

RECENT CHANGES IN THE WORLD OF WORK

HÉLÈNE DAVID

Groupe de recherche sur les aspects sociaux de la santé et de la prévention (GRASP)
Université de Montréal, POB 6128, Station Centre-ville, Montréal, Québec, Canada, H3C 3J7
helene.david@umontreal.ca

Abstract

In the last decade or two, the speed of change in the workplace has increased. The relative weight of various employment sectors has significantly evolved. At the same time, industrial and service work have become more similar than ever before, while separate employment statuses have created significant new internal differences. In addition, power relationships in organizations are more difficult to identify. It is important to go beyond the unease generated by these changes among work science specialists in order to question and understand the capacities of our own tools.

INTRODUCTION

Confronted with recent changes in the world of work, work science specialists are not only trying to gather the most up-to-date information but also to understand why these changes are happening. Indeed, these changes have led the specialists to seriously examine their own professional practice. This rather destabilizing examination raises doubts about the validity of many of our work tools (concepts, perceptions, diagnostic capacity, analysis framework, methodology, delimitation of the discipline and its object, etc.). An intellectual research for meaning in these conditions thus also has affective and ethical components.

When I was invited to give this conference, I had just read an interview with Antoine Laville in the revue *Pistes* (2000). I was deeply touched by the confession of this renowned pioneer of ergonomics who, rather than resting on his laurels at the time of his retirement, dared to say, "*I'm no longer sure*". I am grateful to him for having had the courage to say out loud what many of his colleagues face all alone and with some difficulty.

What exactly did he say that can help younger and older researchers alike who are following in his footsteps to ask the right questions? He said, "*I no longer understand the current changes in the work world nor the social forces within companies. I am no longer sure [...], it's all beyond me [...]. I no longer have any references to develop new analyses. I used to understand the relationships of power within companies [...]. Now... I no longer know where work condition problems are discussed [...]. The rules of the game have changed and I don't follow them that well any more.*"

The sociologist Edgar Morin, in his work *Les sept savoirs nécessaires à l'éducation du futur* (2000, the seven types of knowledge for an education for the future), encourages us not to look too quickly for technical responses to our doubts about our knowledge and practices. In his opinion, now that history and the scientific discoveries of the 20th century have taught us that there is not an impeccable order to the universe, we should focus on the "dialogic between order, disorder and organization." It then becomes essential to identify and acknowledge the uncertainties that humanity must face. Morin believes that there are three fundamental uncertainties that the human mind must confront and against which it must toughen itself:

- the uncertainty of knowledge
- the uncertainty of reality
- the uncertainty of an action and its transformations through multiple interactions

It is important to keep these three uncertainties in mind when we examine the major changes in the world of work because they raise enormous questions about both research and social transformation.

This is why I do not think I can talk to you about recent changes in the world of work without mentioning the effect that these doubts have on us. I say "we" because these changes make interdisciplinary cooperation more urgent than ever (David et al., 2000) among work science professionals (practitioners, professors, researchers), since, as Salomon-Bayet has stated (1992) scientific advances often occur at the interface between disciplines. These changes thus concern all of us. I would also say "you" as ergonomists, because I would like to talk to you about the importance of considering the social relationships of work when conducting ergonomic analysis. What is more, this is also a very relevant example of beneficial interdisciplinarity.

Main Changes in the World of Work¹

The Evolution of Employment Sectors and Technology

Main Employment Sectors

Remarks about the major changes that are taking place in the very economic structure of advanced industrialized countries have become commonplace. They are nonetheless necessary if we are to determine their importance and consequences. According to the OECD (1997), the tertiary sector now represents 60 to 74% of jobs in G-7 countries, whereas the secondary sector now only accounts for approximately 28%. However, the decline in industrial work will not necessarily continue. According to analyses of the emergence of this new type of development, the manufacturing industry, which has been strongly affected by technological changes, is essential to productivity. As for the primary sector, which now only employs 2 to 4% of the workforce, it is increasingly subject to the production standards of downstream industries and integrated into the latter (Castells, 1998; Pinard, 2000).

Analysts predict that a certain number of tendencies that are transforming the structure of work will continue well into the 21st century. Castells has identified the following:

- the progressive elimination of agriculture
- the regular decline of traditional industrial work
- the expansion of services provided to companies (especially business services) and social services (especially health)
- the growing diversification of work in new service activities
- the rapid multiplication of managerial, specialist and technical positions
- the creation of a proletariat of white-collar workers made up of office and sales employees
- the relative stability of a substantial proportion of jobs in the retail trade
- the simultaneous growth of the upper and lower levels of the professional structure
- the relative raising of the overall level of the professional structure over time

¹ For more details, see David et al., (2001)

The changing weight of certain sectors affects different work-force categories in different ways depending, for example, on their age and sex. Thus, the decline in the manufacturing industry, whose workforce is relatively older and mostly male, is seen in the closing of complete industrial branches, collective layoffs or early retirements. In the service sector, which is undergoing strong growth, the workforce is much younger and the jobs are held, for the most part, by women.

Technological Changes

Changes in the working world are associated with the introduction of new technologies and the greater role that they play. According to Kumar (2000), recent data in Canada and the United States indicate that the current wave of changes started in the 1980s and accelerated during the following decade. More widespread in the manufacturing industry, they are associated with numerical and functional flexibility such as a reduction in manpower, sub-contracting and temporary work. These new work and management practices currently affect a third to half of the companies.

The most recent surveys carried out in Canada (Statistics Canada, 1998; Ekos, 1998; Kumar, Murray, Schetagne, 1998) reveal that more than a quarter of the companies admitted having reduced their personnel, modified their work organization and turned to functional flexibility, changes that had affected more than half of their personnel. Moreover, more than 20% of all the surveyed companies declared that they used sub-contracting and flexible hours. These practices are more common in big companies. Thus, 60 to 80% of these companies had implemented some form of numerical flexibility, in particular part-time or temporary work and overtime work.

Certain surveys conducted in Canada with workers and unions indicate that 90% of them have been affected by these changes. According to Kumar, Murray and Schetagne (1998), innovative practices such as functional flexibility are generally associated with better salaries and social advantages as well as with greater unionization. On the other hand, numerical flexibility is linked to lower salaries.

In France, computerization had already affected half of the country's employees in 1991. Gollac and Volkoff (1996) affirm that it has reduced the strenuous nature of manual tasks but has not reduced the risks and, furthermore, has added mental constraints. According to the last survey on work conditions in France (1998), automation now affects a third of workers, whatever the sector. Likewise, in addition to adding new constraints, it has neither reduced the burden nor the risks of tasks.

Such situations further aggravate certain issues already raised by the demographic profile of the workforce. Indeed, in the current economy, the increased importance of knowledge (Touraine, 1999) contributes to pitting different generations against each other due to substantial differences in training. Certain analysts (Carnoy, 2000; Castells, 1998) consider that much of the responsibility falls on governments and various social actors given that the development of new ways of transmitting knowledge has been a long time coming.

The Importance of Services

The fact that the proportion of service sector jobs, as compared to the production sector, is rising does not mean that burdensome work is disappearing. As early as 1991, a French survey of work conditions found that half of service sector employees said that they had to carry heavy objects, a third of client service employees stated that they had to maintain

onerous positions and 20% stated that they had to meet time span production standards of less than one day.

These data have led certain observers to note that there is an increasing hybridization between blue-collar work in the secondary sector and the tasks and supervision of service sector work. There is an increasing amount of physical difficulty, temporal pressure and industrial standards in work where, before, all that existed was the direct contact with the client. In many service sector jobs it has become difficult to distinguish between physical and mental work since their tasks often require both (Gollac and Volkoff, 1996).

Poorly Understood Issues in the Service Sector

Up until recently, work sciences, which were primarily developed through the study of major industries, treated the tertiary sector and service jobs as an undifferentiated residual whole. The growth of this type of work, which will continue, makes it urgent to undertake observational and analytical studies so as to develop a conceptual base with which we can distinguish between the different types of jobs and tasks (Offe, 1995; Castells; 1998; Pinard, 2000).

Among the first economic and sociological analyses of the evolving information society, certain authors have proposed making a distinction between distribution services (trade, communications, transportation), company-oriented services, social services that involve collective consumption (most often governmental) and, finally, personal services that involve individual consumption (Castells, 1998). Others have underlined the importance of reflexive work that involves a user who is present at the time of the work activity and who is, as such, a component of the work activity (Offe; 1985; Maheu and Robitaille, 1991). Certain ergonomists have begun trying to characterize the tasks of service sector jobs when there is a service relationship between an operator and a user cum partner (Falzon and Lapeyrière, 1998). This is the case for a very high proportion of these jobs, in particular those held by women. Nonetheless, these studies, which are added to research on very specific areas and jobs, are still quite unable to draw a good portrait of the current situation and identify the issues that characterize work in these new sectors.

Body Relationships in the Service Sector

The presence of users is quite frequent in the service sector. This presence raises the question in work activities of the relationship between the body of the worker and that of the user. From the outset, this question must be treated differently than when the work activity is defined primarily as a relationship between a person and a machine or equipment and the body is seen essentially from a biomedical point of view. When a body is in a work situation where a service is being provided to a user who is present, it becomes immediately necessary to consider the network of social and interpersonal relationships involved. In particular, gender-based social relationships affect what is and is not possible in the use of one's own body and the relationship with that of the other (Molinier, 1996).

One story of a centre for battered women provides an extreme example (Saranovic, 2000) that sheds light on a few of these dimensions. A work psychologist, who was asked to act as a mediator for social workers who were having difficulties in their work and were showing signs of burnout, expressed her utter disarray. Her uneasiness began when she first showed up at the centre to meet with the social workers and was mistaken for a client, that is a battered woman. Being identified as a battered woman because of or despite her bodily

appearance or clothing destabilised her greatly. This rather painful experience made her more sensitive to several signs of disorder in the centre. This was particularly surprising on the part of women who had been taught from the beginning to be responsible for order in their lives (sanitary conditions, safety in a violent context, appearance). This work psychologist felt the same symptoms evoked by the social workers, that is apathy, sadness, panic attacks, sleepiness, rejection of housework, loss of pleasure in getting dressed up or putting on makeup. She was unable to complete her consulting work. She developed the hypothesis that these symptoms expressed the social workers' inability to assume their sexual identity for fear of being mistaken for their clientele. She compared this situation with the preceding situation when the work was accomplished by feminist volunteers. These volunteers used a gender relationship analysis, that is an analysis of male/female power relationships, and proclaimed, "we are all battered women." However, they were not afraid that they would identify themselves with their clientele since they considered that being a victim of marital violence is the result of a dominant relationship that can be transformed, and not of the fact of being a woman.

Though less pronounced, such ambiguities likewise arise in health and hygiene care work in which the dedication of women is still common (Cloutier et al., 1999; David et al., 1999). Thus, nurses and home-care workers find it difficult to consider certain affective tasks, namely those that encourage a patient to cooperate with them, as being part of their professional work. These tasks involve a body-to-body relationship that can be difficult, risky and long according to the characteristics of the person receiving them. The degree of patient cooperation that the employees generate thus directly affects their own body at work, influencing the heaviness of the tasks and the risk of accidents. Because they overlook these tasks, they work extra hours without asking to be paid. Such individual and collective strategies, based on a gender identity that arises out of social relationships, indirectly leads us to think of male workplaces where the social construction of gender identity is based on other defensive strategies, such as the denial of suffering.

This is well illustrated by the account of a female psychoanalyst who talks about a construction worker whose hand injuries, after a fall that could have been fatal, kept him momentarily from working (Pezé, 1998). Because his injuries were slow to heal, new medical treatment was given, and to help the worker stay calm, the psychoanalyst and an aid held his hands. This provoked a decompensation in the worker, allowing his suppressed fears to come to the surface. It was expressed as an intense somatization and the desire to flee. The analyst saw this as a catch-22 in which the worker's fear kept him from returning to work because he was no longer able to participate in the denial mechanisms developed by his male work group. He knew he would be excluded because he had become a threat to the effectiveness of the collective defensive strategies. He thus needed to conserve, at all costs, his injured worker status, which required the expression of physical symptoms that denied the presence of fear, while all the while undermining his male identity.

Such situations emphasize both the importance of the body relationship in work and the lack of conceptual and methodological tools to analyse it. Interdisciplinary cooperation among ergonomics, sociology and the psychodynamics of work, in particular, could develop this area as a major research object and produce some quite fruitful results. As the sociologist Berthelot (1992) underlined, the body is always the sign of other things than itself.

COMPANY MANAGEMENT METHODS

Employment

According to certain observers, we are not seeing the end of work as such but rather the end of a way of structuring professional and non-professional activities (Mercre and Dubé, 1997; Kumar, 2000). This new structure is characterized by the plurality and diversification of job statuses. The wide variety of job temporal structures would seem to be attributable to production variability that leads to the temporal framing of occupational activities (OCDE, 1997; Thommens, 2000). It is not only the temporal standard, namely the work day and week, that is being contested, but also those of the work load, pay and conditions associated with guarantees and rights (Payeur, 1998). The collapse of these standards leads to payment modes that are now based on the market (Castel, 1998).

Furthermore, within a given company, the increased precariousness of jobs creates different work conditions among different groups of personnel. These more difficult conditions would seem to favour regular, often older, personnel. In fact, however, the conditions in which those with more precarious job status accomplish their work impacts on the work of regular personnel since this precariousness makes the accomplishment of a work activity more complex for all involved (Huez, 1996). Precariousness can also make it more difficult for work teams to cooperate and help each other and even stir up conflicts among these teams (Beaud and Pialoux, 1999).

Risk of occupational injury also differs according to employment status (François, 1993; François, Liévin, 1993; Thébaud-Mony, 1993). French researchers (Huez, 1996) have found that because it breaks up the occupational path, precariousness reduces social support and work latitude, which results in an accumulation of negative effects on physical and mental health. Moreover, precariousness in companies eliminates any trace of wear and tear due to work because it reinforces mechanisms of selection and job-market exclusion that are based on age and health. Indeed, prevention strategies are often replaced by the transfer of certain occupational risks from stable work groups to precarious-status employees and sub-contracting companies (Thébaud-Mony, 1993, David et al., not yet published).

Human-Resource Management

Earlier attempts to transform market fluctuations into more regular production cycles have now been replaced by strategies through which company managers pass these fluctuations on down to the bottom of the hierarchy and manage them with refined human relation techniques based on the participation and involvement of employees (Kumar, 2000). Changes to control mechanisms, such as quality circles or procedural autonomy (often associated with participatory management or self-managed work teams) might seem to correspond to an improvement in work conditions. This is not always the case, however, when new forms of competition simultaneously apply constraints to the work rate. By associating procedural autonomy with time constraints, the managers relieve themselves of contradictory "choices" and impose them on the employees. This was observed in a workshop that used tight-flow operation principles that also simultaneously imposed ISO quality standards (Lefebvre, 1996).

Methods used to justify "work flexibility" prove to be necessary to ensure the proper functioning of these new arrangements and to have them accepted. Complex sets of standards for occupational and extra-occupational behaviour are often set up by senior company management so as to instil new cultural standards within the company. In particular, these standards deal with company loyalty, acceptance of its values and

objectives, participation, temporal availability and personalized productivity control in a context of "excellence".

Work

In a context of an ever more capitalist production system, one of the problems that persists in all of these changes to the work world is task intensification. "Just in time" inventories, demand pressure, tighter control of individual and collective productivity, and the search for operability with the minimum number of employees represent the new methods that have brought about this intensification (Pialoux, 1996).

The data of a 1991 French study of work conditions showed how demand pressure and the scientific organization of work have amplified already existing temporal constraints and spread these constraints to other areas such as services where they did not previously exist. We are currently witnessing an increase in the complexity of work requirements. This growing complexity leads to multiple physical and cognitive constraints with which the labour force must deal to carry out its work in an effective and safe way (Gollac and Volkoff, 1996).

The results of studies conducted with Canadian unions and their members likewise indicate that workers generally feel that there has been a deterioration in the quality of life in the workplace. In particular, workers note a loss of control and independence and an increase in work loads and rate, in physical and affective stress, and in concerns about occupational health and employment. These changes are linked to numeric and functional flexibility practices. At least half of the respondents stated that they were tense and had little control over their work. Forty per cent felt that they had an excessive work load and just as many felt they had to work in uncomfortable positions at least half of the time. Finally, a third of the respondents stated they had to work to quickly and the same proportion said they felt pain during at least half of their working hours (Kumar, 2000).

The lower are one's qualifications and one's job in the company hierarchy, the lower one is on the social ladder and the greater one's job constraints. Studies have shown for a long time now that the effect of such constraints can contribute to the exclusion of large population segments from the work force, primarily because of work injuries, occupational dequalification and age. This phenomenon is increasing (Teiger, 1989 and 1995).

Certain research conducted in the French metallurgy industry has shed light on the effects of the intensity of work constraints and has found a link with union difficulties to get personnel to participate (Lefebvre, 1996). There has been a strong decrease in the interest for union initiatives and the social rituals of workers that contribute to social cohesion. This decrease would seem to be attributable to fewer rest-time choices, the irregularity of work schedules and the growing precariousness of employment but not to a decrease in the role that work plays in the workers' lives. Simpson (1999) has noted the same tendencies in the United States. Traditional forms of unionism would seem to have lost their effectiveness and are being renewed with some difficulty. Fortunately, new forms of resistance in the struggle to obtain collective rights for those excluded and improve their work and employment conditions are appearing (Payeur, 1998; Fontan and Klein, 2000).

Indeed, in the debate on the future of work that divides this research sector, certain researchers point out that the effect of the emerging information society and the increased role of technology is to make work problems more central than before (Bidet and Texier, 1995; Freyssenet, 1995). The central role of work as a way of making oneself a free, independent person is in contrast to the market and competitive rational. The demands for

independence, continuity and the negotiated definition of work rules are opposed to flexibility and production requirements (Castel, 1998; Pez , 1998; Touraine, 1999).

DEMOGRAPHIC CHANGES IN EMPLOYMENT

There are four major demographic tendencies that are currently occurring in the workforce, namely: the ageing of society in general and therefore of the workforce, the narrowing of the age pyramid of the workforce, greater education among young people, and the feminization of the workforce. These tendencies are likewise affecting the world of work.

An Ageing Society and Workforce

The ageing of the workforce is a major tendency in all advanced industrialized countries. The proportion of older workers has started to grow and will continue to do so for some time (for France: Molini , 1995; Molini  and Volkoff, 1995; for Qu bec: L gar  and Martel, 1996). The effect of the post-war baby-boom that continued into the early sixties explains a large part of this phenomenon, as does the strong decrease in birth rate immediately following this period. Nonetheless, the workforce is also beginning to age, even though for the moment it is still younger than the society as a whole due to different closure and expulsion mechanisms in the labour market (David, 1990).

This ageing of the society and the workforce gives rise to some concerns about an increase in social costs. It also represents fertile soil for negative perceptions about retired or elderly people in terms of weaknesses and excessive costs. At the same time, there is also a contradictory and growing negative social perception about older people who continue to work, even though they help decrease social costs (Teiger, 1995).

Greater Education among Young People

Demographic effects are not the only ones to modify the age structure of the workforce. Two other factors contribute to the low proportion of young people in the workforce, namely the tendency to stay in school longer and their career entry difficulties (Molini , 1995). The growing number of years accorded to education is a long-term tendency linked to industrialization. Education's importance is increasing even more in the new information economy. A country's share of the international division of work, as a function of networks and the cycles that all countries undergo, increasingly depends on the characteristics of their workforce, in particular its knowledge level, which means that education and training have taken on an even greater role for younger generations (Molini , 1995; Castells, 1998; Kumar, 2000).

This longer education of young people, in an economic context where managers look for numerical flexibility and a more qualified workforce, also creates conditions that foster the heightening of inter-generation tension and conflicts, greater exclusion of ageing personnel and a justification for this exclusion (Beaud and Pialoux, 1999).

The Narrowing of the Workforce Age Pyramid

The participation rate in the workforce of different age groups is heavily influenced by the decisions of company management who have the power to hire and fire, as well as by the implementation of certain government policies. In the case of ageing personnel, their expected growth in the workforce is countered by a high rate of early expulsion from the labour market.

For several decades now, the combined effect of public and private policy has encouraged a strong proportion of older generations to definitively leave the job market earlier than preceding generations (Choffel, 1994; Statistics Canada, 2000). According to McDonald (1994), the desired retirement age in Canada is now 58, which is appreciably lower than the average age at which employees currently retire, that is 62. This phenomenon, as well as the low hiring rate of young people, cuts the workforce age pyramid at both ends, and consequently narrows the pyramid around average age brackets. Nonetheless, the average age of personnel continues to rise (Guillemard, 1995; Molinié, 1995; BSQ, 1998). This narrowing of the workforce age pyramid, due particularly to massive retirements, causes a considerable loss of skill and know-how.

Feminization of the Workforce

In advanced industrialized countries, the activity rate of women from 25 to 45 years old is now between 70 to 75% (BSQ, 1998; Eurostat, 1997). This rate is increasingly similar, in its level and variations according to age, to that of men. However, though this workforce feminization is a fact, the sexual division of employment and work is not disappearing, despite a reduction in certain differences in employment and work conditions. Women are likewise more vulnerable to unemployment, under-employment and precariousness (Maruani, 1995; Payeur, 1998).

Above all, it is among women with children that the activity rate has undergone the most spectacular rise (BSQ, 1998). This change has contributed greatly to the service sector since these services often replace, in the public and private sector, the work these women did within their own families. Many women are also employees in this sector. It is largely due to this spectacular rise in the activity rate of women that the growth rate of the workforce is higher than that of the society (David, 1990).

POLICY (PRACTICE AND IDEOLOGY)

POLICIES AND PRACTICES

When globalization is considered as the intentional expression of private interests and those of the governments of several countries and not as an exogenous factor that imposes constraints on Nation States, it becomes obvious that the governments of national States play an important role in the different forces guiding the major changes in the world of work (Théret, 2000). There are convincing data that indicate that technological changes do not determine the future of work and employment. For instance, certain comparisons of G-7 countries clearly indicate that the unemployment rate and the occupational structures in these different countries are more associated with the social forces in place, the institutional apparatus and the historical traditions rather than with the penetration rate of new technologies (Castells, 1998).

Indeed, the rupture of the social pact of the different national systems takes on various configurations that emphasize the abandonment of universality, the deregulation of salaries, a weakening of job protection or the maintenance of social gains, all of which weaken the position of those arriving on the job market (Esping-Andersen, 1996). The ineffectiveness of labour legislation with regard to precarious employment is notorious. Furthermore, pressure by management on government authorities to create the greatest possible flexibility in order to maximize profits has often led to the undermining of labour legislation through the enacting of reforms. Castel (1998) believes that the right to work could be reinforced so that it may continue to play an important role in the social regulation of work relations.

However, the opposite situation currently prevails. According to several analysts, the current weakness of unions contributes to the fact that employees can no longer effectively oppose the deterioration of their work conditions. In many countries, this erosion is partly due to the active intervention of the State which is deregulating the legislation that protects the standards for work, employment and markets at the same time that it is dismantling social programs.

Ideology

A very articulate, incessantly repeated ideology is accompanying the dismantling of the welfare State and the State's deregulation of the market. We find, on the one hand, a criticism of this type of State whose economic interventions supposedly impede the private initiative of companies and bias competitive rules by unduly supporting companies that should not survive. On the other hand, as concerns the workforce, this ideology justifies the reduction and abolishment of certain income security measures. These measures are contested because they are believed to encourage citizens to be passive and too dependent on the State. This ideology also praises individual independence and calls for standards of individual responsibility that citizens should adopt at work and during retirement.

Just as in the work world, changes to the State are accompanied by a discourse that attempts to justify them. As concerns ageing personnel, for instance, the current discourse focuses primarily on retirement. Even though, at the moment, retirement is still considered to be the right to a stage in life between working life and advanced old age, it is nonetheless increasingly presented as a duty that we must not delay in fulfilling for the sake of intergenerational equity. The possibility to choose the time and conditions of one's retirement is thereby often reduced.

Analysts such as Bidet and Texier (1995), Freyssenet (1995), Castel (1998) and Touraine (1999) believe that it is important to try to regulate the market and its attempts at hegemony in order to re-tame it, given that employment and work remain a major issue for the whole workforce.

THE EFFECTS OF CERTAIN CULTURAL CHANGES ON THE WORLD OF WORK

If this sketch is to be complete, it would be necessary to describe certain cultural changes whose influence is being felt in the world of work. I will only mention one, albeit important, namely the re-emergence of the Faustian ideology of the body. In a desire to push disease and other incapacities further back, biotechnology, genomics and the revolution of living beings have advanced towards horizons that were unthinkable only a short time ago. However, there is no purely "natural" (biological, physiological, anatomical) reading of the body since the body does not exist outside of its human and social relationships (Foucault, 1975). Indeed, these scientific breakthroughs do not only raise the issue of their uses, but likewise the displacement of ethical frontiers because they simultaneously re-activate a post-humanity Faustian ideology (Viveret, 2000). Fukuyama (1999), already well-known for his ideas about the end of history, is very clear on this point. He believes that the expansion of biotechnology "*will give us tools that will allow us to accomplish things that social engineering specialists did not succeed in doing. At that point in time, we will have definitively finished with human history because we will have abolished human beings as such.*"

The influence of the myth of perfect and eternally young bodies through the use of different genetic treatments is particularly dangerous in the work world where bodies are already

shamelessly used. The belief in the possibility of a constant maximal performance will be further reinforced, thereby bringing the myth of excellence, so dear to managers' hearts, closer to reality. This will risk accentuating the already present gap between these imperatives and the personal histories of the workers and their bodies. Moreover, the possibility of genetically selecting employees for these purposes already exists. All of these possibilities are developed within the ideology of personal responsibility. New areas of struggle should be developed in the world of work around these issues that touch the very future of humanity.

CONCLUSION

More than one conference could easily be dedicated to the consequences that these major changes in the world of work have on research practices and findings. This is, moreover, one of the goals of this conference, and it is both relevant and necessary. It seems to me, however, that the scale of the changes in question will require much more. A sustained and structured examination on the part of scientific researchers and decision makers in work sciences is necessary. It is urgent to critically examine our current research objects and directions so as to evaluate their suitability with regard to the new issues raised by changes to the work world and their importance in this context of great uncertainty. Given that there is no stable environment, Edgar Morin (2000) believes that we must avoid the error of developing and applying programs that involve execution without variation. Rather, he proposes applying a strategic approach that will not be paralyzed as soon as the execution conditions change. In Morin's opinion, this means the development of "scenarios that examine a situation's certainties and uncertainties, its probabilities and improbabilities".

In the same vein, it would seem to me to be equally necessary to measure the consequences on researchers and practitioners of calling into question their knowledge and practices, in particular through:

- the creation and recognition, in our work environments and professional interactions (universities, research institutes, company departments, professional associations, research networks, publications, subsidy organizations, etc.), of the time and place needed to reflect on the predicaments before us;
- activities towards this end that are sufficiently flexible and open-ended so that concerns and questions will not be suppressed for the sake of short-term efficiency;
- discussions and research that examine questions that cannot be explained in the short-term by supposed technical and methodological certainties;
- examination of the contribution of interdisciplinary practices.