Psychological health

Studies and Research Projects

REPORT **R-585**

The meaning of work, mental health and organizational commitment

Estelle Morin

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Legal Deposit
Bibliothèque et Archives nationales
2008
ISBN: 978-2-89631-313-6 (print format)
ISBN: 978-2-89631-314-3 (PDF)
ISSN: 0820-8395

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Institut de recherche Robert-Sauvé
en santé et en sécurité du travail,
October 2008

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This study was financed by the IRSST. The conclusions and recommendations are those of the authors.

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Executive Summary

This project seeks to determine the factors related to the meaning of work that have an impact on mental health in the workplace and organizational commitment. The expected results are used to verify the relationships between the factors of meaning of work, mental health and organizational commitment and recommend actions to correct or improve the factors that affect the meaning of work. The following hypotheses were tested:

1. The following work characteristics are positively correlated to each other: social purpose, moral correctness, learning and development opportunities, autonomy, recognition and positive relationships.
2. The 6 characteristics are positively correlated to the meaning of work.
3. The meaning of work positively influences psychological well-being.
4. The meaning of work negatively influences psychological distress.
5. The meaning of work positively influences affective organizational commitment.

The research presented here was conducted in 4 different organizations: a Hospital Centre (2001-2003; 262 subjects), a Health and Social Services Centre (CSSS) (2006-2007; 955 subjects), an Agricultural Research Centre (2005-2007; 101 subjects) and an Engineering Firm (2006-2007; 305 subjects). Except for the Engineering Firm, the other organizations included unions. This is applied research, which involves several advantages, but also has to overcome several difficulties. Applied research has the advantage of improving the understanding of specific and concrete problems, and determining realistic solutions to these problems.

A Consultative Committee was formed upon initiation of the project in each organization to assume the functions of consultation and liaison between the research team and the personnel. This was a participatory survey involving three stages: pre-survey, survey and the feedback meeting.

Except for the first survey, which was conducted in a Hospital Centre, the survey questionnaire was divided into two parts, with the second administered three weeks after the first. This procedure has the advantage of controlling the effect of common variance between the independent and dependent variables. The first part of the questionnaire contains questions and scales essentially evaluating work, working conditions and interpersonal relations among employees. The second part makes it possible to evaluate organizational commitment and involvement, psychological well-being, psychological distress, and perception of physical health.

The first part of the questionnaire contains the following scales and questions:

- Representations of work (15 statements, 6 points, *MOW International Research Team*, 1987)

- Characteristics of meaningful work (26 statements, 6 points, Morin & Dassa, in preparation)
- Physical, mental and emotional workload (12 statements, 6 points, Morin, 2002)
- Description of the work schedule, its impacts on sleep and work-life balance (SSI, Barton & al. 1993)
- Recognition (effort and reward balance, 10 statements, 6 points, Siegriest, 1996)
- Perception of justice (18 statements, 6 points, Moorman, 1991)
- Perception of the relationship with an immediate superior (LMX) (7 statements, 5 points, Graen & Uhl-Bien, 1995)
- Supervisory behaviour (40 statements, 5 points, Rousseau & Aubé, 2005)
- The meaning of work (6 statements, 6 points, May, Gilson & Harter, 2004)
- Questions allowing information gathering on the respondent and his/her job.

The second part includes the following scales and questions:

- Empowered behaviours (19 statements, 10 points, Boudrias & Savoie, 2006)
- Meaning of work (6 statements, 6 points, May, Gilson & Harter, 2004)
- Forms of organizational commitment (18 statements, 6 points, Meyer & Allen, 1993)
- Significant life events (20 statements, yes, no, not applicable, Dohrenwend, 1973)
- For the Hospital Centre and the Agricultural Research Centre
    - The Psychiatric Symptoms Index - PSI (14 statements, 4 points, Ilfeld, 1976)
- For the CSSS and the Engineering Firm
    - The EMMDP indicator of psychological distress (23 statements, 5 points, Massé & al., 1998)
    - The EMMBÉP indicator of psychological well-being (25 statements, 5 points, Massé & al., 1998)
- General health perception - GHP (5 statements, 6 points, Bjorner & Kristensen, 1996)

Following correlation analyses performed on the 4 data sets, all these hypotheses were retained. The linear regression analyses pinpointed the determining effects of recognition and the meaning of work, both on mental health and affective commitment, as well as the mediating effect of the meaning of work in the relationship among the characteristics of work, mental health and affective commitment. It is interesting to observe that social purpose and learning and development opportunities are two factors that have a significant effect on the meaning of work. Also, we must mention the effect of the “moral correctness” factor on employees’ affective commitment. Based on these results, a theoretical model is proposed to orient future research in this field.

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Introduction

What is work and what makes it meaningful? It must be admitted that we have never really posed the problem of work within the context of human existence; we have mainly addressed the problem of employment in an economic and sociological perspective. But we must recall what Sigmund Freud affirmed: work, like love, is a vital necessity to the development of the individual and of democratic society. Its scope is material, social, economic, psychological, psychic and biological. It is time to take a serious interest in work and what work activity means to the existence of individuals.

Work is a concept that has several definitions. Brief and Nord (1990) maintain that the only element that reconciles its multiple meanings is a **purposeful activity**. Generally, work is defined as an expenditure of energy through a set of coordinated activities intended to produce something useful (Firth, 1948; Fryer and Payne, 1984; Shepherdson, 1984). It can be pleasant or unpleasant, and it can be associated (or not associated) with economic exchanges. According to the interviews conducted by Fryer and Payne (1984), work is a useful activity, determined by a definite purpose beyond the pleasure engendered by its performance.

Employment is an individual's occupation defined by a set of rewarded activities in an economically organized system. According to Fryer and Payne (1984), employment involves institutionalized exchange relationships. Employment is also associated with a reward in the form of pay. It often involves the employee's consent to allow someone else to dictate the nature of his work and how to perform it.

Firth (1948) maintains that work must not only involve relationships based on technical and economic requirements, but must also involve relationships based on the human and social necessities without which the healthy development of society is jeopardized. Indeed, the character of the relationships individuals maintain has a significant effect on their decision to engage in their productive activity and the quality of their production.

Brief and Nord (1990) arrive at the same conclusions: if work is defined solely as an activity the individual performs to earn pay, this has harmful consequences, both personally and institutionally. Moreover, this restriction of the meaning of work to its economic aspect engenders or reinforces the contractual relationships between the individual and the employer organization, conferring importance on remuneration to the detriment of the spirit of service and community. It also devalues unpaid activities, such as volunteerism and housework; since these are no longer considered work, they are no longer recognized. At the institutional level, this use of the concept of work also creates a situation in which negotiators pay more attention to salaries than to the treatment of human relations in the organization or the psychological treatment of the individuals who work there.

Whatever the case may be, work is a very important activity for humans and for society. Work is primarily an activity whereby a person inserts himself into the world, exercises his talents, defines himself, actualizes his potential and creates value, which in return gives him a sense of accomplishment and personal effectiveness, and possibly even a meaning to life.

It is only recently (in the past 20 years) that the importance of work is appreciated at its fair value to preserve and stimulate individual health. It is even more recently the managers recognize the potential health impacts of work. Yet work continues to be managed to produce the expected financial results, but not necessarily to fulfill the organization's purpose that legitimizes its activities, nor to contribute to the development of individuals or of society. Important ethical issues are then asked that call work in these organizations into question.

Over the past few years, organizations have made many efforts to relieve suffering, particularly through employee assistance programs. Many programs have been put in place to help people recognize the signs and symptoms of stress before the situation worsens, thanks to wellness programs, awareness activities, professional improvement seminars or lifestyle hygiene and health promotion policies. These efforts essentially have focused on the development of individual strategies to deal with stress or recover health. We must congratulate the employers who have had the courage to support these programs and who seek to enrich them.

However, the problem of workplace health that currently exists and that is tending to spread will not be stemmed until its originating factors are determined, recognized and corrected. The National Institute for Occupational Safety and Health already expressed this opinion in 1990 (Kasl, 1992). While it is fair to say that employee health problems can be caused by personal dispositions, disorganized lifestyles or personal problems, it is time to recognize that they may also result from job design problems and poor working conditions.

Job design remains a very understudied research topic, despite appearances. A title search of the PsycInfo (APA) database performed on January 15, 2007, using the phrase "job design" either in the subject or in the key words of peer-reviewed articles (out of a possibility of over 1900 journals) produced 285 references since 1974, an average of 8.6 articles per year, divided as follows:

1974 – 1983	52 titles
1984 – 1993	59 titles
1994 – 2003	129 titles
2004 – 2007	45 titles

However, we note the relative growth in the number of publications on this subject over the years, encouraging the research effort in this field.

Reminder of the problem, the state of knowledge and the research objectives

What is the meaning of work?

The word “meaning” has two roots. From the Latin *sensus*, it means the faculty of experiencing impressions, the faculty of knowing and of judging. It also means the idea or image represented by a sign or an experience. From its Germanic root *sumo*, it means the direction or orientation something takes. In psychology, meaning essentially pertains to the experience of coherence, cohesion, balance and even plenitude. Meaning is also associated with being and living, with vocation (Frankl, 1969).

Yalom (1980) defines meaning by referring to coherence, the intention expressed by something. The quest for meaning implies a search for coherence. Yalom makes the distinction between meaning and purpose; the latter term’s referent is intention, aim and function. He also distinguishes between meaning and significance; although these two terms are interchangeable, the concept of significance implies the idea of importance or consequence, at least in English. The concept of significance exposes the values that underlying the meaning and the results to which the individual aspires.

Consequently, we can define the meaning of work in three ways, as Figure 1 illustrates.

Weisskopf-Joelson (1968) also defines meaning with these three components, namely significance, orientation and integration. She uses the analogy of air to explain meaning in people’s lives: like air, it is difficult to know what meaning is until it is missing. For this reason, she finds it easier to look for explanations in people who are lacking meaning or who have lost it. Her clinical experiments suggested three dimensions to her: (1) a system of explanation or interpretation of life events, (2) a goal or a cause and (3) integration of the inner life and the outer life.

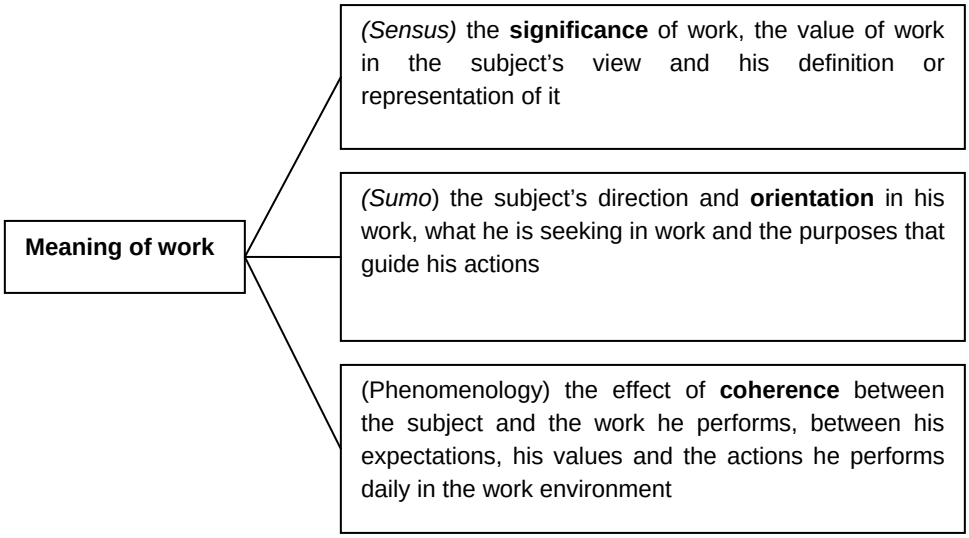

Figure 1. Three definitions of the meaning of work

According to Weisskopf-Joelson (1968), it is necessary for the individual to maintain coherence between the private (inner) and public (outer) domains of his life to be able to find meaning in life. This seems to be a *sine qua non* of personal commitment in various life projects. The individual needs a history, a belief system that allows him to understand and interpret his experience through his life events, to find meaning in them. The presence of a goal or a cause that transcends the individual's life is also an important factor to find meaning in life. Frankl (1969) and Yalom (1980) share the same opinion.

Concerning work, Brief and Nord (1990) affirm that the meaning of all human activities is obtained from two sources: comprehension and intention. It seems useful to consider the coherence of these sources. Brief and Nord (1990) explain that it is possible to understand an individual's interpretation of his work and intentions by exposing the factors of his personal development and the perception of his own history (in terms of the events that have marked it and his past, present and future needs). However, it must be recognized that other factors are also worth considering as potential determinants of the meaning of work. This is particularly the case for the dominant ideology and socialization, social norms, technology, the economy and, of course, language itself. In their own words:

> In short, the meaning of a socially embedded process such as work is affected by a complex and dynamic social context. While the concrete realities act directly on the senses, their comprehension is influenced by these data and the individual's intentions and expectations regarding the work. These in turn are influenced by the complex set of forces we have described as the social system. Thus, the meaning of work is not simply the purposes plus the concrete conditions. Instead the meaning of work reflects both of them and their dynamic interrelations. The meaning and comprehension of the concrete aspects of the work are affected by the purposes. The purposes

> of doing something are affected by concrete experiences and by what has been learned indirectly by observing or listening to others. To repeat a major point, both purposes and concrete realities are dynamically interrelated with past social and economic events and institutions (Brief and Nord, 1990, p. 15). *[RETRANSLATION]*

The meaning of work can be conceived as a coherence effect between the subject and the work he performs, the degree of harmony or balance he achieved in his relationship with work. The concept of coherence, mainly developed in existential psychology (Yalom, 1980), can be likened to the concept of consistency (Heider, 1946) or congruence (Osgood and Tannenbaum, 1955): the ideas a subject has about something tend to be organized in balanced systems and consequently any incoherence leads to activities (intellectual, emotional, behavioural, etc.) to restore balance. The coherence the subject funds in his relationship to work provides him with a feeling of psychological security and serenity that will help him face the trials inevitably involved in the performance of his duties.

Yalom (1980) maintains that the human being needs meaning to understand and interpret his experiences in the world and to define the values on which he can base his actions. This psychiatrist also affirms that meaning is necessary to the human being's mental hygiene: the individual needs a rationale, to have a goal, values or ideals, without which he would experience a condition of distress that Frankl (1967) qualifies as spiritual. These absolutes inspire his attitudes and conduct and serve him as guides for action. The world inherently has no absolute meanings, ideals or values; it is individuals who create meaning, values and ideals, by their actions and their interactions. Thereupon, the quest for meaning is essentially an existential experience.

Frankl (1967) implies that meaning performs three functions: (1) like values and ideals, it orients the individual's attitudes and conduct; (2) like a boomerang, it confronts the individual through life's trials and transitions, to force him to fulfill his destiny; (3) since it allows comprehension of existence and the integration of personality. Without this integration, it is very difficult for an individual to have an intelligible history and a goal in life that is logically associated with this history.

According to Dilthey (1962), meaning is elaborated in the relationship the subject establishes with the object, in the dialectical relationship between self and the outside world. In his own words:

> The concept of meaning primarily appears on relation to the process of comprehension. It supposes the relationship between something external, something given to the senses, and something internal, of which it is the expression... (p. 107) *[RETRANSLATION]*

The meaning thus conceived is an effect or a product of human activity (Brief and Nord, 1990; Deleuze, 1969; Frankl, 1967; Jung, 1981). Meaning does not reveal itself; it is discovered through events and through the relationships the subject maintains with others.

Frankl (1967) explains that meaning is not only an attribute of people, objects and experiences; it is first and foremost a discovery. In fact, meaning is elaborated on perceived stimuli and thereby involves a certain degree of objectivity that allows it to be defined on the basis of a pattern of experiences. Although there is thus an objective component, subjectivity remains the principal component of meaning.

According to Deleuze (1969), non-sense is something which has no meaning and, simultaneously, which stands in opposition to the absence of significance by giving meaning. As he wrote so well:

> (…) For the philosophy of the absurd, non-sense stands in opposition to sense in a simple relationship with it; so much so that the absurd is always defined by a defect of meaning, a lack of meaning (there isn't enough of it...). From the structural point of view, on the contrary, there is always too much meaning: excess produced and overproduced by non-sense as an inherent defect. (...) Non-sense is both something that has no meaning but which, as such, stands in opposition to the absence of meaning by giving meaning. That is what must be understood by *non-sense*. (pp. 88-89). [TRANSLATION]

The feeling of non-sense can be described as a void in existence, characterized by ennui, apathy and vacuity, which tends to become generalized in every field of existence (Ruffin, 1984; Frankl, 1967; Yalom, 1980). It is often determined by the absence of rationale (Frankl, 1963), by the feeling of dependence and inauthenticity (Bugental, 1969) and by the sense of powerlessness (May, 1953; Fromm, 1975).

The quest for meaning is manifested by a state of anxiety that is not abnormal or pathological, however (Tillich, 1952). In fact, human beings are constantly in search of meaning, thereby implying that it is always lacking. Frankl (1967) pursues the same line of discussion: the quest for meaning is inherent to human existence. However, this anxious state must also be accompanied by a state of pleasure and joy for the individual to remain healthy (Maslow, 1968).

In his clinical studies, Baumeister (1991) determined four needs that give meaning to life:

1. have a purpose, a reason for living,
2. have a feeling of control over one's destiny and effectiveness in one's projects,
3. have the feeling of being a morally correct person whose conduct is morally justifiable, and

4. have a feeling of dignity and self-worth.

According to this psychiatrist, these needs are interrelated and their satisfaction if manifested by a feeling of coherence and meaning in one's life.

For Isaksen (2000), the meaning of work is perceived as a state of satisfaction engendered by the perception of coherence between the individual and the work he performs. Based on his analysis of 28 interviews with employees in the restaurant sector, it is possible for an individual to give meaning to his work, despite the difficult conditions in which it is performed. There are eight categories of meaning in work:

1. the possibility of attachment to the workplace or the work as such,
2. the possibility of engaging in social relations at work and caring for others;
3. the feeling that the work is useful and a necessary part of a larger meaningful project,
4. the feeling that the work accomplished is important to the well-being of other people,
5. the possibility of learning and the pleasure of finding fulfillment in one's work,
6. the possibility of contributing to the development of work procedures and the improvement of working conditions,
7. the experience of autonomy that gives a sense of freedom, and
8. a sense of responsibility and pride in one's work.

Generally, work is defined as being meaningful when the subject perceives his work as having a goal, a purpose and value, or significance (May et al., 2004).

Pratt and Ashforth (2003) make a distinction between meaningfulness of work and meaningfulness at work. These researchers explain that meaning can be obtained from the intrinsic qualities of the work itself or the environment in which it is performed. While they acknowledge without hesitation that meaning is an eminently subjective experience, they assume that a limited number of archetypes associated with meaning must exist in a given society and that there must be patterns in the processes through which individuals find meaning in their work. They associate these processes with "sensemaking", the process by which the subject associates a significance (which reflects his past experience and his current emotional state) with his perception of his work and of his work environment. The significance thus assigned has no social influence: its social construction would result from the subject's interactions in his workgroup, department and organization. Pratt and Ashforth (2003) present the hypothesis that the meaning an individual gives to his work and his work environment is also intimately linked to his identity, thus reflecting the propositions of Brief and Nord (1990), presented above. Their model is reproduced in Figure 2.

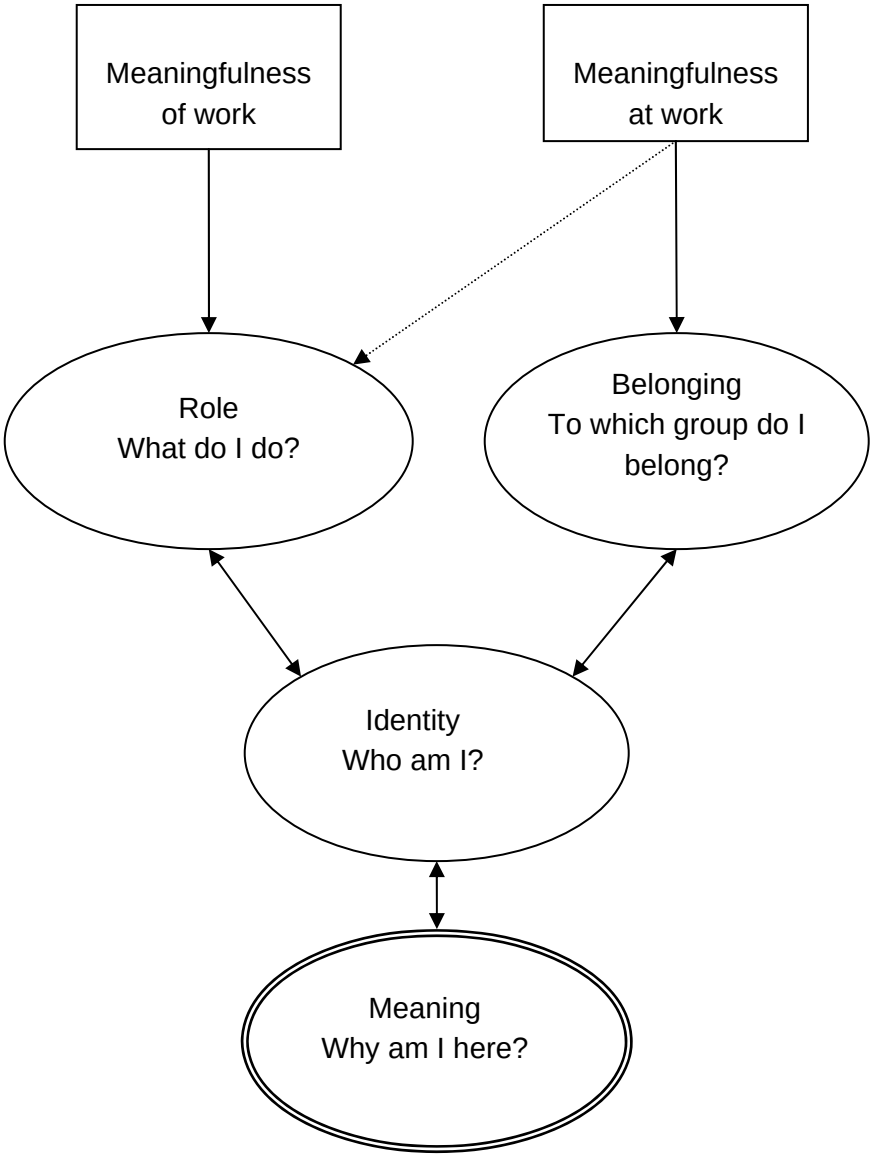

Figure 2. Pratt & Ashforth model, 2003, p. 313

Moreover, Pratt and Ashforth (2003) hypothesize that identity is also influenced by the meaning the individual finds in his work and in his work environment. Thus, work and the work environment are meaningful for an individual when he perceives a fit, a match or an alignment between his identity, his work and his work environment. This corresponds to some extent to the coherence effect described above. The originality of their proposition rests in the distinction they make between the characteristics of the work itself and the

positive professional relationships engendered by the performance of the work. Thus, it would be possible to have meaningful work in an environment that is not meaningful, and vice versa.

Studying the meaning of work within a perspective of coherence can be consistent with the theory of work adjustment or the Person-Environment Fit. In this field, the Hackman and Oldham (1976) model of job characteristics is predominant. We will now discuss this model.

Job design

In our research on job design, the meaning of work is defined as a coherence effect between the characteristics a subject seeks in his work and those he perceives in the work he performs.

Since 1960, several studies have been done on the characteristics of stimulating or motivating work. An entire field of knowledge has emerged, known as “job design”. Job design consists of structuring activities and the conditions under which they must be performed according to characteristics that give them meaning (Ketchum and Trist, 1992). The study of job design leads to determination of the conditions of quality of work life. By definition, quality of work life is a general state of well-being of individuals in their work environment. It is generally described by means of the following indicators: meaning of work, organizational commitment or sense of belonging to the organization, feeling of dignity and accomplishment in one’s work and achievement of balance between work and private life.

In this research field, two models are predominant: the Job Characteristics Model proposed by Hackman and Oldham (1976) and Trist’s Sociotechnical Model (1978). Let us recall them briefly.

The Job Characteristics Model

Hackman and Oldham (1976) proposed a model that seeks to explain how the interactions between the characteristics of a job and individual differences influence workers’ motivation, satisfaction and productivity. Figure 3 shows the main variables of their model presented in their 1980 work. As this figure suggests, five job characteristics result in three psychological states, which generate consequences for individuals’ attitudes and behaviours. The links between these three sets of variables are moderated, according to the Hackman and Oldham model, by the strength of the person’s growth need: an individual with a high growth need would be more sensitive to an enriched job than an individual with a low growth need. The link between job characteristics and motivation would also be

moderated by the person's knowledge and competencies and his degree of satisfaction with his work context.

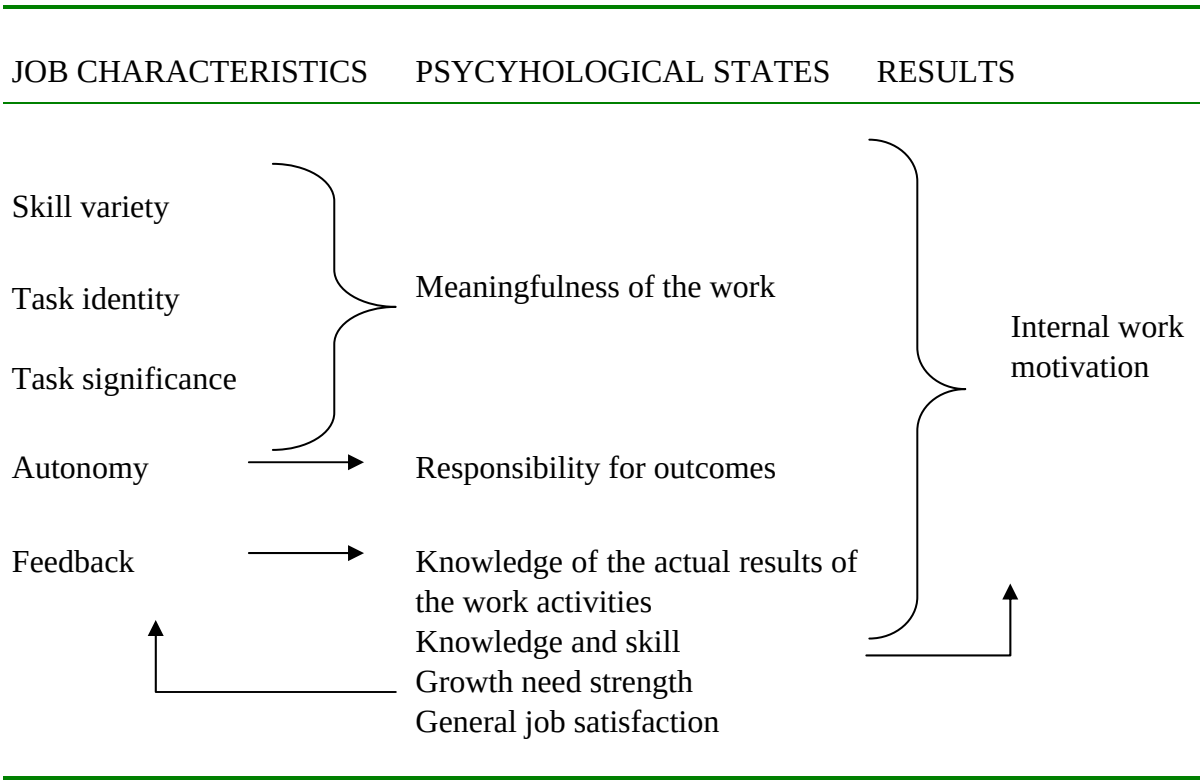

Figure 3. Hackman and Oldham Job Characteristics Model (1980, p. 83)

Three psychological states thus would have a major impact on an individual's motivation and satisfaction with his work: the meaningfulness of the work for the individual, the person's feeling of responsibility for the outcomes he obtains, and knowledge of the actual results of his work activities. For Hackman and Oldham (1976), work is meaningful for a person when he finds it important, valuable and worthwhile.

According to this model, three characteristics seem to contribute in giving meaning to work:

1. Skill variety: the degree to which a job involves a variety of tasks that require a variety of skills;
2. Task identity: the degree to which a task allows the individual to do something from beginning to end, with a tangible, identifiable result; and
3. Task significance: the degree to which a task has a substantial impact on the welfare or work of other people, whether in the organization or in the community.

Autonomy, namely the degree to which a task allows the individual sufficient freedom, independence and discretion to organize his work schedules and determine his work methods, results in a feeling of responsibility for performance of the tasks and the achievement of the objectives set.

Finally, feedback, namely the degree to which the performance of the tasks results from the information the individual obtains directly on his performance, ensures a better knowledge of the results he obtains, thus allowing him to make the adjustments required to achieve the performance objectives assigned to him.

Based on this model, Hackman and Oldham (1980) developed five principles of organization intended to confer one or more characteristics on the job: combining tasks, forming natural work units (which resulted in formation of semi-autonomous or autonomous teams), establishing client relationships, job enrichment, and opening feedback channels.

The Sociotechnical Model

In 1950, Eric Trist, at the Tavistock Institute in London, showed the worker dissatisfaction in the British mining industry was caused less by salary than by job design. In the worker surveys he conducted, he sought to understand what conditions presided over the employee commitment. With his colleagues, he proposed an approach called Sociotechnical System Design, STSD). This model aims to organize work so that the employees' commitment to their work is stimulated and so that organizational performance is improved. In fact, this means organizing work to correspond to the employees' intrinsic motivations as well as their extrinsic needs (Ketchum and Trist, 1992). Table 1 presents the properties such work should have.

According to the research performed by Trist (1978, 1981) and Emery (1976, 1964), a job must present six properties to stimulate the commitment of the person who performs it:

1. *Variety and challenge*: The job must be reasonably demanding, other than in terms of endurance, and involve enough variety; this aspect of the job makes it possible to recognize the pleasure that can be obtained from exercising skills and solving problems.
2. *Continuous learning*: The job must offer learning opportunities on a regular basis: this aspect of the work allows stimulation of personal growth.
3. *Discretion and autonomy*: The job must call upon the person's decision-making ability; this recognizes the need for autonomy and the pleasure derived from exercising personal judgment at work.

4. *Recognition and support*: The job must be recognized and supported by others in the organization; this aspect of the job stimulates the need for affiliation and belonging.
5. *Meaningful social contribution*: The job must make it possible to link the performance of activities to their social consequences; this contributes to build social identity and safeguard personal dignity. This aspect of the job recognizes the pleasure of contributing to society.
6. *Desirable future*: The work must make it possible to envision a desirable future; it may involve professional improvement and career orientation activities. This aspect of the work recognizes hope as a human right.

Conditions of Employment	The Job Itself
Fair and acceptable pay	Variety and challenge
Job security	Continuous learning
Benefits	Discretion, autonomy
Safety	Recognition and support
Health	Meaningful social contribution
Due process	Desirable future

Table 1. Properties of Jobs (Ketchum and Trist, 1992, p. 11)

In addition to these intrinsic aspects of work, sociotechnical systems design considers several extrinsic aspects which can affect commitment to work, such as pay, material and physical conditions and organizational rules. Although individual differences and contextual factors exist which can influence commitment to work, it seems that these 12 factors contributed significantly to the improvement of the quality of work and organizational performance.

These two models have several points in common. For example, they call for a job design that offers employees the possibility of doing something meaningful, applying and developing their skills, exercising their judgment and free will, knowing the evolution of their performance and coping. It also seems important that employees be able to develop a feeling of belonging and that they can work under suitable conditions.

Since the publication of these models, organizations have been subject to profound changes, calling work into question. It is legitimate to ask whether the characteristics stated in these models are still significant today. These two models were developed in Anglo-Saxon work environments in the 1960s. Since then, work has changed greatly, if only due to technological progress and the active population's increased level of schooling. What are the characteristics of meaningful work in the early 21st century?

Since 1993, we have conducted surveys in different environments to determine the characteristics of meaningful work (Morin, 1997; Morin and Cherré, 1999; Morin, 2001; Denis, 2002; Morin, 2003a, 2003b). To discover what gives meaning to work, 75 semi-directed interviews were conducted with managers holding middle and senior positions in organizations operating in a variety of sectors: 36 people in the Montréal region and 39 in the Paris region (Morin, 1997). During these interviews, the subjects tended to compare the characteristics of the current (or past) job with their own conception of the characteristics of meaningful work. Content analysis of the 75 interviews allowed us to determine 14 characteristics of meaningful work (Morin and Cherré, 1999). Based on these interviews, we constructed the first version of the survey questionnaire for this research project. Table 2 presents these 14 characteristics and the statements written for each of them.

The first experiments on this scale allowed us to determine 6 principal components or work characteristics that would be associated with meaningful work: social purpose, moral correctness, autonomy, learning opportunities, positive relationships and recognition. This project's primary objective is to verify the existence of relationships between these 6 characteristics and the meaning of work. A corollary will be to determine the characteristics that best explain the meaning people find in their work.

The following hypotheses were tested in this project:

1. The following job characteristics are positively correlated to each other: usefulness/social purpose, moral correctness, learning and development opportunities, autonomy, recognition and positive relationships.
2. The 6 characteristics are positively correlated to the meaning of work.

Job Characteristics	I do work
Purpose	21. that is used for something
	30. that produces results that I value
Social contribution	9. that is useful to society
	24. that is useful to other people
Rationality	7. that is performed efficiently
	20. with clear objectives
	24. that lets me achieve my personal goals
Workload	12. that respects my personal life
	18. with a workload adjusted to my capacity
Cooperation	10. that lets me have interesting contacts with other people
	15. that involves teamwork
Pay	23. that provides me a salary that can meet my needs
Application of skills	1. that corresponds to my interests and skills
	14. that I enjoy doing
Learning opportunities	2. that lets me learn and improve myself
	28. that lets me find fulfillment
Autonomy	3. that lets me exercise my judgment to solve problems
	8. that lets me take initiatives to improve my results
	13. that I am free to organize in the way I consider most effective
Responsibility	11. that lets me influence my environment
	26. for which I am responsible
Moral correctness	4. that is performed in an environment that respects people
	5. that respects human values
Spirit of service	22. that gives me the opportunity to serve other people
	25. where I can count on my colleagues for assistance when I have difficulties
Health and safety	6. that lets me look forward to the future confidently
	16. that is performed in a healthy and safe environment
Recognition	17. where my skills are recognized
	19. where my results are recognized
	29. where I can count on support from my superior

Table 2. Characteristics of Meaningful Work and Corresponding Statements (Morin and Cherré, 1999)

Work and mental health

According to the World Health Organization (WHO, 2001), health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. It also defines mental health as a state of well-being in which every individual can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.

The WHO reports several determinants of mental health. For example, it relates socioeconomic and environmental factors, such as unemployment, poverty, educational level, the country's situation, etc. The vulnerability of people living under adverse conditions can be increased by deficient lifestyle hygiene conditions, a feeling of insecurity, despair, exposure to radical social movements, and exposure to risks of violence and disease.

The WHO also indicates that mental health is associated with personal behaviour. For example, alcohol and drug consumption, violent behaviour, abusive behaviour, etc. affect mental health. Also, physical health problems such as cardiovascular disorders and neurological or physiological problems may result in mental health disorders.

Finally, the WHO recognizes that work and the conditions under which it is performed have an impact on mental health, particularly stress, unfairness, discriminatory practices, etc. The meaning an individual gives to his work should be added to this list of factors.

Indeed, Kasl (1992) explains that an employee can adapt to a situation that seems absurd to him, a situation that makes no sense, but this adaptation is achieved at a price: adjustment of aspirations, change of work values; diversion of attention to work relationships, increase in the value attributed to pay, disaffection with the job and the employer, loss of self-esteem, etc.

Isaksen (2000) also observed that subjects who gave meaning to their work withstood stress better than others. Such research led us to formulate hypotheses regarding the protective and even beneficial effects of the meaning of work for individual health.

Work-related suffering factors were clearly determined by studies on work-related stress (Karasek and Theorell, 1990; Kasl, 1992; Dejours, 1993; Davezies, 1999). These generally are: workload and work pace; work schedules (rotating shifts, variable schedules, unpredictable schedules, night shifts, number of working hours); the future of employment (security); recognition and support; autonomy and exercise of skills. When they are inadequate, these factors can cause health problems affecting people's ability to work. They thus are the target for prevention of disease and psychological distress in work environments.

Work-related pleasure factors are less known and recognized by researchers. Our surveys on quality of work life led us to determine several such factors: learning and development opportunities; social purpose; moral correctness of processes, practices and results; positive relationships (positive connections).

Nelson and Simmons (2003) propose a research model that accounts for the two aspects of mental health. Figure 4 presents their model.

They retain five examples of stressors: role demands, interpersonal demands, physical demands, workplace policies and job conditions. Because the phenomenon of stress is complex, these factors can cause eustress (or positive stress) and distress (or negative stress). The consequences for the individual are moderated by individual differences, including the subject's optimism, hardiness, locus of control, self-reliance and sense of coherence. The resulting psychological state will have effects on the individual's health, performance and private life. These will be facilitated if the subject experiences pleasure in his work. If he experiences distress, he will have to mobilize his defence systems to cope with the suffering so that he can still maintain his health, job performance and quality of life.

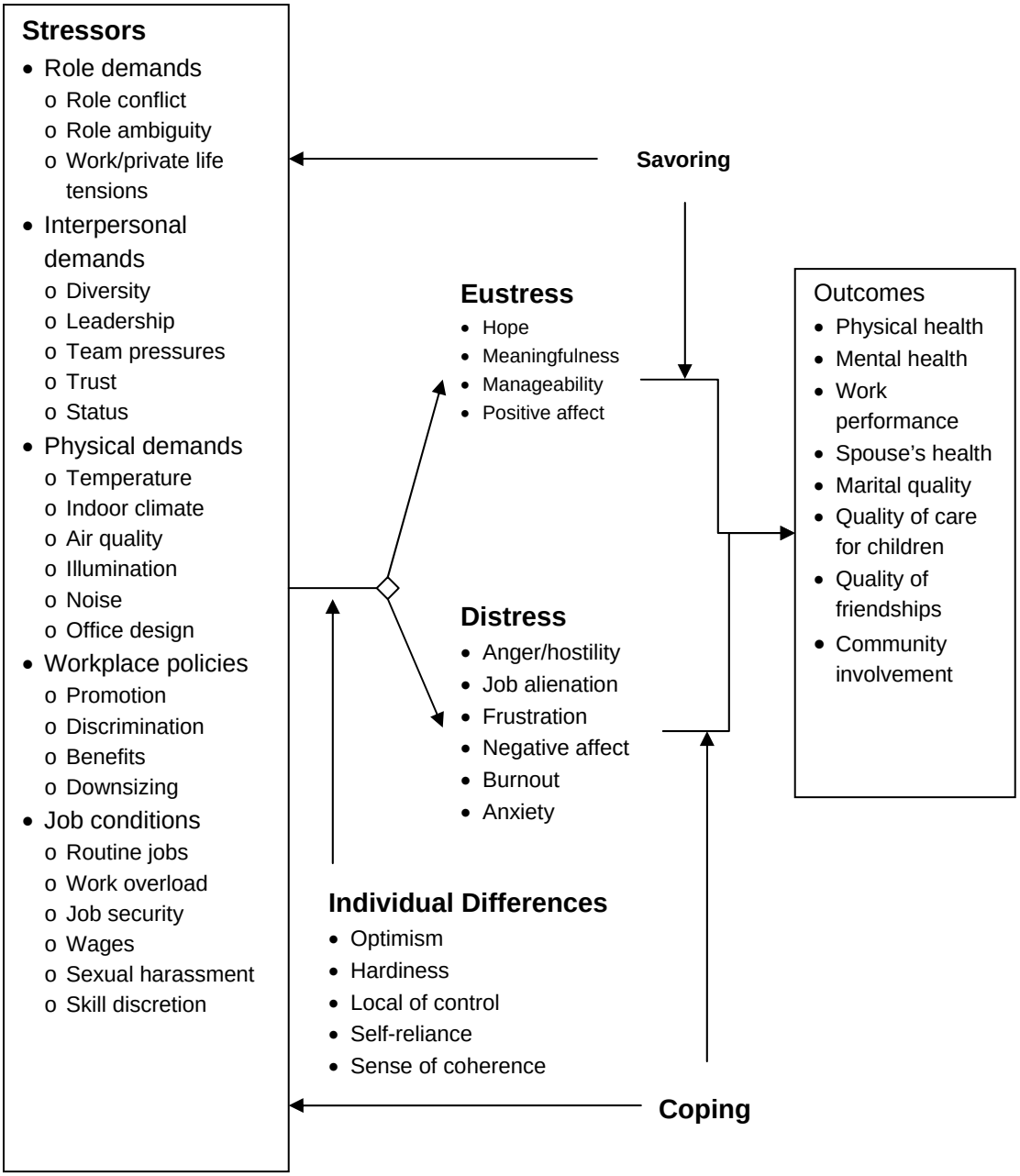

Figure 4. Nelson & Simmons Holistic Model of Stress, 2003, p. 102

Like these authors, we examined the two facets of mental health in this project, namely psychological well-being and psychological distress. More specifically, we hypothesize that the meaning of work has a positive effect on psychological well-being and a negative effect on psychological distress.

Two other hypotheses are tested under this project:

3. The meaning of work positively influences psychological well-being.
4. The meaning of work negatively influences psychological distress.

We implicitly suggest that the meaning of work has a mediating effect between the job characteristics determined above and the psychological states reported by the subjects.

Work and organizational commitment

Organizational commitment is a concept proposed to account for an important facet of employee mobilization within an organization; it reflects the nature and strength of the bonds between the individual and his work. Organizational commitment is a key criterion of organizational effectiveness, given that it predicts the workforce stability and the degree of mobilization. It indicates the degree to which an organization can count on the continuity of its employees' contributions to its activities and development. Moreover, organizational commitment is a very good indicator of the quality of work life (Ketchum and Trist, 1992).

Interest in this management concept is also justified by the fact that commitment seems to be a very good indicator of the diligence of individuals and their loyalty to the organization (Blau and Boal, 1989). More specifically, organizational commitment is correlated with workforce stability (i.e., low voluntary departure rate), employee diligence (i.e., low absenteeism rate), job performance, quality of customer service, and "corporate" behaviours (i.e., professional behaviours that go beyond the expectations and prescriptions of the assigned roles) (Meyer and Allen, 1997).

According to Meyer and Allen (1997), there are three forms of commitment. Affective commitment refers to the employee's attachment, identification and involvement in the organization. An employee displaying a strong affective commitment keeps his job because he wants to. Normative commitment reflects the feeling of duty or responsibility the employee has to the organization. An employee expressing a strong normative commitment keeps his job because he believes he has a moral obligation to the organization. Finally, continuance commitment indicates the extent to which the employee is aware of the costs associated with his eventual departure. An employee displaying strong continuance commitment keeps his job because he needs to. This type of commitment is associated with two attitudes: the lack of alternatives available to him on the job market or the personal sacrifices the employee would have to make if he quit his job.

Thus, another hypothesis is tested within the context of this project.

5. The meaning of work positively influences affective organizational commitment.

We implicitly suggest that the meaning of work also has a mediating effect between the work characteristics determined above and the subjects' affective organizational commitment.

Research objectives

In short, this research has the following objectives:

1. Determine the work characteristics associated with meaningful work;
2. Explore the relationship between the meaning of work and employee mental health;
3. Explore the relationship between the meaning of and the employees' commitment to the organization that employs them;
4. Determine concrete means for preventing the appearance of psychological distress associated with work;
5. Determine concrete means for promoting the psychological well-being of employees in their work environment;
6. Determine concrete means for promoting employees' commitment to their work environment.

As we will see in the next section, various data were collected in the surveys conducted under this project. For the purposes of this report, only the data relevant to this project's principal variables will be presented, analyzed and interpreted, that is: the 6 work characteristics (moral correctness, learning, autonomy, relationships, purpose and recognition), the meaning of work, psychological well-being and distress, and organizational commitment.

Methodology

The research presented here was conduced in 4 different organizations: a Hospital Centre (2001-2003), a Health and Social Services Centre (2006-2007), an Agricultural Research Centre (2005-2007) and an Engineering Firm (2006-2007). Except for the Engineering Firm, the other organizations were unionized.

This is applied research, which involves several advantages but also has to overcome several difficulties. Applied research has the advantage of improving the understanding of specific concrete problems and determining realistic solutions to these problems. It involves major difficulties, mainly associated with the complexity of the organizational environments: financial restrictions, availability of people to answer the researchers' questions, agendas of the interest groups involved, performance pressures, etc. Patience and temperance are therefore essential in order to gather information of scientific quality, in a

complex, relatively uncontrolled and generally inextricable data gathering context. Three years elapsed between the time the first survey was conducted in 2002 and the second survey! Initially the project was supposed to involve two organizations in the public sector (Health and Social Services) and two organizations in the private sector (the metallurgical industry). Given the difficulties of finding organizations in the private sector, the project was reoriented to two organizations in the service sector. In 2004, an agreement was made with the management of a federal Agricultural Research Centre, and in 2005, with the managements of a regional Health and Social Services Centre (CSSS) and an Engineering Firm.

The first survey was conducted in a Hospital Centre and the results were presented in a progress report to the IRSST in 2003. The experience of this first survey helped improve the research protocol followed in the next 3 surveys. Moreover, the scale evaluating the work characteristics was revised. The choice of scales evaluating the psychological states of distress and well-being was also modified. For these reasons, the results of this first survey will be recalled briefly and discussed separately from the other three.

Progress of the research

The same methodology was used in all 4 organizations. Essentially, here are the main steps.

Initial contact was established with the Human Resources Department and the Union executives, if applicable, to clarify the research objectives and procedures.

Site visits and brief discussions with employees and managers were organized for a better understanding of the composition of the establishment's workforce, the nature of the work and the conditions under which it is performed.

The research project was then submitted to the **Research and Ethics Committee (REC)** of HEC Montréal, in order to obtain the certificate of compliance with the rules of research ethics.

A **Consultative Committee** made up of union representatives, members of the personnel targeted by the research, members of management and researchers met for a first time to review the progress of the research and facilitate the achievement of its objectives. This Committee's main function was to support and guide the researchers in their research process by keeping them informed of the organizational context and the nature of the work, disseminating information to the employees and facilitating data gathering.

Visits were organized again in the different services with the goal of presenting the research to the employees, responding to their questions or concerns, and obtaining their consent to participate in the research. These visits were conducted with different members of the Management and the Unions.

The official launch of the study was then organized to encourage the employees to answer the questionnaire.

The survey at the Hospital Centre was conducted by means of a questionnaire, which was administered collectively. For the other three surveys, the questionnaire was administered via the CRITEOS website, with the collaboration of a private firm specialized in this field. Employees could respond via a personal computer at home or at work. In the case of the CSSS, computers with Internet connections were installed at the different CSSS points of service to conduct the quality of life survey. Members of the research team were present at the different points of service for several predetermined periods in order to present the research to the participants, answer their questions and help them complete the questionnaire as needed.

In each of the two measurement periods, a reminder was issued to simulate participation. This reminder was given by email and by tours of the different points of service by one or more members of the Consultative Committee team. These reminders respected individuals' free choice to participate or not participate in the research.

The survey questionnaire

The **survey** was conducted by means of a questionnaire. Given the sensitivity of certain questions on psychological states, the use of a questionnaire facilitates collection of personal information. The main disadvantage of a questionnaire is that it is not possible to explore certain questions in greater depth, since the questionnaire's formulation is determined in advance.

The survey at the Hospital Centre was conducted by means of a two-part questionnaire. The first part concerns work. The scales help to describe the significance of work in general, its place in the individual's life and the factors that contribute to give it meaning. The second part concerns personal information. It has two sections. The first section deals with personal information (age, sex, level of schooling, number of significant changes in the past year, psychological distress index, psychological well-being index, etc.). The second section deals with the current job (type of organization, size of the organization, type of job, number of years of service, scale of organizational commitment, mobilizing practices in the work unit, psychological empowerment, etc.).

The other three surveys that followed were conducted in two stages to control the common variance effects. The questionnaire thus was divided into two parts, with the second part administered at a 3-week interval after the first. The first part includes questions and scales that essentially evaluate the work, the working conditions and the interpersonal relations among the employees. The second part allows evaluation of organizational commitment and involvement, psychological well-being, psychological distress, and the perception of physical health.

The first part of the questionnaire contains the following scales and questions:

- Representations of work (15 statements, 6 points, MOW International Research Team, 1987)
- Characteristics of meaningful work (26 statements, 6 points, Morin & Dassa, in preparation)
- Physical, mental and emotional workloads (12 statements, 6 points, Morin, 2002)
- Description of the work schedule and its impacts on sleep and work-life balance (SSI, Barton & al. 1993)
- Recognition (effort and reward balance, 10 statements, 6 points, Siegriest, 1996)
- Perception of justice (18 statements, 6 points, Moorman, 1991)
- Perception of the relationship with an immediate superior (LMX) (7 statements, 5 points, Graen & Uhl-Bien, 1995)
- Supervisory behaviour (40 statements, 5 points, Rousseau & Aubé, 2005)
- The meaning of work (6 statements, 6 points, May, Gilson & Harter, 2004)
- Questions allowing information gathering on the respondent and his/her job.

The second part includes the following scales and questions:

- Empowered behaviours (19 statements, 10 points, Boudrias & Savoie, 2006)
- Meaning of work (6 statements, 6 points, May, Gilson & Harter, 2004)
- Forms of organizational commitment (18 statements, 6 points, Meyer & Allen, 1993)
- Significant life events (20 statements, yes, no, not applicable, Dohrenwend, 1973)
- For the Hospital Centre and the Agricultural Research Centre
    - The Psychiatric Symptoms Index - PSI (14 statements, 4 points, Ilfeld, 1976)
- For the CSSS and the Engineering Firm
    - The EMMDP indicator of psychological distress (23 statements, 5 points, Massé & al., 1998)
    - The EMMBÉP indicator of psychological well-being (25 statements, 5 points, Massé & al., 1998)
- General health perception - GHP (5 statements, 6 points, Bjorner & Kristensen, 1996)

Variables (reference to the corresponding scale)	Definition of variables	Number of statements in the corresponding scale	Internal consistency index of each scale (Cronbach's α)
Social purpose (Morin & Dassa, in preparation)	Do something useful for others or society, that makes a contribution to society	4	0.849
Moral correctness (Morin & Dassa, in preparation)	Do work that is morally justifiable, both in its accomplishment and in the results it produces	4	0.904
Learning and development (Morin & Dassa, in preparation)	Do work that lets you develop your skills, improve yourself and find fulfillment	4	0.890

Autonomy (Morin & Dassa, in preparation)	Be able to exercise your skills and judgment to solve problems and make decisions concerning your work	3	0.770
Positive relationships (Morin & Dassa, in preparation)	Do work that allows you to have positive relationships with your colleagues and their support	4	0.854
Recognition (Siegrist, 1996)	Have the respect and esteem of your superiors and colleagues and be satisfied with the support, salary and outlook for promotion	6	0.843
Meaning of work (May & al., 2004)	The tasks accomplished are important, the work is significant, very important, has value.	6	0.961
Psychological well-being (Massé & al, 1998)	Self-esteem, social involvement, psychological balance, self-control and control of events, sociability and happiness	25	0.967
Psychological distress (Massé & al, 1998)	Anxiety/depression, irritability, self-depreciation, social disengagement	23	0.961
Psychological distress (Ilfeld, 1976)	Anxious state, depressive state, irritable state, cognitive problems	14	0.877
Affective commitment (Meyer and Allen, 1993)	Be affectively attached to the organization, have a feeling of belonging to the organization	6	0.840

Table 3. List of the Principal Variables of this Research, their Definition, the Number of Statements Composing Each of these Variables and their Cronbach's α Internal Consistency Index

As we indicated above, only the data relevant to the principal hypotheses of this research will be presented in this report. Thus, we present only the Cronbach's α internal consistency indices of the variables concerned by principal hypotheses of this research. The α internal consistency index, as its name indicates, makes it possible to estimate the extent to which the statements that are supposed to measure a variable provide coherent and reliable information[1] on the variable in question. The minimum acceptable value is 0.70. As Table 3 shows, the α indices are very high, indicating the high fidelity of the measurements chosen for these 3 surveys.

The Douglas & al. "meaning of work" scale (2004) is used in both parts of the questionnaire to test its temporal stability (fidelity index). We have chosen this scale, because it measures the extent to which the work has meaning for the person and has produced a simple and faithful unifactorial structure in its English version (Douglas & al, 2004). To determine which work characteristics contribute to give meaning to work, the score obtained in the second part will be used.

[1] In the sense of the real variance in relation to the measurement error variance.

Samples

The Hospital Centre (CH) (2002-2003)

The Hospital's Human Resources Department provided us with a computerized list of 1,246 unionized workers (CSN). To form the sample of respondents, the random selection method was chosen, because it ensures a representative sample. Thus, 400 workers selected at random were invited to participate in the first stage of the project. The questionnaire was administered between February 28 and April 10, 2002. A total of 262 employees accepted to answer the questionnaire, corresponding to a 65.5% response rate. Among these respondents, 67.4% are women and 32.6% are men. The respondents' age ranges between 21 and 62 and their average age is 44.4 years (standard deviation of 9.08 years). The positions or sectors occupied by the respondents in the Hospital are varied. A total of 24 positions or sectors are represented.

The Health and Social Services Centre (CSSS) (2006-2007)

At the CSSS, the Management and the Unions wanted to address the survey to all personnel of the Hospital, the CLSC and the CHSLDs, representing a total of 1826 people, including physicians. Consequently, this was no longer a sample, but tantamount to a census of opinions. It involved the risk that the sample of respondents did not represent all of the respondents for whom the survey is intended. A total of 955 people participated in the survey, 52.3% of all personnel. The survey was conducted between April 24 and June 9. 833 employees completed the first part of the questionnaire, corresponding to a 45.6% participation rate. 586 employees completed the second part of the questionnaire. The participation rate at this stage was therefore 32.1%. This decrease in the response rate could be explained by different factors, particularly: budget cuts announced at the CSSS between the first and second data collection of data, lack of availability of participants, holidays and vacations, etc. In all, 554 people completed the two parts of the questionnaire, which represents a 30.3% participation rate. Among the respondents, 463 are women (86%) and 76 are men (14%). Their average age is 41.8 years. They are well distributed in terms of schooling: 26% have a Diploma of Secondary Studies, 41% a Diploma of College Studies and 33% a university diploma.

The Agricultural Research Centre (ARC) (2005-2006)

For this survey, the Management and the Unions also wanted to address the survey to all personnel. This was therefore tantamount to a census. We tried to reach all the permanent employees (indeterminate status) who work at the Research Centre. Of the 120 employees responding to this criterion, 101 people participated in the survey. The survey was conducted between April 4 and May 15, 2005, namely 84.2% of the personnel. 99 people responded to the first part of the questionnaire and 92 people to the second part. The participation rate thus was 82.5% in the first collection of data and 76.67% in the second collection. The average age of the respondents was 42.5 years. The standard deviation

observed for age was 8.57 years. The respondents were 43.4% men and 54.5% women. 74.7% of the respondents had a university education. This is explained by the nature of the activities of a Research Centre in their field.

The Engineering Firm (EF) (2006-2007)

The firm's Management wanted to address the survey to all personnel working at several points of service distributed throughout the province, a total of 600 people, including the members of Management. This again was tantamount to a census. The survey was conducted between May 22 and June 25, 2006. In all, 305 people participated in the survey, 50.8% of the personnel. 261 answered the first part of the questionnaire and 198 the second. 172 answered both parts. 64.2% of the respondents are men and 35.8% are women. The standard deviation observed for age is 11.2 years. The participants range in age between 20 and 68. 11.1% of the respondents have a Diploma of Secondary Studies, while 41.2% have a Diploma of College Studies and 47.7% have a university diploma.

Results

The Hospital Centre (CH)

Work characteristics and the meaning of work

This first survey confirmed the factorial structure of the characteristics of meaningful work. Six components were confirmed (the statements composing the factor are in parentheses):

1. Moral correctness (work performed in a workplace that values justice and equity, in a healthy and safe environment, and that demonstrates respect for human dignity where you can count on your colleagues for assistance when you have difficulties);
2. Learning and development opportunities (work that you enjoy doing, that lets you achieve your objectives, that lets you achieve a balance with your private life, that lets you look forward to the future confidently, that lets you learn, that lets you find fulfillment);
3. Autonomy (work that lets you assume responsibilities, that lets you exercise your judgment to solve problems, that lets you make decisions, that lets you work effectively);
4. Relationships (work that lets you have interesting contacts with other people, that lets you have good relationships with other people, that lets you develop a close relationship with your colleagues, that lets you have influence in your environment);
5. Social purpose (work that is useful to society, that is useful to other people);
6. Recognition (work that corresponds to your skills, that gives you a salary that lets you meet your needs, in which your skills are recognized).

The model we tested involves the creation of coherence indices based on two measurements: the measurement of the valued characteristics of work (importance measurement) and the measurement of the characteristics present in the work (presence measurement). These new indices are then treated as independent variables within analyses (mainly regressions) in order to predict a dependent variable, such as psychological state. This procedure is part of the approach commonly known as the "theory of work adjustment", which includes, among others, the studies included in the Person-Environment Fit (P-E fit) approach (e.g., Chatman, 1989; Rounds et coll., 1987). In this type of study, the level of adjustment or coherence between an individual's characteristics (e.g., personality traits, skills, etc.) and those of the individual's environment (e.g., tasks, roles, etc.) are considered to predict the quality of his subsequent behaviours in his work environment (e.g., his performance). However, some researchers, more concerned about methodological and statistical aspects, have shown that problems were associated with this type of index (e.g., Cronbach, 1987; Edwards, 1994; Evans, 1991).

The regression analyses produced for each of the coherence indices we calculated all showed that the variable that best predicted the meaning of work was the measurement of actual work characteristics (the *presence* measurement, i.e., the perception of work characteristic). In fact, the coherence indices make no value-added contribution to explain the score obtained for the meaning of work indicators (self-reported measurements).

Methodological and statistical reasons explain these results. For example, Edwards (1994) affirms that to determine a coherence index, the measurements constituting this index must share the same statements and ideally, the same measurement scale with the same interval. The *importance* and *presence* measurements of this study are composed of the same statements and the same intervals (6-point Likert Scale), but the limits of the scales are not the same. For the *importance* measurement, the respondents had to indicate their answers on a scale from 1 = slightly important, to 6 = extremely important, while for the *presence* measurements, the respondents indicated their answers on a scale from 1 = strongly disagree, to 6 = strongly agree. Edwards (1994) also adds that the methodologies generally used in studies with coherence indices imply that the two measurements each constitute indices producing an equal but opposite contribution in the creation of these indices. For this to be respected, each measurement must be oppositely related to the measured consequence – in this case, the meaning of work – but the difference in the variances (in absolute value) of these two measurements is not statistically significant. Ideally, the two measurements should be oppositely related to measured consequence.

Following these analyses, we revised the scales of the work characteristics and decided to measure the perception of the work characteristics directly, because this is the measurement that best predicts the perception of the meaning of work. This is why the research strategy that will be adopted in the other 3 surveys will be different from the one that was planned and followed initially in this first survey. The surveys that followed made it possible to verify whether this new approach satisfies the measurement standards (fidelity, construct validity and predictive validity).

Work and mental health

It seems that the respondents' psychological well-being is best explained by the possibility of developing their skills. It also seems that attribution style is associated with the employees' psychological well-being. In this first survey, inward personality respondents have a greater tendency to feel good about their work and their lives than outward personality respondents. Attribution style is a personality trait. When an event occurs, we tend to attribute a cause to it. Inward personalities tend to believe that they are at the origin of what happens to them. They sincerely believe that they have power in their lives and that they influence the events that affect them. Outward personalities, on the contrary, are inclined to believe that they have little power over what happens to them. They tend to think that their fate is somewhat in the hands of forces beyond their control, such as destiny, luck, chance, the system, the government, etc.

In general, the results show that autonomy is the factor that best predicts the respondents' state of psychological distress. The more a respondent perceives that he has autonomy in his work, the lower his score tends to be on the psychological distress index (thus, the more he tends to feel good).

In particular, an employee's irritability seems to depend on several factors. According to the results obtained in this first survey, it seems that a person is very likely to be irritable (i.e., to be vexed easily, to get angry easily, etc.), if he does not enjoy his work, does not have an opportunity to develop his skills, perceives a lack of ethics in his work, receives little support and works in a tense environment. Of all these factors, the support a person receives is the greatest determinant of his psychological state.

Work and organizational commitment

On the whole, the more an employee perceives moral correctness in his work, has a balanced workload, enjoys doing his work, can develop his skills, feels valued in his work, receives support in his work, and works in a stimulating environment, the greater his affective organizational commitment.

As could be expected, the more employees perceive that their work is meaningful, the more they tend to perceive their work as morally correct, talk about it positively, define it as a positive activity and have an affective organizational commitment.

The CSSS, Research Centre and Engineering Firm surveys

The following analyses were performed on the database composed of the 3 samples: the Agricultural Research Centre (ARC) (n=101), the CSSS (n=955) and the Engineering Firm (EF) (n=305).

Work characteristics and the meaning of work

Six work characteristics are explored in this research: autonomy, learning and development opportunities, positive relationships, recognition, moral correctness, and social purpose. The distributions of responses for each characteristic are presented in Figure 5.

For easier understanding of the distributions presented in this figure (Figure 5), here are the elements. This figure presents 3 frequency distributions for each organization: ARC (*Agricultural Research Centre*), CSSS (*Health and Social Services Centre*) and EF (*Engineering Firm*). The means obtained for each characteristic (there are 6) are represented by a dark horizontal line. The rectangle represents the distribution of all responses among the 3 standard deviations of the mean. The vertical line and the points located above and below this line correspond to the range of the responses on a 6-point scale (1, strongly disagree and 6, strongly agree).

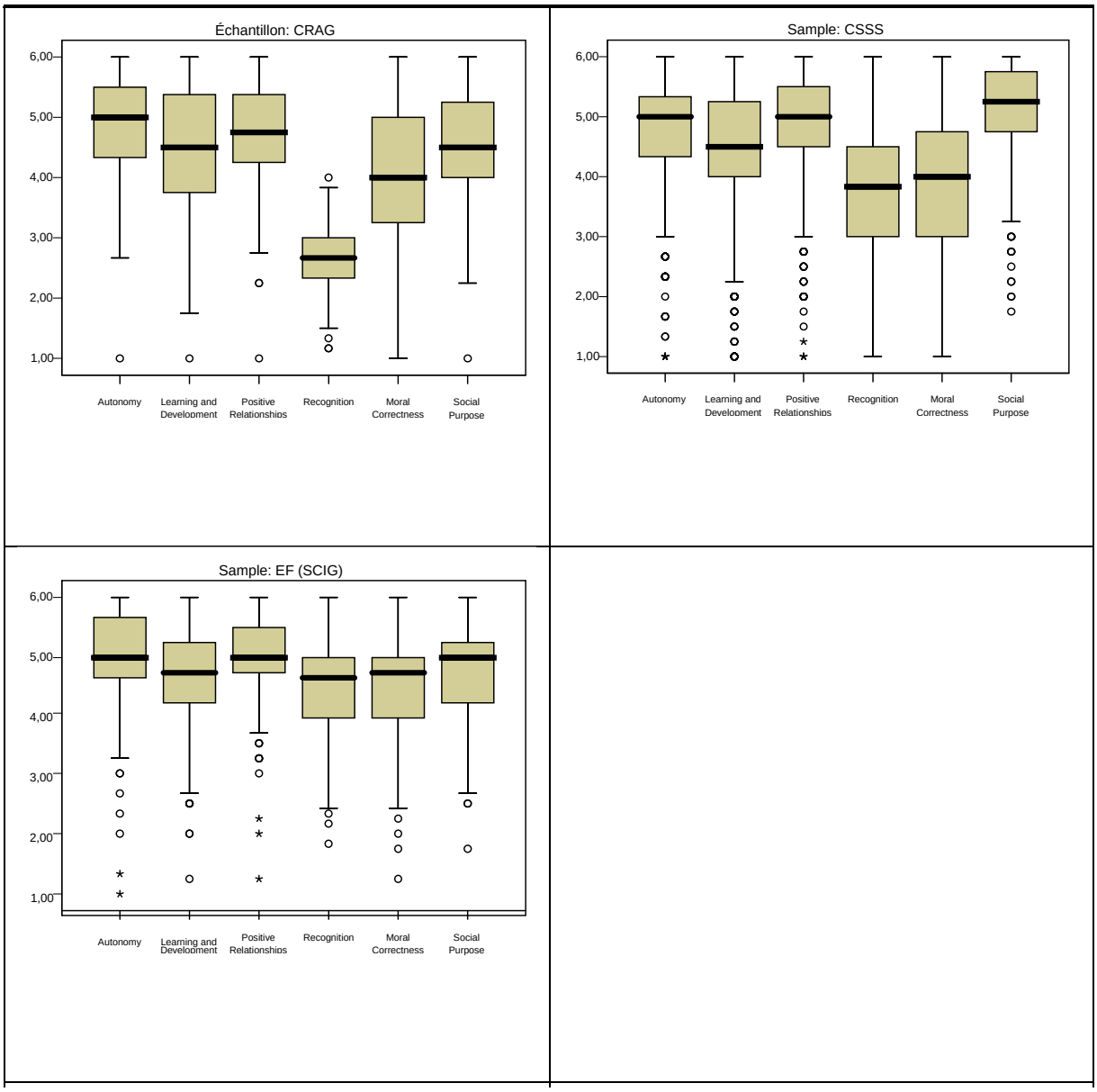

Figure 5. Distributions of Work Characteristics, According to the Samples

As this figure shows, the distributions have a positive asymmetry, although the subjects' responses in each organization are distributed over the entire scale (between 1 and 6). This means that on the whole, the majority of the respondents generally agree that they perceive the characteristics valued in their work, except in the case of the ARC for the "Recognition" characteristic.

To what extent are these characteristics associated with the perception of the meaning of work? To answer this question, a correlation analysis was performed. The Pearson correlation coefficient is a measurement of linear association between two variables. The value ranges between –1 and 1. The sign of the coefficient indicates the direction of the relationship and the absolute value, or the strength, since the highest values are a sign of a stronger relationship.

Correlations

Sample			Autonomy	Learning and Development	Positive Relationships	Recognition	Moral Corrections	Social Purpose	Meaning of Work
ARC (CRAG)	Autonomy	Pearson Correlation	1	,653**	,678**	,403**	,518**	,678**	,660**
		Sig. (2-tailed)	.	,000	,000	,000	,000	,000	,000
		N	99	99	99	99	99	99	99
	Learning and Development	Pearson Correlation	,653**	1	,607**	,509**	,659**	,703**	,795**
		Sig. (2-tailed)	,000	.	,000	,000	,000	,000	,000
		N	99	99	99	99	99	99	99
	Positive Relationships	Pearson Correlation	,678**	,607**	1	,483**	,670**	,689**	,665**
		Sig. (2-tailed)	,000	,000	.	,000	,000	,000	,000
		N	99	99	99	99	99	99	99
	Recognition	Pearson Correlation	,403**	,509**	,483**	1	,537**	,280**	,292**
		Sig. (2-tailed)	,000	,000	,000	.	,000	,005	,003
		N	99	99	99	99	99	99	99
	Moral Correctness	Pearson Correlation	,518**	,659**	,670**	,537**	1	,557**	,592**
		Sig. (2-tailed)	,000	,000	,000	,000	.	,000	,000
		N	99	99	99	99	99	99	99
	Social Purpose	Pearson Correlation	,678**	,703**	,689**	,280**	,557**	1	,835**
		Sig. (2-tailed)	,000	,000	,000	,005	,000	.	,000
		N	99	99	99	99	99	99	99
	Meaning of work	Pearson Correlation	,660**	,795**	,665**	,292**	,592**	,835**	1
		Sig. (2-tailed)	,000	,000	,000	,003	,000	,000	.
		N	99	99	99	99	99	99	99
CSSS	Autonomy	Pearson Correlation	1	,648**	,578**	,453**	,452**	,390**	,400**
		Sig. (2-tailed)	.	,000	,000	,000	,000	,000	,000
		N	895	895	895	872	895	895	837
	Learning and Development	Pearson Correlation	,648**	1	,489**	,472**	,524**	,481**	,578**
		Sig. (2-tailed)	,000	.	,000	,000	,000	,000	,000
		N	895	903	895	872	895	895	837
	Positive Relationships	Pearson Correlation	,578**	,489**	1	,448**	,435**	,356**	,303**
		Sig. (2-tailed)	,000	,000	.	,000	,000	,000	,000
		N	895	895	895	872	895	895	837
	Recognition	Pearson Correlation	,453**	,472**	,448**	1	,630**	,186**	,239**
		Sig. (2-tailed)	,000	,000	,000	.	,000	,000	,000
		N	872	872	872	872	872	872	837
	Moral Correctness	Pearson Correlation	,452**	,524**	,435**	,630**	1	,228**	,244**
		Sig. (2-tailed)	,000	,000	,000	,000	.	,000	,000
		N	895	895	895	872	895	895	837
	Social Purpose	Pearson Correlation	,390**	,481**	,356**	,186**	,228**	1	,485**
		Sig. (2-tailed)	,000	,000	,000	,000	,000	.	,000
		N	895	895	895	872	895	895	837
	Meaning of work	Pearson Correlation	,400**	,578**	,303**	,239**	,244**	,485**	1
		Sig. (2-tailed)	,000	,000	,000	,000	,000	,000	.
		N	837	837	837	837	837	837	837
EF (SCIG)	Autonomy	Pearson Correlation	1	,590**	,487**	,302**	,348**	,468**	,354**
		Sig. (2-tailed)	.	,000	,000	,000	,000	,000	,000
		N	270	270	270	268	270	270	262
	Learning and Development	Pearson Correlation	,590**	1	,560**	,477**	,431**	,580**	,562**
		Sig. (2-tailed)	,000	.	,000	,000	,000	,000	,000
		N	270	271	270	268	270	270	262
	Positive Relationships	Pearson Correlation	,487**	,560**	1	,406**	,453**	,502**	,297**
		Sig. (2-tailed)	,000	,000	.	,000	,000	,000	,000
		N	270	270	270	268	270	270	262
	Recognition	Pearson Correlation	,302**	,477**	,406**	1	,519**	,227**	,369**
		Sig. (2-tailed)	,000	,000	,000	.	,000	,000	,000
		N	268	268	268	268	268	268	262
	Moral Correctness	Pearson Correlation	,348**	,431**	,453**	,519**	1	,415**	,182**
		Sig. (2-tailed)	,000	,000	,000	,000	.	,000	,003
		N	270	270	270	268	270	270	262
	Social Purpose	Pearson Correlation	,468**	,580**	,502**	,227**	,415**	1	,442**
		Sig. (2-tailed)	,000	,000	,000	,000	,000	.	,000
		N	270	270	270	268	270	270	262
	Meaning of work	Pearson Correlation	,354**	,562**	,297**	,369**	,182**	,442**	1
		Sig. (2-tailed)	,000	,000	,000	,000	,003	,000	.
		N	262	262	262	262	262	262	262

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4. Correlations Between Work Characteristics and the Meaning of Work

The six work characteristics are positively and significantly correlated to each other. They also are positively and significantly correlated to the meaning of work, as shown in Table 4.

To determine the work characteristics that best explain the variation of the score obtained for the "meaning of work" variable, a step-by-step linear regression analysis was performed for each sample. Table 5 presents the work characteristics associated with the meaning of work according to the importance of the variance proportion explained by each sample: ARC (*Agricultural Research Centre*), CSSS (*Health and Social Services Centre*) and EF (*Engineering Firm*).

Importance	ARC (CRAG)	R2	CSSS	R2	EF (SCIG)	R2
1	Social Purpose	70%	Learning and Development	33%	Learning and Development	32%
2	Learning and Development	63%	Social Purpose	24%	Social Purpose	20%
3	Positive Relationships	44%	Autonomy	16%	Recognition	14%
4	Autonomy	44%	Positive Relationships	9%	Autonomy	13%
5	Moral Correctness	35%	Moral Correctness	6%	Positive Relationships	9%
6	Recognition	9%	Recognition	6%	Moral Correctness	3%

Table 5. Order of Importance of Work Characteristics Explaining the Meaning of Work for Each Sample

A fairly stable pattern is observed in the order of importance of the work characteristics, but the size of the coefficient varies according to the type of organization. For example, recognition is a much greater factor in the Engineering Firm, which is in the private sector, than in the other two organizations, which are in the governmental sector.

After removing 111 eccentric or atypical subjects (outliers) from the sample, the order of importance among the 3 samples appears to be even more consistent. The "Social Purpose" and "Learning and Development" factors occupy the top ranks and the "Autonomy" factor ranks third, as Table 6 shows.

Importance	CRAG	R2	CSSS	R2	SCIG	R2
1	Social Purpose	63%	Learning and Development	28%	Learning and Development	38%
2	Learning and Development	59%	Social Purpose	22%	Social Purpose	23%
3	Autonomy	34%	Autonomy	11%	Autonomy	15%
4	Positive Relationships	24%	Positive Relationships	6%	Recognition	13%
5	Moral Correctness	24%	Recognition	5%	Positive Relationships	12%
6	Recognition	10%	Moral Correctness	3%	Moral Correctness	4%

Table 6. Order of Importance of the Work Characteristics Explaining the Meaning of Work After Excluding Atypical Subjects

However, reservations must be expressed, because there is multicolinearity among the independent variables, resulting in a loss of significance of the variables and sign inversions. Because of the multicolinearity of the variables, only two variables were retained for the subsequent regression analyses, the "Social Purpose" factor and the

"Learning and Development" factor. The regression models obtained for each sample are presented in the following Table 7 and Figure 6.

Model with the factors retained	B Non-standardized coefficients	SEB Standard error	β Beta	R^2	R^2 Adjusted	sr^2 Standard estimating error
ARC						
Constant	.602	.226				
Social Purpose	.550	.068	.546			
Learning and Development	.356	.058	.411	.782	.778	.46541
CSSS						
Constant	1.357	.188				
Social Purpose	.352	.040	.269			
Learning and Development	.401	.028	.448	.389	.388	.75053
EF						
Constant	1.834	.285				
Social Purpose	.173	.068	.162			
Learning and Development	.471	.065	.465	.333	.328	.67412

Dependent variable: meaning of work

Table 7. Regression of the Meaning of Work for Two Work Characteristics: "Learning and Development" and "Social Purpose", by sample: ARC (*Agricultural Research Centre*), CSSS (*Health and Social Services Centre*) and EF (*Engineering Firm*)

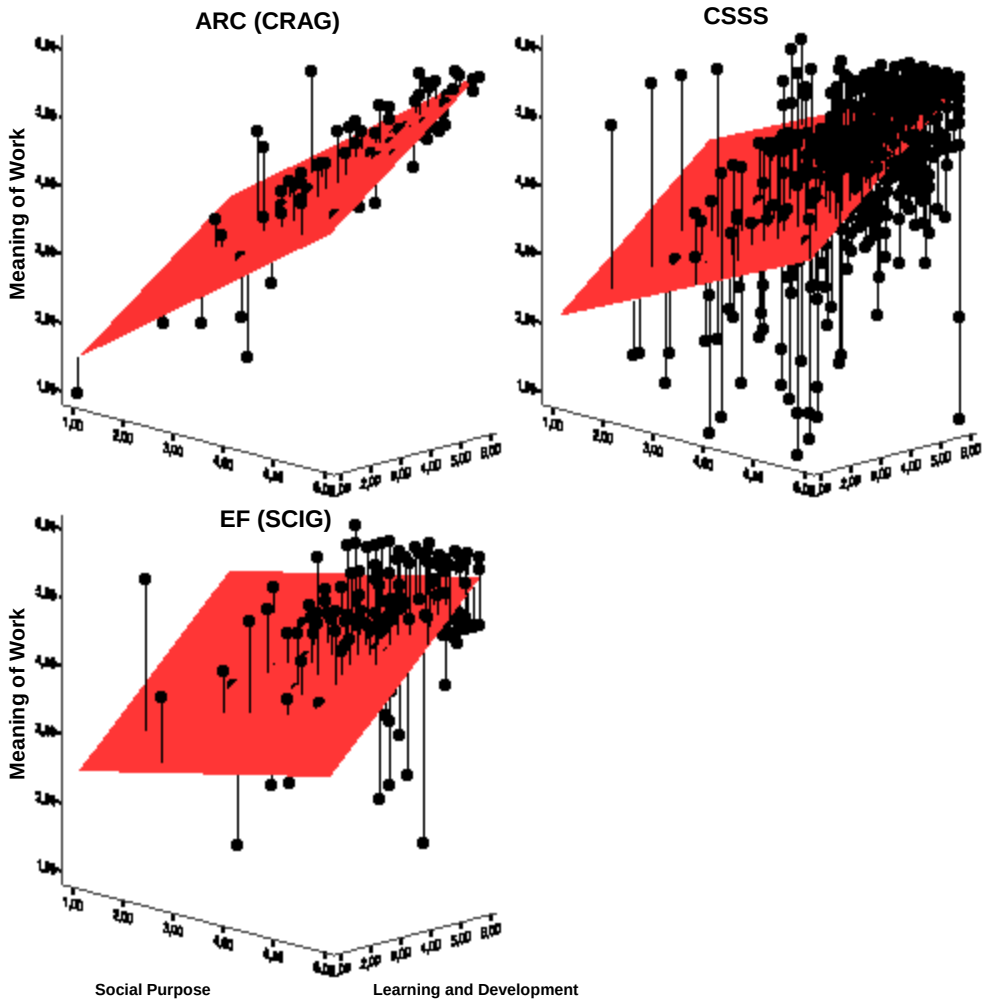

Figure 6. Graphic Representation of the Meaning of Work Regression Models with the Characteristics: "Learning and Development" and "Social Purpose", for each sample: ARC (Agricultural Research Centre), CSSS (Health and Social Services Centre) and EF (Engineering Firm)

Work and mental health

The psychological well-being perceived by the subjects was evaluated in two samples: the Health and Social Services Centre (CSSS) and the Engineering Firm (EF). There do not seem to be any differences between these two samples, except for a slightly more noticeable range for the CSSS, as the distributions presented in Figure 7 show.

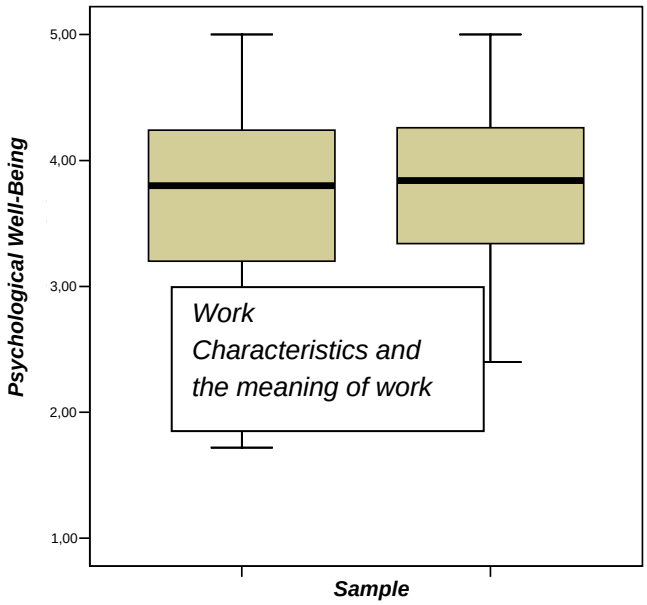

Figure 7. Distribution of Psychological Well-Being Scores for Two Samples: Health and Social Services Centre (CSSS) and Engineering Firm (EF)

The "meaning of work" variable explains a low proportion of variance of the psychological well-being score, namely 7.1% (R^2) (β = 0.261; p = 0.000). When the 6 work characteristics are considered in the regression analysis, the "Recognition" factor (β = 0.252; p = 0.000) and the "Social Purpose" factor (β = 0.172; p = 0.000) are retained, together explaining 10.1% (R^2) of the variance of the psychological well-being score. When the "Meaning of Work" variable is included with these two work characteristics, only the "Social Purpose" factor is retained in the regression model (β = 0.095; p = 0.020), suggesting a mediation effect of the "Meaning of Work" variable, which will have to be examined in the subsequent analyses.

The model that best explains the psychological well-being score (R^2 = 11.2%, p = 0.000) is formed by the "Recognition" and "Meaning of Work" variables. The results of the regression analyses for each sample are presented in Table 8.

Model with the factors retained	B Non-standardized coefficients	SEB Standard error	β Beta	R^2	R^2 Adjusted	sr^2 Standard estimating error
CSSS						
Constant	2.561	.163				
Recognition	.122	.030	.178			
Meaning of Work	.141	.030	.202	.092	.089	.64956
EF						
Constant	1.959	.303				
Recognition	.252	.058	.321			
Meaning of Work	.150	.057	.195	.190	.181	.57357

Dependent variable: psychological well-being

Table 8. Regression of psychological well-being with the "Recognition" and "Meaning of Work" variables for two samples: CSSS (*Health and Social Services Centre*) and EF (*Engineering Firm*)

The data on psychological distress were collected via the Illfeld scale (1976) for the sample from the Research Centre (ARC) and via the Massé et al. scale (1998) for the CSSS and the Engineering Firm (EF). Consequently, the Research Centre (ARC) data are not strictly comparable to those collected in the other two organizations.

Figure 8 presents the frequency distributions of the psychological distress scores for the 3 organizations.

Similarly to the previous indicator, the "Meaning of Work" variable explains the low proportion of variance of the psychological distress score, namely 4.3% (R^2) ($\beta = -0.208$; $p = 0.000$). When the 6 work characteristics are considered in the regression analysis, the "Recognition" factor ($\beta = -0.255$; $p = 0.000$) and the "Social Purpose" factor ($\beta = -0.117$; $p = 0.000$) are retained, together explaining 4.7% (R^2) of the variance of the psychological distress score. When the "Meaning of Work" variable is included with these two work characteristics, "Social Purpose" is not retained, suggesting a mediation effect of the "Meaning of Work" variable, which will have to be examined in the subsequent analyses.

The model that best explains the psychological distress score ($R^2 = 6.5\%$, $p = 0.000$) is formed by the "Recognition" and "Meaning of Work" variables. The results of the regression analyses for each sample are presented in Table 9.

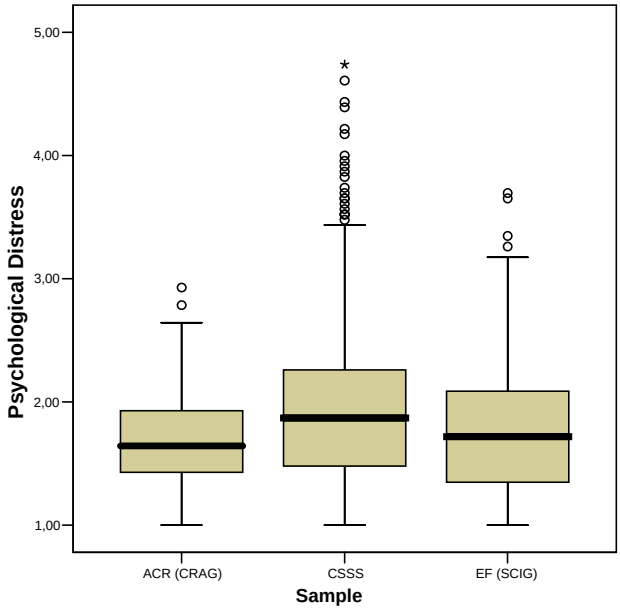

Figure 8. Distributions of Psychological Distress Scores According to the 3 Samples: ARC (*Agricultural Research Centre*), CSSS (*Health and Social Services Centre*) and EF (*Engineering Firm*)

Model with the factors retained	**B Non-standardized coefficients**	**SEB Standard error**	**β Beta**	**R^2**	**R^2 Adjusted**	**sr^2 Standard estimating error**
ARC						
Constant	2.742	.231				
Recognition	-.216	.072	-.309			
Meaning of Work	-.105	.042	-.255	.210	.191	.38252
CSSS						
Constant	2.936	.158				
Recognition	-.103	.029	-.156			
Meaning of Work	-.120	.029	-.178	.071	.067	.63190
EF						
Constant	3.211	.276				
Recognition	-.260	.053	-.370			
Meaning of Work	-.056	.052	-.081	.166	.157	.52305

Dependent variable: psychological distress

Tableau 9. Regression of psychological distress with the “Recognition” and “Meaning of Work” Variable for Each Sample: ARC (*Agricultural Research Centre*), CSSS (*Health and Social Services Centre*) and EF (*Engineering Firm*)

Work and organizational commitment

Affective commitment was evaluated in the 3 samples by means of the Meyer and Allen scale (1993). Figure 9 presents the distributions for the 3 samples. The highest affective commitment scores are observed for the Engineering Firm (EF). This organization is recognized as a choice employer in its sector of activity.

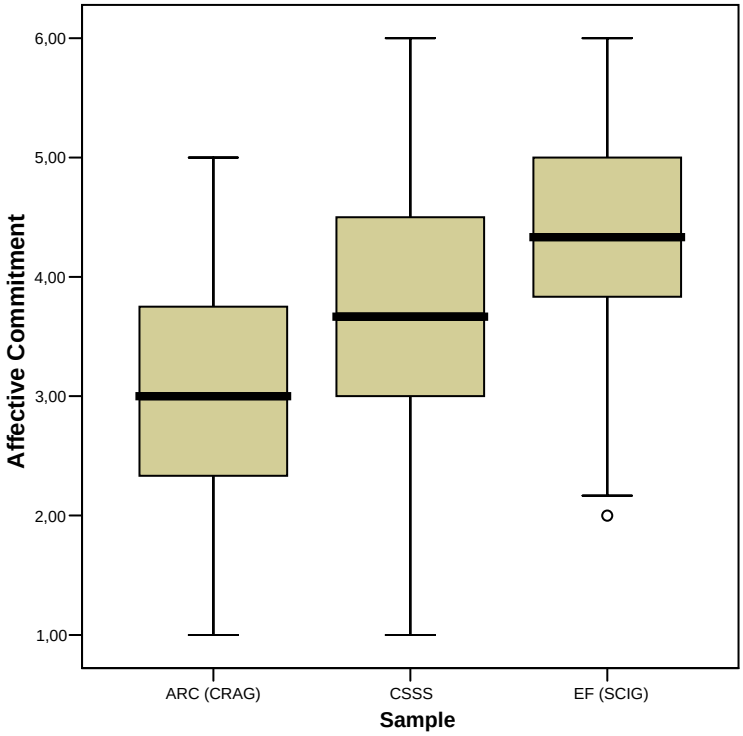

Figure 9. Distribution of Affective Commitment Scores for Each Sample: ARC (*Agricultural Research Centre*), CSSS (*Health and Social Services Centre*) and EF (*Engineering Firm*)

The "Affective Commitment" variable is best explained by the factors "Recognition" (β = 0.394; p = 0.000), "Learning and Development" (β = 0.140; p = 0.000) and "Moral Correctness" (β = 0.149; p = 0.000), together explaining 33.3% (R^2) of the variance of the affective commitment score. The "Recognition" variable clearly has a greater effect than the other variables. When the "Meaning of Work" variable is included with these three work characteristics, it is retained in the regression model (β = 0.134; p = 0.000) and the effect of the "Learning and Development" variable is no longer significant, suggesting a mediation effect of the "Meaning of Work" variable, which will have to be examined in the subsequent analyses.

The model that best explains the affective commitment score (R^2= 34.5%, p = 0.000) is composed of the "Recognition", "Moral Correctness" and "Meaning of Work" variables. The results of the regression analyses for each sample are presented in Table 10.

Model with the factors retained	B Non-standardized coefficients	SEB Standard error	β Beta	R^2	R^2 Adjusted	sr^2 Standard estimating error
ARC						
Constant	1.125	.541				
Recognition	.436	.184	.272			
Meaning of Work	-.035	.122	-.037			
Moral Correctness	.217	.111	.281	.213	.184	.87946
CSSS						
Constant	.743	.230				
Recognition	.325	.052	.297			
Meaning of Work	.199	.043	.178			
Moral Correctness	.186	.043	.205	.289	.285	.92100
EF						
Constant	.816	.383				
Recognition	.159	.078	.155			
Meaning of Work	.396	.068	.394			
Moral Correctness	.203	.069	.211	.343	.331	.67961

Dependent variable: affective commitment

Table 10. Regression of Affective Commitment with the "Recognition", "Moral Correctness" "Meaning of Work" Variables for Each Sample: ARC (*Agricultural Research Centre*), CSSS (*Health and Social Services Centre*) and EF (*Engineering Firm*)

Discussion

This research mainly sought to determine the work characteristics associated with meaningful work and explore the relationships between the meaning of work, mental health and affective commitment of employees. Thus, it can help determine concrete means of preventing the appearance of work-related psychological distress, promote the psychological well-being of employees in their work environment and promote their organizational commitment.

It was conducted in 4 organizations: a Hospital Centre (CH), a Health and Social Services Centre (CSSS), an Agricultural Research Centre (ARC) and an Engineering Firm (EF). A total of 1623 people responded to the survey questionnaires.

The first survey was conducted in a Hospital Centre, between 2002 and 2003. Difficulties originating from the different survey environments initially foreseen (i.e., another Hospital Centre and two metallurgy businesses) delayed completion of the project. It took 2 years to obtain the agreement of the administrations and the Unions before beginning the second survey, at the Agricultural Research Centre. The last two surveys were started in 2006. Between the first and the second survey, it was possible to perfect the survey questionnaire, particularly the scale of work characteristics. Between the second and the last two surveys, the Ilfeld psychological distress scale (1976) was replaced with the Massé & al. scale (1998), because of the latter scale's better psychometric qualities. In short, this project experienced the ups and downs of applied research.

In the course of this project, the following hypotheses were tested:

1. The following work characteristics are positively correlated to each other: social purpose, moral correctness, learning and development opportunities, autonomy, recognition and positive relationships.
2. The 6 characteristics are positively correlated to the meaning of work.
3. The meaning of work positively influences psychological well-being.
4. The meaning of work negatively influences psychological distress.
5. The meaning of work positively influences affective organizational commitment.

Following the correlation analyses performed on the 4 sets of data, all these hypotheses were retained.

It is interesting to observe that the "Social Purpose" and "Learning and Development Opportunities" factors have a significant effect on the meaning of work. It must also be noted that the "Recognition" and "Meaning of Work" factors best explain the variance of the psychological distress and well-being scores. These factors also best explain the variance of the affective commitment score with the "Moral Correctness" factor. In all 3 cases, the "Meaning of Work" factor appears as a mediating variable between the work characteristics and the psychological states.

Based on these results, the theoretical model presented in Figure 10 could be proposed. This model is based on the results obtained under this project and on two models: the Pratt and Ashforth model (2003) on meaningfulness of work and at work, and the Nelson and Simmons model (2003) on work stress.

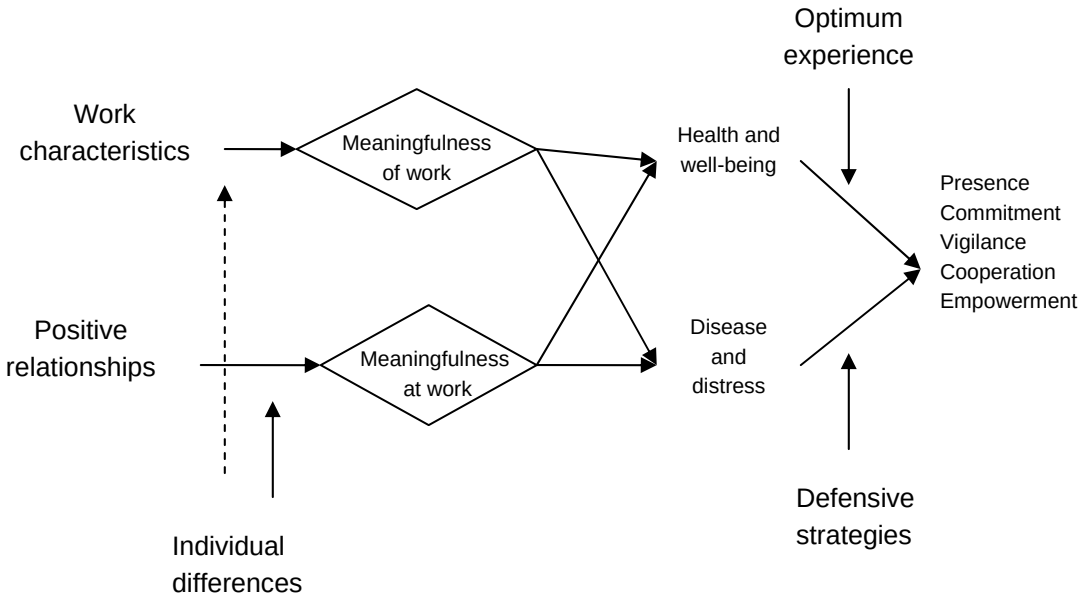

Figure 10. General Quality of Work Life Model

In this model, job design is presented as determining employees' health, attitudes and performance. The impact of job design on the health and work performance of individuals varies according to the meaning the employees attribute to it.

If the individual has a positive perception of his work (daily, concrete activities), the conditions under which he performs his work (health and safety conditions, physical environment, labour relations, etc.) and the relationships resulting from his work (with his superior, his colleagues, the clientele, etc.), then he will tend to find meaningfulness in work and at work, and consequently feel physically and mentally well. He thus will be inclined to show up for work on time, be committed to work activities, be vigilant in the performance of his duties and cooperate with other people to achieve the objectives set and to produce the expected performance.

On the other hand, if he perceives his work negatively, he will tend to find that his work and his work environment are meaningless and to exhibit symptoms of stress, and even of distress. To maintain his presence at work, his commitment and an acceptable performance level, he will have to mobilize defensive strategies. When these strategies are exhausted, his results will deteriorate: absenteeism, disaffection, conflict, minimalism.

The meaning that individuals give to their work and to the relationships that result from it depends on several individual factors or differences, including gender, affective trait and attribution style (Nelson et Simmons, 2003). Consequently, these factors must be

controlled to understand the relationships among work, health and individual performance indicators.

Work is meaningful for employees in organizations where quality of work life (QWL) prevails. Accomplishing tasks requires mobilization of complex competencies and exercise of judgment. The Management nurtures a participatory management culture, encouraging cooperation and facilitating conflict management, stimulating employee commitment and personal and organizational effectiveness. The results of such management practices are also beneficial for employees health and safety (Olafsdottir, 2004).

Donaldson, Sussman, Dent, Severson and Stoddard (1999) studied the relationships between quality of work life and organizational performance indicators in a lumber industry company, by means of interviews, questionnaires and archival data. The results of their study reveal that QWL practices strengthen organizational commitment and reduce the absenteeism rate and the frequency of lateness. In another sector, the Post Office, Mikkelsen and Gundersen (2003) studied the results of development of participatory management practices. This program had lasting beneficial effects on the development of employee autonomy and on psychological well-being and health.

May, Lau and Johnson (1999) studied 146 American companies for five years and found that, contrary to popular opinion, companies with a high quality of work life realized better profits and higher growth than those with less. In this longitudinal study, QWL companies tend to attract very talented employees, thus improving their competitiveness and better ensuring their sustainability. They conclude their research by affirming that long-term financial performance can only be sustained to the extent that executives put the conditions in place to give their employees a good quality of work life. Gard, Lindstroem and Dallner (2002) interviewed 640 real estate appraisers and found similar results.

Shoaf, Genaidy, Karwowski and Huang (2004) show that the pursuit of high financial goals is not incompatible with the prevention of health problems at work or the promotion of employee health and well-being – quite the contrary. They explain how it is advantageous for managers to organize work so as to promote employee health, because this results in beneficial effects for the company's sustainability and profitability.

The connection between QWL and financial performance is difficult to explain, because organizations are complex systems and the interactions among the different organizational performance factors are also very complex. Moreover, an organization's financial performance results from a multitude of variables, including the quality of the board of directors and the decisions made by management, the economic and political context, the quality of labour and technology, etc. With this reservation in mind, however, it is possible to formulate hypotheses to understand this connection. In fact, employees who work in a quality environment exhibit less mental or physical health problems, are generally diligent in their work and are committed to what they do. They are also encouraged to take responsibility in the performance of their duties, improve themselves to perform their work better and show creativity when they face unusual situations, thus adding value to what

they do. The very concept of profitability is based on the concept of value added, probably resulting in better financial performance.

Conclusion

Meaningful work is useful for society or for other people. Organizations in which the prevailing logic is excellence and the search for new challenges seek to strengthen the values of competition and individualism, while the values of cooperation and community wither away (Freeman and Rogers, 1999; Morin, 1996). Management and organizational modes that favour "everyone for himself" have devastating effects on the workplace climate and on employee commitment. As the research on work orientations shows, individuals tend to look for work that allows them to feel useful, fulfill themselves as human beings and participate in a common effort. The cynical attitudes we see developing in organizations may reflect the employees' disappointed expectations.

Like the Sociotechnical Model, it is important to do something that serves a purpose or other people, that makes a contribution to others or to society. Managers have an important role to play in this regard. They must have the competence and integrity to clarify expectations and give their employees clear orientations that are coherent with the purpose of the organization they run.

Work is meaningful when it is performed responsibly, not only in its execution, but in the products and consequences it generates. Moral correctness is another dimension that is fairly rare in job design models. It is possible that recent corporate scandals have led to awareness of moral correctness of social and organizational practices. Indeed, ethical and moral problems are a growing workplace concern (Davezies, 1999; Dejours, 1993; Pauchant et coll., 2002). For example, Jackall (1996) describes the moral dilemma managers face when they are witnesses to the mediocrity of decisions made regarding employees. They feel trapped between their personal values of justice and honesty and their career ambitions. While some choose to act as their conscience dictates, others sacrifice their morality and play the "survival" game. Courpasson (1997) observed the same phenomenon among French managers: if a manager wants to rise in the company, it is essential that he master the art of being seen and recognized by his superiors, no matter what the means. Needless to say, such actions have a price: personal integrity.

Work is meaningful when it is performed in a context that respects human values, in an environment that respects justice, equity and human dignity. Aronsson et coll. (1999) found the same result in their survey. Managers thus have the duty to respect their employees, their time and their well-being. They must have the courage to make strategic decisions to promote employee health and safety, justice and equity. They must also ensure that work and organizational practices show consideration for human dignity. They must support employee efforts and initiatives and encourage them to help each other when they encounter difficulties.

For work to be meaningful, it must also provide pleasure to the person who performs it. It must correspond to his fields of interest, call upon his skills, stimulate development of his potential and allow him to achieve his goals effectively. It is important to ensure the quality of hiring and promotion decisions, the effectiveness of training programs and employee participation in decisions concerning their job design.

For work to be meaningful, it must also allow the individual who performs it to exercise his skills and judgment, show creativity in problem solving and have a say in the decisions that concern him. For this purpose, it is important to institute management practices that promote trust within organizations. This also necessitates the restoration of human dignity in contemporary managerial practices.

For work to be meaningful, it must be performed in an environment that stimulates development of positive professional relationships: do work that allows interesting contacts, positive relationships, development of closeness with colleagues, exercising influence in his environment. Managers must ensure positive relationships in their departments. They set an example by their own attitudes and behaviours. They must also have the courage to set the rules of good conduct within their team, encouraging everyone to respect each other and keep their commitments. Managing also involves exercising moral leadership, because the power conferred by skills or position in the organization must be exercised for the common good. The value of leadership is expressed in leader's ability to preserve and promote core values.

Work exercises great influence on employee motivation, satisfaction and productivity (Herzberg, 1980; Hackman and Oldham, 1976), by having people deal with job design. The underlying principle of job design is to modify behaviours so that employees gradually are induced to develop positive attitudes to their work, the organization that employs them and themselves.

This study reveals some of the implications of sound management of work in organizations. To prevent the emergence of psychological distress symptoms, managers should:

- Give their personnel clear orientations and stimulating objectives coherent with the organization's strategy;
- Value and recognize individuals' results;
- Recognize the skills of their personnel;
- Adjust the workload to each individual's capacity and resources;
- Provide very concrete support to their team.

Such practices probably could reduce stress to an acceptable level and show consideration for the employees' ability to cope, but this would not stimulate their commitment to their work. To accomplish this and promote the employees' psychological well-being and performance, managers should also:

- Ensure that all employees enjoy their work;
- Give their team enough leeway to organize the work in the way they consider most effective;
- Allow their personnel to exercise their judgment and influence in their work environment;
- Facilitate the development of positive and significant professional relationships;
- Assign responsibilities to their personnel and facilitate their professional development.

The 21st century offers opportunities to promote health at work. The development of new technologies, globalization of trade, retirements and integration of new recruits from Canada and abroad, the challenges posed by climate change and the emergence of countries like China, India, Brazil and Russia will lead to major changes in job design values and modes and, we hope, will result in development of collective awareness, restoring an important place to human dignity and democracy in our societies.

Applicability of the results

This research has already borne fruit in the 4 organizations in which it was conducted.

For example, at the Hospital Centre, the following measures were taken to improve the quality of work life for employees:

1. Coaching for people in supervisory positions to improve the superior-subordinate relationship and supervisory practices;
2. Assistance to employees in difficulty in food services;
3. Training for employees in teamwork and conflict management.

At the Agricultural Research Centre, the following actions were taken:

1. A committee to study researchers' workload;
2. The development of recognition practices valued by the staff;
3. Increasing staff awareness of the values and rules of life considered important to create a healthy and stimulating work environment.

At the CSSS, the following activities were determined:

1. Psychological support for staff and teams;
2. Job redesign projects in the units concerned;
3. Development of everyday recognition practices;
4. "Hats off"
5. Health and fitness program;
6. Chair massages;
7. CSSSHY adherence to the 0-5-30 program;
8. Recognition of years of service of staff and physicians and events to mark retirements.

A the Engineering Firm, two actions were implemented:

1. Training managers in emotional intelligence;
2. Development of a feedback program on the quality of the superior-subordinate relationship.

Eventual spinoffs

- Publication of the results at the different stages of the project in scholarly and professional journals.
- Presentation of the results in the organizations involved and in the work environments.
- Presentation of the results in national and international scholarly forums.
- Development of a diagnostic tool on job design.

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List of Dissertations and Theses

Jean-François Denis, Ph. D. psychologie, Université de Montréal. Thesis title: Le sens du travail : validation d'une mesure des caractéristiques valorisées du travail et vérification empirique d'un modèle sur le sens du travail en fonction de la cohérence du travail. (2002)

Joëlle Breault, M.Sc. management, HEC Montréal. Thesis title: Traduction de l'échelle du sens de cohérence et vérification de ses qualités psychométriques. (October 2005)

Elena Stoeva, M. Sc. Management, HEC Montréal. Thesis title: Les relations utiles de la perception qu'a l'employé avec son supérieur et son niveau d'engagement organisationnel. (2007)

Alina Nieto, M.Sc. Management, HEC Montréal. Thesis title: The quality of work-life. The effects of the work-life imbalance in consulting firms: the case of an engineering firm. (2007)

Catherine Bouffard, M.Sc. Gestion des ressources humaines, HEC Montréal. Thesis title: Travail posté et santé physique et mentale: le rôle médiateur des habitudes de vie (2007).

Katherine Maranda, M.Sc. Gestion des ressources humaines, HEC Montréal. Thesis title: Le sens du travail et le bien-être psychologique. (2007)

Anna Potvin, M.Sc. Gestion des ressources humaines, HEC Montréal. Thesis title: Les caractéristiques du travail, la santé mentale et l'engagement affectif (in progress).

Émilie Desgroseilliers, M.Sc. Gestion des ressources humaines, HEC Montréal. Thesis title: Les relations au travail, la santé mentale et l'engagement affectif (in progress).

Cindy L'Heureux, M.Sc., Gestion des ressources humaines, HEC Montréal. Provisional thesis title: Le sens du travail et la détresse psychologique (in progress).

Annie Joannette, M.Sc. candidate, Gestion des ressources humaines, HEC Montréal. Provisional thesis title: La qualité de la supervision et la qualité des services de santé (in progress).

Micheline Brisson-Bono, M.Sc. Management, HEC Montréal. Provisional thesis title: L'équilibre travail et vie privée et le bien-être psychologique chez les femmes travaillant dans les établissements de santé et de services sociaux (in progress).

Marian Luncasu, Ph.D Management, HEC Montréal, Provisional thesis title: Le sens du travail, la motivation et la santé mentale des travailleurs (in progress).