I would not be able to, perhaps, there could be some switches which I don't know, the functions of that switch, however I don't think that, as welders haaave the functions of a welder is that, then now perhaps they are digital instead of being as those ours, which still are with the handle, with potentiometer, however I think that a welder is a welder, so in other words there will be always something of, ooof, of different, of-ooof, of new, howeveeer the welder I think there not, not beee the, it would be enough that someone came to me to say:"Look that this serves, this serves, serves for this" the welder is that, is not, is not a machine to say that makes movements, is a, that is, it serves only to weld, to make melting the material so, I think it be like this, now, as I repeat, the- those up-to-date I have not seen them yet, I think that it is like this.".

(Mr A par. 452)

Mr A does not appear to be challenged by the possibility of having to learn how to use an electronically controlled welder (called by the worker 'digital welder'). Learning would be linked to the need to know just how the new tool works. The goal of his job would not change; it would still be to make the material melt only the mediating tool would change.

Even if in some excerpts Mr B seems to appreciate the learning in the workplace and be critical towards learning at school (Mr B, par. 1004), in others he remembers as particularly important his attendance on some vocational courses when he was a young worker. Indeed, despite the discouragement received from the older workers, he attended all the courses he was offered, moved by his deep interest in mechanics. Thus he has developed a wide knowledge about applied mechanics and he now has a profession:

Mr B: "When you are young you feel like learning, you really feel like learning, I remember that I attended all the courses they made me attend, they used to ask, the older colleagues used not to want: "Oh, are you going to attend those courses what's the use?" they have been useful, somehow they are useful, a little, because then one leeearns to change tool machine, to change, whether- of course they are useful- they are useful- useful I attended all of them, all I could which they made me attend I attended them, I have never held back and I can say that they have been useful, the theory put together with the experience, with the practice, is useful"

I: "Mhm"

Mr B: "I have never had difficulty to move from the lathe to the milling cutter, to- to to grinding, even if they are three different jobs, because I have done all of them and then I have had less difficulty than another person, in other words, then I like it, perhaps when one has- when one likes what he doeees"

(Mr B, par. 1090)

There are still things to learn because there are always colleagues better than you. However, Mr B thinks that he has learned everything that one can learn (Mr B, par. 1000).

I now discuss the findings of the analysis of the older workers' interviews presented in this chapter comparing these briefly to those discussed in Chapter Eight referring to the company E1. A more extensive comparison is proposed in Chapter Ten.

9.6 Concluding remarks

Compared to the enterprise E1, the older workers interviewed in the company E2 perform complex tasks which can go on up to two or three days. On the contrary, the operations carried out by the older workers in the company E1 - working on the assembly line - last few seconds.

The analysis of the interviews highlights that this type of task, the complex ones compared to the most fragmented ones on the assembly line, lead to a completely different work engagement and relation to learning. Learning appears here as an intrinsic aspect of working practices. Moreover, learning is a double collective movement: 1) older workers have learned a lot across their working life - and they are still learning from their own work and the one of their colleagues; 2) they are passing their knowledge to their younger colleagues, but receiving input from them too. What they pass on is not considered as an immutable knowledge necessarily: younger colleagues are supposed to improve the working practices where possible[102].

However, the aim of this research is to interpret how learning is prompted. The theoretical framework states that learning is aroused by the engagement in the activity. Engagement is relevant in this research for this is the presupposition to allow needs and motives for learning to emerge[103]. As I have argued theoretically in section 5.5, the association between collective motives and personal sense of those motives leads to engagement. As discussed in sections 5.5 and 5.6, this correspondence can be felt in the carrying out actions when thinking and doing are jointed.

[102] I acknowledge that this bi-directional exchange among older and younger workers also occurs in production organized on assembly lines. Yet in the case of productions organized in central tool rooms – as it is the company E2 – the exchange is much richer due to the complexity of the tasks performed by the workers.

[103] Engagement is defined in section 3.5 and engagement in workplaces is discussed in section 5.5.

In the case of the company E1, organized around the object of mass production of goods, the engagement emerges as the outcome of the workers' reflections comparing previous experiences of work with the current one on the assembly line. These reflections construct their personal senses about the motive of the activity of E1 leading to an engagement which I refer to as an engagement with frustration (or negative engagement). However there is engagement and hence also learning activities, namely auto-organized ones, as discussed in Chapter Eight.

In the case of the company E2, discussed in the present chapter, an engagement, which I call positive engagement, emerges and brings about a continuous learning activity. In this case learning appears as an aspect of the working practices. Therefore, compared to the case study on E1, I concentrate more on the tasks these older workers have to complete as a way to highlight the importance of these in explaining the engagement and discuss the learning aspect of their working actions.

In these conclusive remarks I discuss: 1) the relation between complex tasks and perception of the motive of the activity of the company E2; 2) the personal senses of this motive; 3) the role of collective relations; 4) the role of work organization.

Complex tasks and the object/motive of the activity

Complex tasks require constant attention to the outcome of the actions and operations that workers put through the parts on which they work. These actions and operations are part of the processes of welding, milling or turning. This constant attention involves mental activities intertwined with practical operations. All the older workers interviewed show an evident engagement when they describe their jobs. They give accurate descriptions and while they are talking about the challenging tasks they have to undertake, their speech becomes assertive, more confident, its rhythm quicker, the timbre higher. As Mr G says "you put of your own nearly in all parts, because (work) is very very, very various." (see section 9.4). Because the company E2 operates in the field service of complex machineries which have been produced at different times and by different companies, the workers' tasks are continuously changing in minute detail, presenting variability of material and design.

Translating this into the technical language of my CHAT influenced perspective, these older workers appear to be sharing the object and motive of the activity of the company

E2, which is producing parts for complex machineries according to high quality standards. The fact that these workers have to think and change their working actions to adapt to the conditions (material, design) implies that conception and execution are re-joined and with them the possibility of perceiving the object and motive of the whole activity of which their actions are part.

Personal sense of the motive of working and learning

The conditions to perceive the object and motive of the activity are not enough to engage with it. As discussed in sections 3.4 and 5.5, the motive arousing the collective activity has to have a social meaning and this has to find a correspondence in the personal sense of that motive.

The analysis presented in this chapter shows how the workers' passions and interest surface in carrying out their tasks. Some of these workers demonstrate a true interest in mechanics. Mr B has been eager to attend all the mechanics courses he was offered, despite the criticism he received by his colleagues. Mr G likes to be creative, solve problems, thus making experience and growing as a professional. In his spare time he has a hobby which seems to reproduce the same type of challenging work he does at E2.

I interpret this aspect of interest and passion for the mechanics subject and work as the personal sense the workers give to the motive of the activity of the company E2. These personal senses are in positive relation with the meaning of the collective motive for producing those parts. I refer to this engagement as positive engagement.

My analysis also shows that the development of these interests and passions for mechanical work could have developed in the course of the vocational experience, and not necessarily before starting working.

The experience gained day by day has been increasing workers' self-confidence, empowerment, and satisfaction, even when the work conditions are just half as good as those considered ideal (Mr C). These workers receive support when they need to solve a problem in the process of their work and this allows them to have good experiences at work. For them, that means being able to enhance the process, to complete their tasks, to deliver the expected piece of work to their colleagues and to be satisfied about it. In sum, the type of work carried out in the company E2 makes the workers' experience rich from the vocational point of view, lead to their professional development, which

some of them consider as a criterion to select where to work. What they want is to be recognised as good workers and be supported to enhance their working practices, so that they can achieve, with satisfaction, the objective they were given.

The personal sense of working and collaborating in the company E2 can receive positive and negative inputs every day in the working practice. The sense of satisfaction that Mr. B shows in his telling about the readiness of the engineering department to respond to his request of support is illuminating. It confirmed to him that he is working in a company committed to doing good job. Since he is keen on mechanics, this has a re-enforcement effect on his engagement with his job.

The interviews disclose the importance and the weight of the accumulated experience, which can become a burden when older workers retire. As Mr. C quite brutally put it, that experience could be thrown away in the bin, unless one passes it to the colleagues so that something of oneself remains there and the activity can also go on. The emphasis on passing on the knowledge to other colleagues, which emerges in nearly all the interviews, can be interpreted as another aspect of the personal sense given to these workers to their work in the company E2. This personal sense of sharing the knowledge can be one that develops later in their career when the worker is approaching retirement. In this case he/she needs to make sense of the day-to-day work when the perspective of leaving the workplace is approaching. This highlights that the engagement not only requires personal senses *a priori*, but also can involve the development of new personal senses of the motive of the activity.

Personal senses not only develop through life, but also in relation to other workers' activities. In many older workers' interviews (Mr A, Mr C and Mr G) guaranteeing the wellbeing of their family emerges as reinforcing their engagement at work. Mr A's personal sense of being a skilled welder appears to be connected to the fact of having (and wanting) a family and aiming to be a responsible person. As in the cases of Mr C and Mr G, I think that Mr A's sense of doing his job well is linked to his motive of having a good life too, and his family plays an important role in this. His work is an instrument to achieve his fulfilment in contributing to the wellbeing of his family, not only his pride of being a skilled welder and able to collaborate with his co-workers and superiors.

The role of collective relations and work organization

The discussion of the analysis has already touched on, more than once, the importance of the collective dimension in the production of parts and in the engagement with this. The analysis of the interviews shows the relevance of the collaborative relations with the peer colleagues, colleagues from other departments and superiors. The possibility of reporting problems in the company E2 and getting good answers and solutions enhances the workers' feelings of satisfaction and confirms for them that the whole organization of production focuses on the object of the enterprise, which is providing quality of goods and service.

Despite their relations with superiors, sometimes still marked by use of power in the hierarchical relations, older workers are learning and developing new working practices. In my interpretation, this shows that the object of the activity is more relevant than the type of relations with the superiors. Even if workplace organization is not designed to enhance participation and feedback from the workers, and professional relations are not marked by full collaboration, the older workers interviewed have motives to learn because of their engagement with their jobs and the activity of the company E2.

I now move on to discuss what indirectly emerges in the interviews. So far, all interviewed older workers look as positively engaged with their tasks. Yet we cannot draw from this that the whole workforce is engaged with its work in the company E2. Indeed, some older workers mention that some colleagues do not like sharing the tricks with other colleagues as well as the fact that some other colleagues appear to them as not willing to learn how to enhance their working practices.

As I write in section 7.5, the selection of the older workers in company E2 has been drawn by the management, which presumably has chosen the most motivated workers. So it could be that there are workers in E2 who might not be as engaged as the ones I have interviewed. Actually, an episode occurred once I was invited for a varnishing-day - of an artwork created for and installed in the plant of E2 – which seems to confirm that. On that occasion - to which the whole workforce was invited - I could visualised a group of workers, some of them old, trying to distance themselves from the rest of the group, mumbling during the official speeches, clearly wanting to show their disapproval.

I interpret that as a conflictual relation with the management. This means that it is likely that some workers are not as collaborative as the workers interviewed.

The possibility that not all workers are positively engaged with their jobs in the company E2 indicates that further research is needed to investigate the different types of relations workers develop with the object of the activity in which are involved. In this research, it has been possible to detect and analyse two types of engagement, negative and positive, both leading to learning activity. In the next chapter I complete the comparison between the two case studies, draw the conclusions from this study and indicate the possible future development of this research.

10 A new perspective on older workers' vocational learning: taking into account objects and personal senses

10.1 My contribution and outcome

The research questions which guided my study were about exploring the relationships between the type of work in which older workers are involved and their engagement with this, and how subjectivities have a role in this. The aim was to look at how vocational learning can develop from that relationship.

I was able to answer to my research questions by adopting the CHAT perspective and developing the concept of strategy of production. This latter represents my way of translating the CHAT concept of object of material and collective activities in the case of the industrial production. As object is central in the theory of human development in CHAT, thus strategy of production is pivotal in my study on vocational learning in the case of older workers. This has offered to me a way to look at the relationship between working, subjectivity and learning, using the concept of object as the unifying element of this system of relationships.

Since this is the first study from a social practice based perspective on vocational learning of older workers, the focus on this group of workers has required the elaboration of a conceptualization of how to look at becoming an old person from a CHAT influenced perspective and its relationship to vocational learning.

On the basis of this framework, the most distinctive contributions I have made in my thesis are i) the development of the concept of subjectivity beyond the way in which it is discussed in CHAT and ii) its use in the field of vocational learning to analyse the way in which older workers get engaged in learning in the industrial activities.

10.1.1 Subjectivity: extention of the CHAT concept and empirical investigation

I have extended the Stetsenko's conceptualization of subjectivity by linking subjectivity to strategy of production, seen as the object of industrial activity with which the older workers are in relation through their working practices. This has allowed me to keep the material and collective activity as central in the analysis while I was investigating the subjective side of working and learning. I have provided an empirical exploration of subjectivity by setting up a comparative method to study it with respect to older workers'

vocational learning. The differences in the personal ways of attending to their jobs, tasks, and vocational learning among the older workers in case studies E1 and E2 are sharp, and are clearly in relationship with the challenges that the two examined strategies of production are facing, as they emerge in the tasks the older workers have to perform. This comparative study on subjecitivity organized around the concept of object of activity also puts forward the idea that it is important to take into account of contexts in a more differentiated way than otherwise in CHAT has been done. In my thesis contexts are not as backcloth to individual and collective material acting. Indeed through the concept of strategy of production I have highlighted and stressed the differences between contexts and given to contexts an active part in forming the personal ways of working and learning. My empirical work has shown as the strategy of production and its contradictions emerge in the working practices and relations. It is in making sense about what happens in these collective and material practices and relations that the personal (subjective) ways of doing surface and reveal the personal senses for learning.

Other CHAT works have developed the concept of relational agency to take into account subjective aspects in interprofessional working practices (Edwards 2005; Edwards 2010; Edwards 2011). Relational agency has been defined by Edwards as the capacity that emerges in joint purposeful actions (2010, 64). This author sees relational agency as referring to the process of externalization (2010, 67) since she intends to highlight the transforming capacity of the practitioners working together. I have not adopted this concept for two reasons mainly.

The first reflection has been that the adoption of the term ‘agency’ seems problematic in a work as mine, close to the sociological field, where the concept of agency is attached to the debate on the relationship between structure and agency put forward by the work of Parsons (Loyal and Barnes 2001). I appreciate the attempt to develop the concept of relational agency in a CHAT perspective. This certainly distances this concept from the Cartesian/Kantian modernist vision about the world, mentioned in section 3.2, with its belief in the freedom of the actor as a capacity vested within the subject and independent from the context (Derry 2004).

The second argument is that my purpose was to explore the subjectivity. In my view, subjectivity gives shape to the transformative capacity of the persons, without being

restricted to this. The subjective moment is on the internalized pole of the activity (section 3.3.5) and therefore is more comprehensive than the relational agency. This has allowed me to take into account in my study those cases in which the personal motives are not completely aligned with the collective ones, because the images of the object are different. I will come back to this point in the next sub-section.

10.1.2 Vocational learning subjectively shaped by strategies of production

My empirical work shows that the two strategies of production examined generate differentiated personal relations to working and learning, because the older workers make sense of them according to what they perceive of those strategies in their working practices, in the relations with the colleagues, the superiors, the other departments of the enterprises. They judge the work organization, the labour process and make sense of the contradictions and frictions they meet. This occurs as mediated by their previous and parallel (e.g., in their family) experiences of work. Their personal senses of the motive for vocational learning are related to the making sense of their working practices. The motive for learning is the motive for what they want/need to do in their workplace, which is related to their engagement. Since the two strategies of production are very different, I have found that the engagement at work can result in being full of frustration or positive and rich of pride for their work. In both cases the older workers interviewed appear as stakeholders of the enterprises, in one case feeling as impotent in front of the contradictions met in their work, in the other case feeling that their job is part of a common enterprise which is collectively moving toward the final objective of producing the right part for the service field.

However what the older workers perceive about the strategy of production in the working practices and relations is an image of the strategy of production, and it is to this image that they relate in their processes of sense making of working and learning.

The issue of different images of the object of an activity recalls the discussion I have reported in section 3.4.2 about the relationship between motives and object. CHAT scholars notice the multiplicity of the object and question whether we should consider that an object has more than one motive, and conceptualize the object as emerging from different motives. The studies carried out by these scholars involve top figures or researchers in the business activities analysed. It is understandable that the definition of the object is influenced by the personal sense of motives of that type of personnel. In

my case I attend to the relationship between the workers in the shop floor and the object. Since the design of work in the analysed enterprises positions the workers outside the possibility to influence the object of the activity, their personal senses of motives cannot influence the forming of the object. However they produce images of the object, yet limited by working in accordance with the conditions shaped by other colleagues' (managers') decisions. So they elaborate the image of the object through what they experience in their tasks, mediated by knowledge and practices also developed through other activities. This has implication for the engagement of the workers and influence the type of learning needs felt in the working practices, for the older workers have a restricted view on the object of the activity.

10.1.3 The issue of the gender/sexuality of the strategies of production

The last contribution of my study is about the gender/sexual (see note 106) issue, discussed below in section 10.5. As I have argued, my CHAT influenced perspective has led me to notice in the empirical work the differences in the sense making of working and learning between the female and male older workers, as related to the activities carried outside their workplaces, in their families and spare time. From my study it emerges the relevance of these activities in mediating the sense making of the female older workers in particular. This initial exploration is unique among the CHAT studies on workplace learning, which have not highlighted the gender or sexual issue (Edwards 2010; Guile 2012; Sawchuk 2012). The CHAT focuses on object-oriented activity and my emphasis on the image of the object mediated by knowledge and practices elaborated through other activities, have the potential to anchor the gender/sexual issue exploration to the cultural-historical activities carried out by people, mediated by their different bodies and experiences about the world. This is very different from the standard approach of referring to categories as men and women only, leaving other categories unquestioned, as the category of work organization and labour process and the relationship of these ones with vocational learning. Now, further thought has to be developed to integrate my CHAT influenced perspective and the feminist stance to study the subjectivity in vocational learning. This should serve the goal of taking into account of the fact that female and male older workers are responsible for different activities in their lives, even if under an ongoing

sexual/gendered transformations (Halberstam 2012), and this mediates their engagement in other activities as working in the shop floor in industrial enterprises.

To conclude this summary of the main contributions provided by my thesis, I claim that this latter is very different from other studies in the field of workplace learning which adopt the concept of disposition, too narrow to include the personal relationship which the current job or profession and to notice that the way in which workers relate to their tasks develop through the experiences they make and the personal senses they elaborate about these. My study is also different from those from the situated perspective which focus on the settings of work as pivotal for the chances for learning. The two case studies show how the strategies of production, and related work organization and labour process, offer the meanings and senses to feel engaged or resistant to get involved in the activity, and not only conditions and opportunities for learning. This means that the relationship between workplace and learning are less direct than what emerges in other studies, so that even when the first has features not favourable to vocational learning, workers can get involved and engaged in vocational learning as well, despite the negative conditions of work.

I now report in more details the comparison between the findings from my two case studies and then discuss the age and gender/sexual issues which have surfaced in my analysis under a new light compared to the standard approaches.

10.2 Strategies of production and older workers' engagement

These two case studies show that the older workers interviewed present relations present to their work tasks as intrinsically linked to the features of the labour process and work organization, associated with each of the two above mentioned strategies of production, mass production and flexible specialization. Although these relations appear to be shaped by the materiality of the production and its related organization, they have partially different outcomes for the single older workers, for subjectivities intervene to give different personal sense to the apparently same situations and hence different personal sense of the engagement. First I report on the common characteristics of the engagement of the older workers working in the same firm which highlight the differences between the two case studies, whereas in the sub-section 10.3 I refer to the subjective differences in the engagement among the older workers in the same firm.

However these subjective differences are appearing as circumscribed by the characteristics of the materiality of the production and its related organization and the possibilities of making sense of these.

The older workers in the mass production firm E1 are engaged in their tasks, despite the fragmentation of their tasks due to the work process based on the assembly line. This occurs because they can exercise their engagement with other aspects of the labour process and work organization such as the relations with the superiors, the other departments (i.e. quality or maintenance departments), and the trade unions. However professional interrelations are marked by the type of production. I have named their engagement as a frustrated engagement, because it is made of complaints about how the labour process is organized, the relations with the management and the preoccupation with producing low quality parts (see Chapter Eight). This critical stance appears as related to previous work experiences in which the older workers have internalized motives for producing quality and working in certain ways, unlike what they are finding in E1.

Their engagement is different from that of the older workers in the firm E2 which approaches the ideal type of flexible specialization. In this case, the nature of the labour process seems engaging per se, because it requires professional competence such as the one of welder, turner, milling machine operator. These skills require a more complex awareness than that needed on the assembly line. The workers are continuously engaged to obtain the expected outcome of their work, because the labour process has to be adapted to the variability of conditions of work (i.e. material or design). This emerges in the interviews as associated with their professional interests and identity which have been developing and forming all along their life through the involvement in professional working practices. They are aware of their rich professional experience and, now, at the end of their career, they want to make sense of that passing their acquired knowledge to their colleagues. These workers show a positive engagement.

These two types of engagement, frustrated (negative) in E1 and professional identity-related (positive) in E2, appear as different because of their relation with the object of the industrial activity. The strategy of the flexible specialization, with its characteristic centrality of the machine tools, enables an immediate engagement with the job, requiring the mediation of the practical and theoretical knowledge of the workers,

knowledge which has acquired a personal sense for the workers (the passion for mechanics) and provides professional identity ("I am a welder"). Whereas in the case of E1 few skills are needed: this implies less challenge, interests and passion for the tasks that older workers perform, therefore less relevance for them about what they do and less personal sense attached to their jobs. The older workers interviewed create their own narrative to find a personal sense and become engaged. They obtain this by imagining how things should be done in E1. This might correspond to an idealized image of strategy of mass production supported by what they had come to know in previous workplaces or other social contexts.

In Chapter Eight I discuss how previous working experiences can be used by workers as a comparative term to image how the workplace organization in which they are currently working could work differently. In the CHAT perspective, these workers have internalized a motive and personal sense for a similar industrial production organized in a more innovative and collaborative working environment. Accordingly, they are acting having a tension towards transforming the current workplace and they are willing to learn for this purpose. In other words, for the older workers interviewed, the poor organization of work and labour process, compared to their imagining of how these should be organized instead, become a stimulus for them to attempt to transform the activity in which they are working.

This research shows that the work organization is at the centre of workers' complaints, especially in company E1, but this discontent prompts actions to improve it and does not negatively affect the motivational aspect of vocational learning, on the contrary, it could give rise to motives for the latter.

Indeed, they would like to be more involved in the process of enhancing the labour process and the work climate. In the research it emerges that the transforming practices of the older workers who were interviewed are limited by their positions in the organization and by the strategic view of the management. This research does not investigate this, but clearly, with respect to the older workers more engaged in the transformation of the activity, the strategic view of the whole management, and not only that of the Human Resources, emerges as crucial to the issue of workers' development.

I now turn to the variability of the work and learning engagement among the older workers interviewed in the same firm.

10.3 Subjectivities as making sense of the activities and learning

As I highlight in section 10.2, the two case studies present a pattern of personal senses about the two distinct activities homogeneous within the two groups of older workers. Nevertheless, since the mix of experiences can grow across life (see section 4.4), differentiation among older workers occurs to a certain extent within a similar context of activities and mediational artefacts. This is what surfaces, especially within the enterprise E1, approximating the mass production strategy, while in the case of the enterprise E2 the subjective differences among the older workers are much fewer. I offer an interpretation of this in what follows, dealing with the most significant cases among the older workers interviewed, those which can be paradigmatic examples of subjective differences in the same work situation.

The analysis of the data discussed in Chapters Eight and Nine shows that older workers have a long experience of working activities and other activities. Yet for the older workers in company E1 – characterized by mass production - the working experiences are discontinuous and with some retrocession, a pattern which reflects the difficulties of this type of strategy in western developed countries. These workers are still waiting to achieve what they expect in their working lives. For some of them, their past working experiences are interpreted as being better than the current ones, and for others the progress is slow or with some improvements and some worsening. None of them mention retirement, all of them would like to see some significant improvements in their working lives in the company E1. For this sense of expectation and hope these older workers are willing to learn what they think would support their professional development and the development of the activity.

With reference to vocational learning, the differences among older workers in E1 emerge in their working experiences and the personal sense they make of what they have done and are doing in their working lives.

Ms B has worked in various workplaces and those previous work experiences have had an important influence on her subjective ways of considering working in E1. According to her account, she has internalized motives such as aiming at improving quality and organization of work. Ms B has decided to fight to improve E1's conditions of work by becoming trade union delegate, motivated by what she had learned in the past work

experiences and by the comparison between the previous workplaces and the current one.

Ms A has good memories of the first twenty years of her occupational life in E1 where she might have internalized the interest in producing quality. This personal sense for the motive of quality makes her positive about her tasks, aiming at quality, despite the present contradictions in E1 about the importance of this. Ms A seems moved by a different personal sense of this motive from that of Ms B. She is interested in the whole activity of E1, as is Ms B, but with a more managerial slant. She might have internalized this interest in other contexts and activities[104].

Hence, both Ms A and Ms B seem moved by the motive of improving the organization of the production in E1 to achieve quality in the production, but Ms A from the stance of a person who wants to make a career and fulfil her individual desire of entrepreneurship, while Ms B has chosen to act as trade union delegate, hence with a more collective slant. These different personal senses of management of work and its organization observed in Ms A and Ms B orient Ms A to self-organizing learning opportunities, whereas in the case of Ms B I note a trade-unionist concern about vocational learning in E1.

In sum, in the cases of Ms A and Ms B we can see how the same motive can be interpreted in personalized ways, that is, as pointed out by Leontiev (section 3.4), motives hold personal senses. At the same time, we can see how the subjectivities of these two older workers, grounded in the participation in transformative collective material activities (section 3.5), can differentiate the personal relations with the objects of the activities.

However, despite the differences in the personal senses of the motives which orient the older workers interviewed in E1, these are circumscribed by the characteristics of the strategy of production based on mass production. Motives are about the management of the production and its quality, and much less about the interest in a profession with its related fund of skills and knowledge, and the development of a professional identity. Conversely, the latter is characteristic of what I have found in the analysis of the

[104] More recently I have learned that Ms A's family owns some flats in Turin and that she has tried to develop a business with her husband. So it is possible that she has grown up attending activities moved by managerial motives, thus internalizing motives related to running businesses. As reported in Chapter Eight, she is an operator in charge of an assembly line.

interviews of the older workers in the enterprise E2, approximating to the strategy of production of flexible specialization. These elements – the professional knowledge and identity – mark all the workers in this enterprise, rendering the differences among them less prominent. All of them appear as passionate about the very professional content of their jobs and willing to pass it to other younger colleagues. Even when there are similarities between workers belonging to the two analysed firms, the salience of professional knowledge in providing professional identity emerge as a strong element in in the case of enterprise E2 compared to the other one.

For example, Mr C from enterprise E2 is similar to Ms B from enterprise E1. They both have pleasant memories of a previous workplace, described as more open, with more chance of dialogue with managers and more opportunities to be appreciated for their work. Mr C - as Ms B – acts as a stakeholder of his company and works with responsibility. However, despite this feeling of regret and missing the old workplace where he worked for thirty-three years (section 9.3.1), he shows an evident identification with the current company, reaching the point of imagining himself retired and passing by the plant, thinking of all the knowledge accumulated and left there. This affection is shown by the other older workers too in enterprise E2, making it difficult to find subjective differences relevant for the issue of vocational learning in this firm.

This study shows that when activities are organized around a very different object of activity, it is possible to find an evident difference in term of motives internalized by workers and arousing their working practices. Even when workers show different personal senses for those motives and hence their working and learning practices can be different, it is possible to appreciate in these the specificity of the context in which they develop.

I now turn attention to some of the issues of age and growing old.

10.4 Growing old and making sense of the working experiences

In a standard approach to the phenomenon of the low attendance of older workers in vocational learning, old age is considered to be one of explanatory factors of the decline of participation. In this perspective ageing is seen as a natural process bringing with it weakening mental capacities such as information-processing, and disengagement from active life (Chapter Two). This research reaches the conclusion that age can reflect the

accumulation of experiences, but not the types of experiences or the personal senses attached to these. Hence old age cannot be an indicator of attitude[105] towards vocational learning.

In the case studies presented in this research, the older workers in company E2 look to be less prone to vocational learning, while those working in the company E1 seem much more interested in learning for work. In a traditional way of analysing these findings, the first ones could be interpreted as the typical older workers showing resistance to changes because of their age, while the latter would not fit that cliché.

Yet, as discussed in Chapter Eight and Nine, this difference of attitude is linked to the objects of activities and the personal senses of doing the works these older workers do in those two activities, in company E1 and in company E2. The older workers in company E2 have the clear perspective of retirement and with this a feeling of personal achievement and fulfilment, because they have been engaged with an object of activity which has required the development of skills and provided personal senses. So, after some decades of work, they have now achieved a feeling of satisfaction and are ready to retire, even if they would need to carry on in making sense of their working life by passing their knowledge to their younger colleagues. Most of the older workers in E1 (with a partial exclusion of Ms D, happy about most of her professional life in E1) are in a diverse life position. As mentioned above, they still have expectations, as they have not been able to achieve what they would like to achieve. For this sense of expectation and hope these older workers are willing to learn what they think would support their professional development and the development of the activity.

In sum, the older workers' needs and motives for learning appear as being connected to the types of activities they have been participating in hitherto, and the current activities in which they are involved. Past experiences play a role in that: they can be sources of meanings and personal senses, and these orient the older workers about learning activities.

This means that the generalization that older workers require special support and incentives to participate in vocational learning – found in the EU documents – needs to be better specified (section 2.6). Older workers have age in common, but what this

[105] Attitude is intended to be seen in the CHAT sense, that is, as developed through transformative collective material practices.

represents can be different among them. When we construct the analysis using a CHAT influenced perspective, the dimension of age can even fade away and other issues can emerge, as the contradictions in strategies of production and their role in the processes of personal making sense, prompting desire for changes and motives for learning.

10.5 Female and male older workers: differences in mediating activities

The comparison between the two case studies also reveals a sexual/gendered[106] aspect: the large majority of workers on the shop floor of E1 are women, whereas all workers on the shop floor in E2 are men. Although the standard sociological studies would interpret this situation as sectoral gender segregation with potential implications for skills (under)utilization (Bettio and Verashchagina 2009, 52), the theoretical approach adopted in this research and its focus on motives for vocational learning suggests i) an investigation of the implications for skills development, and not only skills utilization and ii) a more fundamental questioning about the sexual/gendered features of who have designed the strategies of production.

In Chapter Nine I noted how in the narratives of the older workers interviewed in the enterprise E2, economic family responsibilities are salient in order to interpret their engagement at work and willingness to be active in their professional development (section 9.4). The men's family role as breadwinner is still important and recognized in the literature as one of the factors of occupational gender segregation (ibid., 45). However, in my study the motive for providing income and wellbeing for their families acts as a reinforcement of work and learning engagement. The passion for mechanics, which can unfold in that specific industrial activity, emerges as the prominent motive for work and learning engagement, the one which impels workers to go to work with a certain good spirit.

The reference to economic family responsibility does not surface in the narratives of the women older workers in enterprise E1, but concerns are about the working time and the work-life balance issue, another typical factor of occupational gender segregation,

[106] I adopt the 'sexual/gendered' locution, to take into account the two fundamentally different feminist approaches. The first is the theory of sexual difference, where the emphasis is on the difference between the sexes as bodies with their different reproductive functions. Gender is part of the vocabulary developed in the context of the social constructivist feminist theory, where the emphasis is on how we become women and men through the social reproduction of inequalities. It would be interesting to think about how CHAT could reconciliate these two stances through its focus on the single development between persons and activities in a cultural-historical perspective.

linked to the current unequal care burden among genders, which prevents women from prioritising income commitment within their families (ibid., 45). Yet in the case of the women interviewed, they work in E1 where working time is rigid. However, the difficulties in balancing work and life do not stop these women from becoming engaged with work and learning in their workplace. Here the issue is that in this type of work, shaped by the mass production strategy, there is little room for skills development. It is in this sense that these women suffer from the implications of the gender segregation in term of skills development: they have less chance to develop vocational skills because mass production strategy and its typical labour process - which requires assemblers - demands few skills. This has been pointed out by Probert too (1999).

Despite the limited chance of skills development linked to the type of production and strategy, this does not prevent some workers from being engaged with their tasks, as explained above. I note in my analysis in Chapter Eight how domestic and care activities are taken as a reference for women workers to evaluate the labour process in their workplace (the case of Ms C and Ms B). This indicates the possibility that the motives prompting domestic and care activities for their families can be used by these women workers to mediate their workplace practices and make sense of these, and hence care about their jobs on the shop floor as they care about their work at home.

In the cases of the male older workers the connection is with their hobbies and passions. Mr G is passionate about ship and aircraft modellism, an hobby which he reports as being linked to his job and his interests in giving shapes to things (section 9.3.1.2).

These few examples recall that the female and male activities outside the industrial workplaces can be very different. It would be interesting to look at how far the fact that industrial activities are designed mainly by men (Acher 1990; Probert 1999), who are responsible for domestic works and care givers much less than women, can influence the range of possibilities of making sense of those industrial productions by the female workers, who on the contrary are involved in domestic and care activities and few of them in the design of industrial activities.

This point is very important and innovative research can be done from this in the future: how far the typical female activities, with their developed knowledge and practices, have shaped industrial activities? How far this accumulated knowledge inform the design of strategies of production, with their complexity of relationships and challenges?

So far the female knowledge (skills, values, beliefs, practices, personal senses) has mainly informed the working practices in shop floor, as confirmed in the case study of enterprise E1, and in post-fordist offices (Poynton 1993), with a limited acknowledgement by the management as emerges from feminist studies and my study.

What surfaces from my research is that the issue is not only about differences among women and men in vocational learning, but actually how the different sexual/gendered cultures mediate the design of business activities and workplaces, thus providing more or less propitious conditions for the sense making of the female workers and their engagement. I will come back to this issue in the final section (10.7).

10.6 Implications for EU policies on older workers' learning

This research draws attention to the richness of the vocational learning when the object and strategy of the activity are experienced with engagement, even if with frustration, by the older workers. The older workers interviewed think and judge what occurs in their workplaces and suggest changes as stakeholders of the enterprise. Yet the enterprises follow strategies which substantially neglect this interest and desire for change. This consideration has some implications for the EU policies on older workers' learning.

Here I want to point out that the EU policies, besides being based on an individualistic and computational approach (section 2.6), appear to be based on the assumption that older workers need to be engaged in learning and included in the challenges launched by the global competition.

This research shows that at least some older workers are already engaged and ready to contribute to the development of their enterprises. The reasons for the other possible older workers appearing to be resistant to contributing would need an adequate investigation to engage with their personal senses and subjective ways of living their jobs.

Taking into account this subjective side – both as engagement and as resistance - and its contribution to the development of activities would require a profound revision of the theoretical approach informing the current EU policies, discussed in section 2.6.

On the basis of this research, the adoption of a CHAT influenced perspective would lead to inter-sectorial policies, that is, towards using the industrial and economic

policies to support certain strategies of production rather than others, more open to value the contribution of thoughts and desires of the personnel, considering them as stakeholders rather than another kind of resources (human).

Because, according to CHAT, people develop through activities, on the basis of this perspective, EU should frame its narrative on lifelong learning, and more specifically on continuing vocational learning, with awareness of the existing different strategies of production and market, and their implications for the meaningful participation and engagement of people in productive activities. In particular, the EU policies should promote the strategies of production open to the participation of the personnel to design the labour process and the work organization, including, more importantly, the design of the object of activities. Expanding on what was argued by Engeström (section 5.2 and 6.4.2), on the basis of my work on the subjective side of activities, I stress that the strategies of production in the high-modernity (section 2.4) should be characterized by the participation of the personnel in designing the strategy of production. This would fit with the space allowed to the self and the subjective dimension in the current western societies in the extra-working activities. Moreover it would value the practical and theoretical knowledge developed by the personnel in the working practices, as demonstrated by the Engeström's Change Laboratory method to innovate organizations.

Beside this stream of studies emphasizing participatory organizational practices, there is a long tradition of reflections and practices on alternative ways of organizing the economic activities, dimmed by the hegemonic liberist capitalism, which would receive - from this suggested revision of the theoretical perspective shaping the current European Union policies - more impulse and more analytical investigation to substantiate policies on this.

The next section depicts the issues that have surfaced in this research which deserve more investigation.

10.7 Further research activity

Two lines of further research have already emerged in the previous section. The first is about exploring other kinds of subjective relations to the objects of activities, with special attention to relations of resistance from older workers. The second is to expand the list of the strategies of production so far identified in the sociological-economic

literature by referring to other types of literature such as one of feminist works: these investigate alternative narratives to the neoliberal capitalistic ones on the economic activities and focus on strategies of production based on relations of social creation and reciprocal recognition of personal knowledge (De Vita 2009, 8888).

These strategies of production are applied in a few cases, but they are characterized by the inherent possibility of giving salience to the individual contributions to collective and material activities and by seeing the development of people as an aspect of the development of the activities. This occurs because people are viewed as the authors and the stakeholders of the activities. In this research it has emerged that some older workers act as stakeholders of their enterprises, although the strategy shaping the activity does not take into consideration their interest and desire to give their contribution to the design of the activity. Hence it would be interesting to explore the learning aspect of economic activities created by people (including older workers) to respond more directly to their own needs and desires. For example, there are cases of rural activities set up by people who want to develop organic production, giving this social and political meaning and attaching to these healthy life styles for themselves and proposing the same to their customers too. In this case, the social value of the production is a dominant motive and the profit creation appears to be instrumental (a condition) for the survival of the activity.

The relation between the social value of the production and the creation of profit was not the focus of this research. Yet I met instances of contradictions between what is useful for the work of the older workers and the objective of creating profit. I have seen, for example, the neglect of the desire of the older workers to know the names of the parts they assembly in the enterprise E1 (section 8.6.2).

This contradiction would be read by some CHAT authors as an instance of the primary contradiction in the capitalistic activities, the one between the use value and the exchange value. Sawchuk deems that it is possible to investigate learning trajectories only in the frame of this primary contradiction and proposes to integrate CHAT with the Use Value Theory (2012). Although the dominance of exchange value over use value is an important issue, my research shows the convenience of an analysis which opens the black box of the dominance of the exchange value.

I read that contradiction as the outcome of the adoption of an implicit theoretical vision influenced by the computational and behavioural stances which lead the enterprise E1 to invest mainly on learning in classrooms (section 8.7). I did not read it as the instance of contradictions between the social aspects of the production and the aim of keeping the economic activity profitable.

The exclusive reference of the dominance of the exchange value over the use value tends to set the two types of values one against the other, dismissing the fact that both are useful.

Hence, I propose to keep the object of activity as the pivotal element and to investigate its social value and the personal relation with this. This stance is coherent with the Leontievian idea that activities respond to cultural-historical needs. In this perspective the CHAT educational studies can carry out critical research on the object of activities by reading to what extent the objects of activities permit the development of older workers (and all the workers) and how older workers (and again all workers) can contribute to the development of activities and their objects to respond collectively to their own needs and desires. Adopting this framework, this research has highlighted the importance of the type of strategy of production with respect to the chance of development for people.

Now that this relation has clearly emerged in the industrial sector in a western context, further research can expand it both in the direction of examining other strategies of production and other types of personal relations with these.

These other kinds of strategies of production, and the ones already examined in Chapter Five, should also be analysed from the feminist point of view, as I pointed out in section 10.5, to see how far the objects of activities (strategies of production) have been emerged by the mediation of different sexual/gendered cultures and their historical cultural needs. A comparison between the strategies of production examined in this thesis and the ones highlighted above, based on social creation and recognition, could contribute to add insights into the personal relationship with the object of activity - as differentiated between sexes/genders. It is possible that the strategies mentioned in this section could be mediated by a feminine culture too and responding more to the historical-cultural needs of women than those investigated in this thesis. If this were confirmed, we could expect a higher positive engagement of women in the activities

organized around strategies based on social creation and recognition, and demonstrate the relevance of developing activities which incorporate the variety of sexual/gendered cultures.

As it can be noticed, CHAT provides conceptual tools able to open up interesting questioning on sexual/gendered issues. However it could be interesting to question CHAT itself from a feminist point of view, in order to build a feminist-CHAT approach coherent with the aim of exploring further how the sexual/gendered differences plays a role in the vocational learning.

11 References

Abreu, A. R. d. P., H. Beynon, et al. (2000). "The dream factory: VWs' modular production system in Resende." Work, Employment & Society **14**(2).

Acher, J. (1990). "Hierarchies, jobs, bodies: a theory of gendered organizations." Gender and Society **4**(2): 139-158.

Alldred, P. and V. Gillies (2002). Eliciting research accounts: re/producing modern subjects? M. Mauthner, M. Birch, J. Jessop and T. Miller. London, Sage**:** 146-165.

Altheide, D. L. and J. M. Johnson (1994). Criteria for Assessing Interpretive Validity in Qualitative Research. Handbook of Qualitative Research. N. K. Denzin and Y. S. Lincoln. London, Sage**:** 485-499.

Angrosino, M. (2008). Recontextualizing Observation: Ethnography, Pedagogy, and the Prospects for a Progressive Political Agenda. Collecting and Interpreting Qualitative Materials. N. K. Denzin and Y. S. Lincoln. Los Angeles, Sage**:** 161-183.

Antonelli, C. (2005). "Models of knowledge and systems of governance." Journal of Institutional Economics **1**(1): 51-73.

Aoki, M. (1994). The Japanise Firm as a System of Attributes: A Survey and Research Agenda. The Japanese Firm. Sources of Competitive Strength. M. Aoki and R. Dore. Oxford, Oxford University Press**:** 11-40.

Appelbaum, E. and R. Batt (1993). High Performance Work Systems. Washington, D.C., Economic Policy Institute.

Babson, S. (1995). "Lean or Mean: The Mit Model and Lean Production at Mazda." Labor Studies Journal **18**(2): 3-24.

Bahnisch, M. (2000). "Embodied Work, Divided Labour: Subjectivity and the Scientific Management of the Body in Frederick W. Taylor's 1907 'Lecture on Management'." Body Society **6**(1): 51-68.

Bakhurst, D. (1991). Consciousness and Revolution in Soviet Philosophy. From the Bolsheviks to Evald Ilyenkov. Cambridge, New York, Port Chester, Melbourne, Sydney, Cambridge University Press.

Bakhurst, D. (1997). Activity, consciousness, and communication. Mind, Culture and Activity. Seminal papers from the Laboratory of Comparative Human Cognition. M. Cole, Y. Engeström and O. Vasquez. Cambridge, Cambridge University Press**:** 147-163.

Baldwin, C. Y. (2007). Modularity, Transactions, and the Boundaries of Firms: A Synthesis. Boston, MA, Harvard Business School.

Baldwin, C. Y. and K. B. Clark (2000). Design Rules. The power of modularity. Boston, MIT Press.

Baracat, B. and J. C. Marquié (1994). Training the middle-aged in new computer technology using signal detection theory in a real-life word-processing learning situation. Work and Aging. A European Prospective. J. Snel and R. Cremer. London, Bristol, Taylor&Francis**:** 197-211.

Bauman, Z. (1992). Intimations of postmodernity. London; New York Routledge.

Bauman, Z. (1997). Postmodernity and its discontents. Cambridge Polity press.

Beach, K. (1999). Consequential Transitions: A Sociocultural Expedition Beyond Transfer in Education. Review of Research in Education. A. Iran-Nejad and P. D.

Pearson. Washington, D.C., American Educational Research Association. **24:** 101-139.
Bell, D. (1973). The Coming of Post-Industrial Society. A Venture in Social Forecasting. New York, Basic Books.
Bell, D. (1976). The Coming of Post-Industrial Society. A Venture in Social Forecasting. New York, Basic Books.
Bettio, F. and A. Verashchagina (2009). Gender segregation in the labour market. Root causes, implications and policy responses in the EU. Luxembourg, European Communities.
Billett, S. (2001). Learning in the Workplace: Strategies for effective practice. Crows Nest, NSW, Allen &Unwin.
Billett, S. (2001). "Learning Throughout Working Life: Interdependencies at Work." Studies in Continuing Education **23**(1): 19-35.
Billett, S. (2004). Learning through work: workplace participatory practices. Workplace Learning in Context. H. Rainbird, A. Fuller and A. Munro. London, Routledge.
Billett, S. (2006). Work, change and workers. Dordrecht, The Netherlands, Springer.
Billett, S. (2009). Enacting, remaking and transforming work: Conceptions and an explanation. Researching Work and Learning. Roskilde University, Copenhagen.
Birch, M., T. Miller, et al. (2002). Introduction. Ethics in Qualitative Research. M. Mauthner, M. Birch, J. Jessop and T. Miller. London Sage**:** 1-13.
Birecree, A., S. Konzelmann, et al. (1997). "Productive systems, competitive pressures, strategic choices and work organizations: an introduction." International Contributions to Labour Studies(7): 3-17.
Block, F. (1990). Postindustrial Possibilities: A Critique of Economic Discourse. Berkeley, University of California Press.
Blunden, A. (2009). "An Interdisciplinary Concept of Activity." Outlines(1): 26.
Boeije, H. (2002). "A Purposeful Approach to the Constant Comparative Method in the Analysis of Qualitative Interviews." Quality & Quantity(36): 391-409.
Bonazzi, G. (2003). Il mercato in fabbrica: effetti e problemi delle terziarizzazioni in Fiat Auto. Impresa senza confini. Percorsi, strategie e regolazione dell'*outsourcing* nel post-fordismo maturo. G. Bonazzi and S. Negrelli. Milano, Franco Angeli**:** 148-172.
Bonazzi, G. (2007). La questione industriale. Milano, FrancoAngeli.
Bonazzi, G. and S. Negrelli, Eds. (2003). Impresa senza confini. Percorsi, strategie e regolazione dell'*outsourcing* nel post-fordismo maturo. Milano, Franco Angeli.
Bonazzi, G. and V. Pulignano (2002). The Market in the Factory. Coordinating Industrial and Organizational Relations in the Italian Motor Industry. Warwick Working Paper in Industrial Relations. Warwick.
Bourdieu, P. and L. J. D. Wacquant (1992). An Invitation To Reflexive Sociology. Cambridge, Polity Press.
Boyer, R. (1987). The Eighties: The Search for Alternatives to Fordism. Sixth International Conference of Europeanists. Washington, DC.
Braverman (1974). Labor and Monopoly Capital. The degradation of work in the 20th Century. New York, Monthly Review Press.
British-Sociological-Association (2002). Statement of Ethical Practice.
Brown, P. (2001). Skill Formation in the Twenty-First Century. High Skills. Globalization, Competitiveness, and Skill Formation. P. Brown, A. Green and H. Lauder. Oxford, Oxford University Press**:** 1-55.
Bruner, J. (1997). The Culture of Education, Harvard University Press.

Buran, P. (2001). Introduzione - Verso l'economia della conoscenza. [Introduction - Towards the knowledge-based economy]. Scenari per il Piemonte del Duemila. [Scenarios for the Piedmont of twenty-first century. First triennial Report]. P. Buran, L. Abburrà, S. Aimoneet al. Turin, IRES Piemonte**:** 13-52.

Burawoy, M. (1979). Manufacturing Consent. Changes in the Labor Process Under Monopoly Capitalism. Chicago, University of Chicago Press.

Cardano, M. (2001). "Etnografia e riflessività. Le pratiche riflessive costrette nei binari del discorso scientifico." Rassegna Italiana di Sociologia **XLII**(2): 173-204.

Cardano, M. (2003). Tecniche di ricerca qualitativa. Roma, Carocci.

Cardano, M. (2007). Notazione ATB per la trascrizione delle interviste discorsive. Turin, Social Sciences Department -University of Turin**:** 7.

Cardano, M. (2008). L'analisi delle narrazioni autobiografiche: una mappa. L'analisi delle narrazioni autobiografiche. Gruppo-di-ricerca-sulle-Transizioni-Biografiche. Torino, Dipartimento di Scienze Sociali, Universita' di Torino. **0:** 13-18.

Cardano, M. (2009). Ethnography and Reflexivity. Notes on the Construction of Objectivity in Ethnographic Research. Turin, University of Turin.

Cardinali, L., F. Frassinetti, et al. (2009). "Tool-use induces morphological updating of the body schema." Current Biology **19**(13): 1157.

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

Castells, M. (2000). The Rise of the Network Society. Oxford - Malden, Blackwell.

CEDEFOP (2010). Skills supply and demand in Europe: medium-term forecast up to 2020. Thessaloniki, Cedefop.

Cerruti, G. C., S. Leonardi, et al. (2009). Innovazione e relazioni industriali nelle imprese del Piemonte. La regolazione collettiva dei rapporti di lavoro tra competitività ed equità nel post-fordismo. Torino, Associazione Ires "Lucia Morosimi".

Chaiklin, S. (2001). The Category of 'Personality' in Cultural-Historical Psychology. The Theory and Practice of Cultural-historical Psychology. S. Chaiklin. Aarhus, Aarhus university press. **22:** 238-259.

Chaiklin, S. (2003). Activity, Theory and Social Practice: Cultural Historical Approaches, Aarhus University Press.

Charness, N., C. Kelley, et al. (1996). Cognitive Theory and Word Processing Training: When Prediction Fails. Aging and Skilled Performance. Advances in Theory and Applications. A. W. Rogers, D. A. Fisk and N. Walker. Mahwah, Ney Jersey, Lawrence Erlbaum Associates**:** 221-239.

Chase, S. E. (2008). Narrative Inquiry. Multiple Lenses, Approaches, Voices. Collecting and Interpreting Qualitative Materials. N. K. Denzin and Y. S. Lincoln. Los Angeles, Sage**:** 57-94.

Clark, A. (1997). Being there: Putting Brain, Body and World Together Again. Cambridge, MA, MIT Press.

Cole, M. (1985). The zone of proximal development: where culture and cognition create each other. Culture, communication and cognition. J. V. Wertsch. Cambridge, Cambridge University Press**:** 146-161.

Cole, M. (1996). Cultural Psychology. A once and future discipline. Cambridge, Massachusettes, and London, England, The Belknap Press of Harvard University Press.

Cole, M. and J. V. Wertsch. (1997). "Beyond the Individual-Social Antimony in Discussions of Piaget and Vygotsky." Retrieved 1st July, 2004, from http://www.massey.ac.nz/~alock/virtual/colevyg.htm.
Commission-of-the-European-Communities (2001). Making a European Area of Lifelong Learning a Reality. Brussels.
Como, E. (2008). La voce di 100.000 lavoratrici e lavoratori. Presentazione dei risultati dell'inchiesta nazionale sulla condizione dei metalmeccanici in Italia. Introduzione di Giorgio Cremaschi [The voice of 100.000 workers. Report of the findings of the national survey on the conditions of the metal workers in Italy. Rome, FIOM.
Czaja, S. J. (1996). Aging and the Acquisition of Computer Skills. Aging and Skilled Performance. Advances in Theory and Applications. A. W. Rogers, D. A. Fisk and N. Walker. Mahwah, Ney Jersey, Lawrence Erlbaum Associates**:** 201-220.
Daniels, H. (2001). Vygotsky and Pedagogy. London, Routledge/Falmer.
Daniels, H. (2008). Vygotsky and Research. London and New York, Routledge.
Darrah, C. N. (1996). Learning and work : an exploration in industrial ethnography. New York, Garland.
De Vita, A. (2009). La creazione sociale. Relazioni e contesti per educare [The social creation. Relationships and contexts for education]. Roma Carocci.
Deakin, S. and F. Wilkinson (1996). Contracts, cooperation and trust: the role of the institutional framework. Contract and Economic organization. D. Campbell and P. Vincent-Jones. Aldershot, Dartmouth Publishing Company**:** 34.
Delbridge, R. (1998). Life on the line in contemporary manufacturing. The Workplace Experience of Lean Production and the 'Japanise' Model. Oxford, Oxford University press.
Della Rocca, G. and V. Fortunato (2006). Lavoro e organizzazione. Dalla fabbrica alla società postmoderna. Roma-Bari, Laterza.
Derry, J. (2004). "The unity of ntellect and will: Vygotsky and Spinoza " Educational Review **56**(2): 113-120.
Duncombe, J. and J. Jessop (2002). 'Doing Rapport' and the Ethics of 'Faking Friendship'. Ethics in Qualitative Research. M. Mauthner, M. Birch, J. Jessop and T. Miller. London, Sage**:** 107-122.
Dunlosky, J. and C. Hertzog (1998). Training Programmes to Improve Learning in Later Adulthood - Helping Older Adults Educate Themselves, J. Dunlosky and C. Hertoz. Metacognition in educational theory and practice. D. J. Hacker, J. Dunlosky and A. C. Graesser. Mahwah, NJ, Lawrence Erlbaum Associates.
Edwards, A. (2005). "Relational agency: Learning to be a resourceful practitioner." International Journal of Educational Research **43**(3): 168-182.
Edwards, A. (2010). Being an Expert Professional Practitioner. The Relational Turn in Expertise. Dordrecht, Springer.
Edwards, A. (2011). Expertise in the Children's Workforce: Knowledge and Motivation in Engagement with Children. Motives in Children's Development. M. Hedegaard, A. Edwards and M. Fleer. Cambridge, Cambridge University Press**:** 173-190.
Edwards, A. and H. Daniels (2012). "The knowledge that matters in professional practices." Journal of Education and Work **25**(1): 39-58.
Elder, G. H. J. (1975). "Age Differentiation and the Life Course." Annual Review of Sociology **1**: 165-190.

Engeström, Y. (1987). Learning by expanding: An Activity - Theoretical Approach to Developmental Research, http://communication.ucsd.edu/MCA/Paper/Engestrom/expanding/toc.htm.
Engeström, Y. (1996). Developmental studies of work as a testbench of activity theory: The case of primary care medical practice. Understanding practice: perspectives on activity and context. S. Chaiklin and J. Lave. Cambridge, Cambridge University Press**:** 64-103.
Engeström, Y. (1999). Activity theory and individual and social transformation. Perspectives on Activity Theory. Y. Engeström, R. Miettinen and R.-L. Punamäki. Cambridge, Cambridge University Press**:** 19-38.
Engeström, Y. (1999). Innovative learning in work teams: Analyzing cycles of knowledge creation in practice. Perspectives on Activity Theory. Y. Engeström, R. Miettinen and R.-L. Punamäki. Cambridge, Cambridge University Press**:** 377-404.
Engeström, Y. (2001). "Expansive Learning at Work: toward an activity theoretical reconceptualization." Journal of Education and Work **14**(1): 133-156.
Engeström, Y. (2004). New Forms of Learning in Co-Configuration Work. Seminar "ICTs in the contemporary world: work management and culture". London School of Economics, Department of Information Systems.
Engeström, Y. (2004). The new generation of expertise: seven theses. Workplace Learning in Context. H. Rainbird, A. Fuller and A. Munro. London, Routledge.
Engeström, Y. (2007). "Enriching the theory of expansive learning: lessons from journeys toward coconfiguration." Mind, Culture and Activity **14**(1&2): 23-39.
Engeström, Y. (2007). Putting Vygotsky to Work: The Change Laboratory as an Application of Double Stimulation. The Cambridge Companion to Vygotsky. H. Daniels, M. Cole and J. V. Wertsch. Cambridge, Cambridge University Press.
Engeström, Y. (2011). Activity Theory and Learning at Work. The Sage Handbook of Worplace Learning. M. Malloch, L. Cairns, K. Evans and B. N. O'Connor. London, Sage**:** 86-104.
Engeström, Y., R. Engeström, et al. (1995). "Polycontextuality and Boundary Crossing in Expert Cognition: Learning and Problem-Solving in Complex Work Activities." Learning and Instruction **5**(1): 319-366.
Engeström, Y. and R. Miettinen (1999). Introduction. Perspectives on Activity Theory. Y. Engeström, R. Miettinen and R.-L. Punamäki. Cambridge, New York, Port Melbourne, Madrid, Cape Town, Cambridge University Press**:** 1-16.
Eraut, M., J. Alderton, et al. (2000). Development of knowledge and skills at work. Differing visions of a Learning Society. F. Coffield. Bristol, Policy Press**:** 231-262.
European-Commission (2000). A Memorandum on Lifelong Learning. Brussels.
European-Commission (2001). Making a European Area of Lifelong Learning a Reality. Brussels.
European-Commission (2002). eEurope 2005: An information society for all - An Action Plan to be presented in view of the Sevilla European Council, 21/22 June 2002. European-Council, European-Parliament, The Economic and Social Committee and The-Committee-of-Regions.
European-Commission (2006). Progress Towards the Lisbon Objectives in Education and Training. Report based on indicators and benchmarks. Report 2006. Commission Staff Working Document. Brussels.

European-Commission (2006). Time to Move up a Gear. Annual Report on Growth and Jobs. Bruxelles.
European-Commission (2008). Progress Towards the Lisbon Objectives in Education and Training. Indicators and Benchmarks - 2008. Luxembourg, Office for Official Publications of the European Communities.
European-Commission (2010). Europe 2020 - Integrated guidelines for the economic and employment policies of the Member States. Bruxells.
European-Commission (2010). Recomandation for a Council Recommedation on broad guidelines for the economic and employment policies of the Member States. Brussels.
European-Council (2000). Presidency Conclusion. Lisbon European Council, Lisbon.
European-Council (2001). Presidency Conclusions. Stockholm European Council, Stockholm.
European-Council (2008). "Council conclusions of 22 May 2008 on adult learning." Official Journal of the European Communities **C 140/10**.
European-Council (2011). "Council Resolution on a renewed European agenda for adult learning " Official Journal of the European Communities **C 372/1**
European-Parliament and European-Council (2006). "Decision N 1720/2006/EC of the European Parliament and of the Council of 15 November 2006 establishing an action programme in the field of lifelong learning." Official Journal of the European Union **L327/45**.
European-Parliament and European-Council (2006). "Recommendation of the European Parliament and the Council of 18 December 2006 on key competences for Lifelong Learning (2006/962/EC)." Official Journal of the European Union(L394/10).
Eurostat (2009). Reconciliation between work, private and family life in the European Union. Luxembourg, European Communities.
Evans, K., P. Hodkinson, et al. (2006). Improving Workplace Learning. London and New York, Routledge.
Evans, K., P. Hodkinson, et al. (2002). Working to learn. Transforming learning in the workplace. London, Kogan Page.
Evans, K. and N. Kersh (2006). Learner biographies, working practice, and learning. Improving Workplace Learning. K. Evans, P. Hodkinson, H. Rainbird and L. Unwin. London and New York, Routledge**:** 68-94.
Farr, J. L., P. E. Tesluk, et al. (1998). Organizational Structure of the Workplace and the Older Worker. Impact of Work on Older Adults. K. W. Schaie and C. Schooler. New York, NY, Springer**:** 143-185.
Felstead, A., A. Fuller, et al. (2009). Improving Working as Learning. London and New York, Routledge.
Fielding, N. G., Ed. (1988). Actions and structure. Research methods and social theory. London, Sage.
Fischer, M. (2002). Work experience as an element of work process knowledge. Work Process Knowledge N. Boreham, R. Samurçay and M. Fischer. London, Routledge**:** 119-133.
Formosa, M. (2002). "Critical Gerogogy: developing practical possibilities for critical educational gerontology." Education and Ageing **17**(1): 73-85.
Frost, N. (2000). The network society and lifelong learning - the work of Manuel Castells and theories of adult education. SCUTREA, 30th Annual Conference, University of Nottingham.

Fuller, A. and L. Unwin (1998). "Reconceptualising Apprenticeship: exploring the relationship between work and learning." Journal of Vocational Education and Traning **50**(2): 153-171.
Fuller, A. and L. Unwin (2003). "Learning as apprentices in the contemporary UK workplace: creating and maintaining expansive and restrictive participation." Journal of Education and Work **16**(4): 407-426.
Fuller, A. and L. Unwin (2004). Expansive Learning Environments: Integrating organizational and personnel development. Workplace Learning in Context. H. Rainbird, A. Fuller and A. Munro. London, Routledge.
Fuller, A. and L. Unwin (2005). "Older and wiser?: workplace learning from the perspective of experienced employees." International Journal of Lifelong Education **24**(1): 21-39.
Fuller, A. and L. Unwin (2006). Expansive and restrictive learning environments. Improving Worplace Learning. K. Evans, P. Hodkinson, H. Rainbird and L. Unwin. London and New York, Routledge**:** 27-48.
Fuller, A. and L. Unwin (2011). Workplace Learning and the Organization. The SAGE Handbook of Workplace Learning. M. Malloch, L. Cairns, K. Evans and B. N. O'Connor. London, Sage**:** 46-59.
Gerring, J. (2007). Case Study Research. Principles and Practices. Cambridge, Cambridge University Press.
Gesano, G. (2010). The Piemonte Region (Italy): 'Challenge of ageing' faced by immigration. Roma.
Giddens, A. (1990). The Consequences of Modernity. Cambridge, Polity Press.
Giddens, A. (1991). Modernity and Self-Identity: Self and Society in the Late Modern Age. Cambridge, Polity Press.
Glaser, B. G. (1992). Basics of grounded theory analysis. Mill Valley, Sociology Press.
Glaser, B. G. and A. L. Strauss (1967). The Discovery of Grounded Theory: Strategies for Qualitative Research. Chicago, Aldine.
Glendenning, F. (1992). Educational Gerontology and Gerogogy: A Critical Perspective. Geragogics: European Research in Gerontological Education and Educational Gerontology. C. Berdes, A. A. Zych and G. D. Dawson. New York, The Haworth Press.
Glendenning, F. (2000). Teaching and Learning in Later Life: Theoretical Implications. Burlington, Vermont, Ashgate.
Glendenning, F. and D. Battersby (1990). Why We Need Educational Gerontology and Education for Older Adults: a Statement of First Principles. Ageing, Education and Society, Readings in Education Gerontology. F. Glendenning and K. Percy. Keele, Association for Educational Gerontology.
Goldthorpe, J. H. (2000). On Sociology: numbers, narratives, and integration of research and theory. Oxford, Oxford University Press.
Goldthorpe, J. H. (2000). Social Ethnography today: Problems and possibilities. On Sociology: numbers, narratives, and integration of research and theory. J. H. Goldthorpe. Oxford, Oxford University Press**:** 65-93.
Gomm, R. (2009). Key concepts in social research methods. New York, Palgrave Macmillan.
Guile, D. (2001). "Education and the economy: rethinking the question of learning for the 'knowledge' era." Futures **33**: 469-482.
Guile, D. (2002). "Skill and Work Experience in the European Knowledge Economy." Journal of Education and Work **15**(3): 251-276.

Guile, D. (2006). "Learning across contexts." Educational Philosophy and Theory **38**(3): 251-268.
Guile, D. (2007). "Mœbius strip enterprises and expertise in the creative industries: new challenges for lifelong learning?" International Journal of Lifelong Education **26**(3): 241 - 261
Guile, D. (2010). The Learning Challenge of the Knowledge Economy. Rotterdam, Sense.
Guile, D. (2012). "Inter-professional working and learning: 'recontextualising' lessons from 'project work' for programmes of initial professional formation." Journal of Education and Work **25**(1): 79-99.
Hager, P. (2005). Current theories of workplace learning: a critical assessment International handbook of educational policy. N. Bascia, A. Cumming, A. Datnow, K. Leithwood and D. W. Livingstone. Dordrecht, Springer**:** 829-846.
Halberstam, J. J. (2012). Gaga Feminism. Sex, Gender, and the End of Normal. Boston, Beacon press.
Hayter, R. (1997). The Dynamics of Industrial Location: The Factory, the Firm and the Production System. Chichester, John Wiley and Sons.
Hedge, J. W., W. C. Borman, et al. (2006). The Ageing Workforce. Realities, Myths, and Implications for Organizations. Washington, D.C., American Psychological Association.
Helper, S., J. P. MacDuffie, et al. (2000). "Pragmatic Collaborations: Advancing Knowledge While Controlling Opportunism." Industrial and Corporate Change **9**(3): 443-448.
Herrigel, G. (2004). "Emerging Strategies and Forms of Governance in High-Wage Component Manufacturing Regions." Industry and Innovation **11**(1/2): 45-79.
Hodkinson, P. and H. Hodkinson (2003). "Individuals, Communities of Practice and the Policy Context: school teachers' learning in their workplace." Studies in Continuing Education **25**(1): 3-22.
Hodkinson, P. and H. Hodkinson (2004). "The Significance of Individuals' Dispositions in Workplace Learning: a case study of two teachers." Journal of Education and Work **17**(2): 167-182.
Hodkinson, P. and H. Hodkinson (2006). How individuals influence workplace practices, and how work can change worker dispositions and identities. Improving Workplace Learning. K. Evans, P. Hodkinson, H. Rainbird and L. Unwin. London and New York, Routledge**:** 95-115.
Hodkinson, P. and F. Macleod (2010). "Contrasting concepts of learning and contrasting research methodologies: affinities and bias." British Educational Research Journal **36**(2): 173-189.
Hutchins, E. (1995). Cognition in the Wild. Cambridge, MA, MIT Press.
Huys, R. and G. van Hootegem (2002). A Delayed Transformation? Changes in the Division of Labour and Their Implications for Learning Opportunities. Work Process Knowledge. N. Boreham, R. Samurcay and M. Fischer. London, Kogan Page.
Hyysalo, S. (2005). "Objects and Motives in a Product Design Process." Mind, Culture and Activity **12**(1): 19-36.
Iacci, P., G. Rebora, et al. (2005). Troppo vecchi a quarant'anni? Milano, Il Sole 24 ORE.
IRES-Piemonte (2001). Popolazione e risorse umane: la sfida del Piemonte. Torino, IRES-Piemonte.

ISTAT (2008). Conciliare lavoro e famiglia. Una sfida quotidiana. Roma, Istat.
Jürgens, U. (1989). The transfer of Japanise management concepts in the international automobile industry. The Transformation of Work? Skill, Flexibility and the Labour Process. S. Wood. London, Unwin Hyman.
Kakavelakis, K., A. Felstead, et al. (2008). "Making a Sales Advisor: the Limits of "instrumental Empathy"." Journal of Vocational Education and Traning **60**(3): 209-211.
Kaptelinin, V. (2005). "The Object of Activity: Making Sense of the Sense-Maker." Mind, Culture and Activity **12**(1): 4-18.
Kaptelinin, V. and B. A. Nardi (2006). Acting with technology: Activity theory and interaction design. Cambridge, MA, MIT Press.
Keep, E. (2008). Embedding learning in work and using learning in work. Some lessons from recent research and policy innovation. New Zeland Conference.
Keep, E. and K. Mayhew (1999). "The assessment: knowledge, skills and competitiveness." Oxford Review of Economic Policy(15): 1-16.
Kern, H. and M. Schumann (1991). La fine della divisione del lavoro? produzione industriale e razionalizzazione. Torino, Einaudi.
Kirk, J. and M. L. Miller (1986). Reliability and validity in qualitative research. Newbury Park, CA, Sage.
Kogut, B. and U. Zander (1996). "What Firms do: Coordination, Identity, and Learning." Organizational Science(7).
Koike, K. (2002). "Intellectual Skills and Competitive Strength: is a radical change necessary?" Journal of Education and Work **15**(4): 391-408.
Kok, W. (2004). Facing the challenge. The Lisbon strategy for growth and employment. Luxembourg, Europeen Communities.
Lash, S. and J. Urry (1987). The End of Organised Capitalism. Cambridge, Polity Press.
Lave, J. (1988). Cognition in Practice: Mind, mathematics and culture in everyday life. Cambridge, Cambridge University Press.
Lave, J. and E. Wenger (1991). Situated learning. Legitimate peripheral participation. Cambridge, Cambridge University Press.
Lawrence, J. A. and J. Valsiner (1993). "Conceptual Roots of Internalization: From Transmission to Transformation." Human Development **36**: 150-167.
Lee, Y.-J., W.-M. Roth, et al. (2003). They've gotta learn something unless they're just out to lunch: Becoming an expert in a salmon hatchery. Connections '03. W.-M. Roth**:** 153-174.
Leonard, P. (1984). Personality and Ideology. London, Macmillan.
Leont'ev, A. N. (1978). Activity, Consciousness, and Personality. Englewood Cliffs, N.J., Prentice-Hall.
Leont'ev, A. N. (1981). Problems of the development of mind. Moscow, Progress Publishers.
Leontiev, A. N. (1978). Activity, Consciousness, and Personality. Englewood Cliffs, N.J., Prentice-Hall.
Leontiev, A. N. (1981). Problems of the development of mind. Moscow, Progress Publishers.
Lindenberger, U. and P. B. Baltes (1997). "Intellectual functioning in old and very old age: Cross-sectional results from the Berling Aging Study." Psychology and Aging **12**: 410-432.

Lindley, R. and N. Duell (2006). Ageing and employment. Identification of good practice to increase job opportunities and mantain older workers in employment. Bruxelles, European Commission.
Loyal, S. and B. Barnes (2001). ""Agency" as a Red Herring in Social Theory." Philosophy of the Social Sciences **31**(4): 507-524.
MacDuffie, J. P. (1995). "Human resource bundles and manufacturing performance: organizational logic and flexible production systems in the world auto industry." Industrial and Labor Relations Review **48**(2): 197-221.
Marshall, A. (1961 [1890]). Principles of Economics. New York, Macmillan.
Marsick, V. J. and K. Watkins (1990). Informal and Incidental Learning in the Workplace. New York, Routledge.
Mathews, J. (1989). Tools of change: new technology and the democratisation of work, Pluto Press.
Mauthner, M., M. Birch, et al., Eds. (2002). Ethics in Qualitative Research. London, Sage.
Miettinen, R. (2005). "Object of Activity and Individual Motivation." Mind, Culture and Activity **12**(1): 52-69.
Migliore, M. C., L. Abburrà, et al. (2002). Scenari demografici e alternative economiche. La popolazione piemontese d'origine italiana e straniera fra 2000 e 2050. Torino, IRES-Piemonte.
Miller, T. and L. Bell (2002). Consenting to what? issues of access, gate-keeping and 'informed' consent. Ethics in qualitative research. M. Mauthner, M. Birch, J. Jessop and T. Miller. London, Sage**:** 53-69.
Minick, N. J. (1985). L. S. Vygotsky and Sovietic Activity Theory: New Perspectives on the Relationship Between Mind and Society. Evanston, Illinois, Northwestern University**:** 397.
Minick, N. J. (1987). The development of Vygotsky's thought: an introduction. The Collected Works of L. S. Vygotsky. Problems of General Psychology. R. W. Rieber and A. S. Carton. New York and London, Plenum Press. **1:** 17-36.
Molinié, A.-F. and S. Volkoff (1994). Working conditions: problems ahead for workers over the age of 40. Work and Aging. A European Prospective. J. Snel and R. Cremer. London, Bristol, Taylor&Francis**:** 214-223.
Moody, H. R. (1990). Education and the life cycle: a philosophy of aging. Introduction to Educational Gerontology. R. H. Sherron and D. B. Lumsden. New York, Hemisphere Publishing**:** 23-39.
Moosa, D. (2013). "Challenges to anonymity and representation in educational qualitative research in a small community: a reflection on my research journey." Compare: A Journal of Comparative and International Education **43**(4): 483-495.
Nardi, B. A. (2005). "Objects of Desire: Power and Passion in Collaborative Activity." Mind, Culture and Activity **12**(1): 37-51.
Neugarten, B. L. and N. Datan (1973). Sociological Perspectives on the Life Cycle. Life Span Developmental Psychology. P. B. Baltes and K. W. Schaie. New York, Academic Press**:** 53-71.
O'Doherty, D. and H. Willmott (2001). "Debating Labour Process Theory : The Issue of Subjectivity and the Relevance of Poststructuralism." Sociology **35**(2): 457-476.
Oakes, A. (1981). Interviewing women: a contradiction in terms. Doing Feminist Research. H. Roberts. London Routledge and Kegan Paul.
Ohno, T. (1988). Toyota Production System. Beyond Large-scale Production. New York, Productivity Press Inc.

Park and Schwarz, Eds. (2000). Cognitive Aging. A Primer.
Park, D. C. (2000). The basic mechanisms accounting for age-related decline in cognitive function. Cognitive Aging. A Primer. D. C. Park and N. Schwarz. Philadelphia, PA, Taylor & Francis**:** 3-21.
Park, D. C. and A. H. Gutchess (2000). Cognitive aging and every day life. Cognitive Aging. A Primer. D. C. Park and N. Schwarz. Philadelphia, PA, Taylor & Francis**:** 217-232.
Piore, M. J. and C. F. Sabel (1984). The Second Industrial Divide. New York, Basic Books, Inc.
Poland, B. D. (2002). Transcription Quality. Handbook of Interview Research. Method&context. J. F. Gubrium and J. A. Holstein. Thousand Oaks, London, New Delhi, Sage**:** 629-649.
Powell, W. W. (1990). Neither Market Nor Hierarchy: Network Forms of Organizations. Research in Organizational Behavior. L. L. Cummings and B. M. Staw. Greenwich, JAI Press. **12:** 295-336.
Poynton, C. (1993). Naming women's workplace skills. Pink Collar Blues: Work, Gender and Technology. B. Probert and B. W. Wilson. Melbourne, Melbourne University Press.
Probert, B. (1999). Gendered Workers and Gendered Work. Understanding Learning at Work. D. Boud and J. Garrick. London, Routledge.
Rabbitt, P. M. A. and A. Carmichael (1994). Designing communications and information-handling systems for elderly and disabled users. Work and Aging. A European Prospective. J. Snel and R. Cremer. London, Bristol, Taylor&Francis**:** 173-195.
Ramazanoğlu, C. and J. with Holland (2003). Feminist Methodology. Challenges and Choices. London, Sage.
Regini, M. (1995). "Firms and institutions: the demand for skills and their social production in Europe." European Journal of Industrial Relations(1): 191-202.
Revelli, M. (2004). Introduzione. Lo spirito Toyota. Il modello giapponese della qualità totale. E il suo prezzo. T. Ohno. Torino, Einaudi**:** IX-XLIV.
Rinehart, J., C. Huxley, et al. (1997). Just Another Car Factory: Lean Production and Its Discontents. Ithaca, Cornell University Press.
Ritzer, G. (1993). The McDonaldization of Society. Thousand Oaks, California; London, Pine Forge Press.
Robinson-Pant, A. and N. Singal (2013). "Researching ethically across cultures: issues of knowledge, power and voice." Compare: A Journal of Comparative and International Education **43**(4): 417-421.
Rogoff, B. (1984). Introduction: Thinking and Learning in Social Context. Everyday Cognition: Its Development in Social Context. B. Rogoff and J. Lave. Cambridge, Massachussetts, and London, England, Harvard University Press**:** 1-8.
Rogoff, B. (1990). Apprenticeship in Thinking. Cognitive Development in Social Context. New York, Oxford, Oxford University Press.
Rose, D. and O. Sullivan (1996). Introducing Data Analysis for Social Scientists. Buckingham, Philadelphia, Open University.
Rose, M. (1978). Industrial Behaviour: Theoretical Development since Taylor. London, Pelican.
Roth, W.-M. (2007). "Emotion at Work: A Contribution to Third-Generation Cultural-Historical Activity Theory." Mind, Culture and Activity **14**(1-2): 40-63.

Ryder, N. B. (1965). "The cohort as a concept in the study of social change." American Sociological Review **30**(6): 843-861.
Sabel, C. F. (1989). Flexible Specialization and the Re-emergence of Regional Economies. Reversing Industrial Decline? Industrial structure and policy in Britain and her competitors. P. Hirst and J. Zeitlin. Oxford, Berg**:** 17-70.
Sabel, C. F. (1994). Learning by Monitoring: The Institutions of Economic Development. The Handbook of Economic Sociology. N. J. Smelser and R. Swedberg. Princeton, Princeton University Press.
Sabel, C. F. (2004). "Pragmatic Collaborations in Practice: A Response to Herrigel and Whitford and Zeitlin." Industry and Innovation **11**(1/2): 81-87.
Sako, M. and F. Murray (2000). Modules in Design, Production and Use: Implications for the Global Automotive Industry. International Motor Vehicle Program. Cambridge.
Säljö, R. (2007). Studying learning and knowing in social practices. Units of analysis and tensions in theorizing Opening of the Oxford Centre for Sociocultural Activity Theory Research. Oxford.
Säljö, R. (2009). "Learning, Theories of Learning, and Units of Analysis in Research." Educational Psychologist **44**(3): 202-208.
Sannino, A. (2008). "From Talk to Action: Experiencing Interlocution in Developmental Interventions." Mind, Culture and Activity **15**(3): 234-257.
Sannino, A. (2010). "Teachers' talk of experiencing: Conflict, resistance and agency." Teaching and Teacher Education(26): 838-844.
Saraceno, C., Ed. (1986). Età e corso della vita [Age and Life Course]. Bologna, il Mulino.
Saraceno, C. (2003). Mutamenti della famiglia e politiche sociali. Bologna, il Mulino.
Saunders, M. (2006). "From ‘organisms’ to ‘boundaries’: the uneven development of theory narratives in education, learning and work connections." Journal of Education and Work **19**(1): 1-27.
Sawchuk, P. (2012). Divergent working and learning trajectories in social services: insights from a use-value perspective. The Knowledge Economy and Lifelong Learning: Critical Perspectives. D. W. Livingstone and D. Guile, Sense Publishers.
Sawchuk, P. and A. Stetsenko (2008). "Sociological Understandings of Conduct for a Noncanonical Activity Theory: Exploring Intersections and Complementarities." Mind, Culture and Activity **15**: 339-360.
Schatzki, T., K. D. Knorr-Cetina, et al., Eds. (2001). The Practice Turn in Contemporary Theory. Oxon, UK; New York, NY, Routledge.
Schooler, C., L. Caplan, et al. (1998). Aging and Work: An Overview. Impact of Work on Older Adults. K. W. Schaie and C. Schooler. New York, NY, Springer**:** 1-19.
Sennett, R. (1998). The Corrosion of Character. The Personal Consequences of Work in the New Capitalism. New York, London, W. W. Norton & Company.
Settersten, R. A. J. (2006). Aging and the Life Course. Handbook of Aging and the Social Sciences. R. H. Binstock and L. K. George. Amsterdam, Elsevier**:** 3-17.
Sfard, A. (1998). "On two metaphors for learning and the danger of choosing just one." Educational Researcher **27**(2): 4-13.
Shamim, F. and R. Qureshi (2013). "Informed consent in educational research in the South: tensions and accommodations." Compare: A Journal of Comparative and International Education **43**(4): 464-482.

Sivesind, K. H. (1999). "Structured, Qualitative Comparison Between Singularity and Single-Dimensionality." Quality & Quantity **33**(4): 361-380.
Stetsenko, A. (2005). "Activity as Object-Related: Resolving the Dichotomy of Individual and Collective Planes of Activity." Mind, Culture and Activity **12**(1): 70-88.
Stetsenko, A. and I. M. Arievitch (2004). "The Self in Cultural-Historical Activity Theory: Reclaiming the Unity of Social and Individual Dimensions of Human Development." Theory and Psychology **14**(4): 475-503.
Stetsenko, A. and I. M. Arievitch (2004). "Vygotskian collaborative project of social transformation: History, politics, and practice in knowledge construction." The International Journal of Critical Psychology **12**(4): 58-80.
Strauss, A. L. (1987). Qualitative Analysis for Social Scientists. Cambridge, Cambridge University Press.
Streeck, W. (1991). On the Institutional Conditions of Diversified Quality Production. Beyond Keynesianism: The Socio-Economics of Production and Employment. E. Matzner and W. Streeck. London, Edward Elgar**:** 21-61.
Sturgeon, T. (2002). "Modular Production Networks: A New American Model of Industrial Organization." Industrial and Corporate Change **11**(3): 451-496.
Taylor, C. (1989). Sources of the Self. Cambridge, Cambridge University Press.
Taylor, P. and P. Urwin (2001). "Age and Participation in Vocational Education and Training." Work, Employment & Society **15**(4): 763-779.
Taylor, P. and A. Walker (1998). "Employers and older workers: attitudes and employment practices." Ageing and Society **18**(6): 641-658.
Thompson, P. (1983). The Nature of Work: An Introduction to Debates on the Labour Process. Basingstoke, Macmillan.
Thompson, P. and C. Warhurst, Eds. (1998). Worplaces of the Future. London, Macmillan.
Tikkanen, T. (2006). The lifelong learning debate and older workers. Promoting lifelong learning for older workers. An international overview. T. Tikkanen and B. Nyhan. Luxembourg, CEDEFOP**:** 18-47.
Tikkanen, T., L. C. Lahn, et al. (2002). Working life changes and training of older workers. Oslo, Trondheim, VOX - Forskningsavdelingen.
Tikkanen, T. and B. Nyhan, Eds. (2006). Promoting lifelong learning for older workers. An international oveview. Cedefop Reference series. Luxembourg, Cedefop.
Tolman, C. W. (2001). The Origins of Activity as a Category in the Philosophies of Kant, Fichte, Hegel and Marx. The Theory and Practice of Cultural-historical Psychology. S. Chaiklin. Aarhus, Aarhus university press. **22:** 84-92.
Valsiner, J. (1998). The Guided Mind. A Sociogenetic approach to Personality. Cambridge, Massachusetts; London, England, Harvard University Press.
Valsiner, J. (1998). Semiosis and Methodology: Implications for Psychological Research Practices. The Guided Mind. A Sociogenetic approach to Personality. J. Valsiner. Cambridge, Massachusetts; London, England, Harvard University Press**:** 285-323.
Victor, B. and A. C. Boynton (1998). Invented here. Maximizing Your Organization's Internal Growth and Profitability. Boston, MA, Harvard Business School Press.
Vygotskij, L. S. (1999). Tool and Sign in the Development of the Child. The Collected Works of L. S. Vygotsky. Scientific Legacy. R. W. Rieber. New York, Klumer Academic / Plenum Publishers. **6:** 1-68.

Walker, A. and P. Taylor (1998). Combating Age Barriers in Employment: A European Portfolio of Good Practice. Dublin, European Foundation for the Improvement of Living and Working Conditions.
Warr, P. and K. Birdi (1998). "Employee age and voluntary development activity." International Journal of Training and Development **2**(3): 190-204.
Webster, F. (2002). Theories of the Information Society. New York, Routledge.
Wenger, E. (1998). Communities of Practice. Learning, meaning and identity. Cambridge, Cambridge University Press.
Wertsch, J. V. (1998). Mind as Action. New York, Oxford University Press.
Whitford, J. and J. Zeitlin (2002). Governing Decentralized Production: Institutions, Public Policy, and the Prospects for Inter-Firm Collaboration in US Manufacturing, University of Wisconsin-Madison.
Whitford, J. and J. Zeitlin (2003). Governare la produzione decentrata: istituzioni, politiche pubbliche e prospettive per la collaborazione inter-aziendale nell'industria americana. Impresa senza confini. Percorsi, strategie e regolazione dell'*outsourcing* nel post-fordismo maturo. G. Bonazzi and S. Negrelli. Milano, Franco Angeli.
Wilkinson, F. (1983). "Productive systems." Cambridge Journal of Economics **7**(3/4): 413-429.
Wilkinson, F. (2003). Productive systems and the structuring role of economic and social theories. Systems of Production. Markets, organizations and performance. B. Burchell, S. Deakin, J. Michie and J. Rubery. London, Routledge**:** 10-39.
Withnall, A. (2006). "Exploring influences on later life learning." International Journal of Lifelong Education **25**(1): 29-49.
Withnall, A. and K. Percy (1994). Good Practice in Education and Training of Older Adults. Aldershot, Arena.
Womack, J. P., D. T. Jones, et al. (1991). La macchina che ha cambiato il mondo. Milano, Rizzoli.
Womack, J. P., D. T. Jones, et al. (1990). The machine that changed the world, Rawson Associates&Macmillan
Wood, S. (1989). "The japanise Management Model." Work and occupations **4**.
Wood, S. (1989). The Transformation of Work? Skill, Flexibility and the Labour Process. London, Unwin Hyman.
Wood, S. (1991). "Japanisation and/or Toyotaism?" Work, Employment & Society **4**.
Yin, R. K. (2003). Case Study Research. Design and Methods. Newbury Park, Sage Publications.
Young, M. (2004). Conceptualizing vocational knowledge. Workplace learning in context. H. Rainbird, A. Fuller and A. Munro. London, Routledge**:** 185-200.