Innovation and the Role of Habits:

A Conceptual Analysis

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ABSTRACT

In this paper I explore the concept of innovation. The aim is to bring to the fore
the importance of learned habits on the motivation to innovate. Innovation is a
learning process which results in a new product, a new process, a new
movement, a new organisation or a new source of raw materials. It arises out
of scientific activity (e.g. Research and Development), individual invention
(e.g. “garage or computer” inventor), group strategy (e.g. future search
meetings) or exploration of new environments (e.g. mineral exploration).
However, innovation requires the input of innovative individuals within any of
the above contexts.

Individuals learn within a frame of reference created by their education and by
their social and organisational systems of rewards. This frame reflects how
habits of thought and of behavior are ‘passed on’ and perpetuated, and how
information, skills and the motivation to innovate evolve. Habits however,
embody a double-edged outcome. Habits can lead to innovation, habits can
also hinder innovation. This paper identifies this double-edged outcome and
examines the gap in the innovation literature on the importance of fostering
the individual’s psychological motivation (or habit) to innovate. It seeks to
provide a theoretical framework that enables a link to be drawn between
management innovation, industrial relations and education policies.

Key words: continuos innovation, radical innovation, commitment, habits

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1. INTRODUCTION

“Invention arises from creativity, while innovation arises from invention. Innovation is not the last step in this sequence; innovations must be implemented through small and large changes in organisational practices before they can become operationally successful” (Harkins and Fiala, 2002).

Innovation is generally defined within the economic realm of successful technological change. However, innovation can be social, institutional, organisational as well as technological. The common factor amongst these types of innovation is to be found in the motivation to innovate, which creates the culture that fosters and maintains innovation. Some innovation is conducted outside of organisations, others within organisations. This paper investigates innovation within an organisation, where the motivation to innovate is embedded in its culture. This motivation is transmitted with norms and habits of behaviour learned within the organisation, and flourishes with the influence of the innovative leader.

In general, and in management practices and human resource management in particular, little attention is given to the role of learning habits in the process of innovating. This discrepancy overlooks an important influence on innovation, as habits can both maintain or hinder innovation.

The Australian Department of Industry, Tourism and Resources, for example, defines innovation in the following way: “Innovation is about ideas and the transformation of those ideas into value creating outcomes – into products, processes and services… Innovation is about the creation of new knowledge, and the use of that knowledge.”

The Australian Bureau of Statistics (Themes, 2007) defines innovation as “the process of developing, introducing and implementing a new or significantly improved good or service or a new or significantly improved process”. Innovation is also considered an output of production, which is implemented at stages. There are three stages: “a stage of inputs, such as R&D [Research and Development], a stage of throughput, such as co-operation, and output, such as innovations” (Klomp, 2001:2).

Innovation in the form of R&D is generally measured in terms of expenditures’ intensity. Intensity is given by expenditure on innovation as a percentage of turnovers, which is compared with other organisations’ R&D intensities, or some benchmark level of high R&D. Innovation intensity represents the difference between the rankings for the input and the output indicators. This is an important variable. Large multinational firms would display high innovation intensity, while the small firms would have low intensity, and the latter, would benefit less from government’s investments (Klomp, 2001).

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The planning of expenditures and future investments for innovation rely on R&D intensities as a measure of innovative activity within an established firm. This overlooks the important role of small firms, and their need for government financial support, but also overlooks the important role of the individual innovative entrepreneur, and the investments needed in management practices and training to foster and maintain innovative human capital.

Innovation is a process which results in a new product, a new process, a new movement, a new organisation or a new source of raw materials. It arises out of scientific activity (e.g. Research and Development), individual invention (e.g. “garage or computer” inventor), group strategy (e.g. future search meetings) or exploration of new environments (e.g. mineral exploration). Nothing in the academic literature on innovation says anything about the importance of investigating the capabilities of individuals to be innovative, and how to foster and maintain them. This is the reason why a common problem within studies on innovation is the difficulty to clearly identify its determinants.

Recently, a proposed framework of analysis of innovation emphasized the importance of the ‘situational conditioning’ of individuals in determining a ‘continuous’ or a ‘radical’ type of innovation (Courvisanos, 2007). The argument stemming from this framework is that political and social systems, within which innovative individuals and firms operate, are fundamental in shaping the outcomes of innovation, but most importantly in making innovation possible.

This paper takes this argument a step further. It investigates how the social and organisational norms influence innovation by focusing on habits and their influence on the motivation to innovate. It seeks to extrapolate the variables that determine innovation by investigating how individuals and organisations learn how and what to innovate.

This paper extends the current framework of analysis of innovation by including the role of habits. It is divided into the following sections. Section 2 presents a review of the literature on innovation. Section 3 presents a discussion on habits and the importance of the workplace culture in the formation and perpetuation of habits. Part 4 presents a discussion on the importance of social rewards. Part 5 focuses on management practices that foster the motivation to innovate. Part 6 proposes a framework of analysis of innovation. Part 7 is my conclusion.

2. INNOVATION

Innovation can be social, institutional, organisational as well as technological (McKelvey, 2007:367). Innovation is ‘continuous’ or ‘radical’ according to the types of changes that are brought about. It can be ‘soft’ or ‘hard’, according to the amount of capital needed to innovate; the latter type requires greater capital. Moreover, innovation is also considered a cultural factor embedded in organisations and their people (Gemünden, Salomo and Hölzle, 2007; Lee & Na, 1994). It reflects a process of transformation of knowledge; given the
existing ways of innovating, this process converts new knowledge into new products and services (Audretsch, 2006); and in doing so, innovation creates value and increases efficiency (Kodama, 2007; Mytelka, 2004).

Innovation is a process of learning, and as such, it is subject to the existing habits of behaviour and of preferences for actions that innovate. Learning is a natural proclivity of individuals. They adapt to new and more complex environmental demands. However, the process of adaptation needs to have a purpose.

Innovation to take place needs the commitment of the organisation to do so (Danison and Mishra, 1995). Therefore, the reasons why innovation demands entrepreneurial action is to create the commitment of the workplace to innovate (Danison and Mishra, 1995), but also, to change the beliefs of what is considered commonsense.

The commitment to innovative creates a culture that emphasises the priorities of actions and of learning that lead to innovation. The motivation to innovate reflects the ‘spirit’ of the innovative business; and it evolves around the characteristics of the innovative entrepreneur (Gemünden, et al., 2007; Lee & Na, 1994). It is important to note that the culture of the organisation and its system or rewards create a learning environment, within which the value of what is purposeful and what is not, is acquired (Gintis, 1974).

The culture of the organisation, therefore, affects the habits of behaviour and of thoughts of its people. However, it is the learning of the cultural norms common to the organisation that determines what priorities of actions are preferred in order to innovate.

Innovation is argued to be systemic (Groenewegen, Vromen, 1999). This is the reason why the process of learning the ‘how and what’ to innovate, and the formation of habits within the culture of the organisation, need investigation. What is common amongst these views is that innovation reflects an intertwined process of adaptation and change that arises from a complex interaction between individuals, organisations and their operating environment.

Innovation also reflects a movement that is away from the ordinary and commonplace ideas, but that is towards the unknown and the uncertain. Therefore, innovation is risky in two ways. First, it is risky, and so financially costly, because often there is no knowledge ‘a priori’ about the possible outcomes; and second, it is risky because of the commonsense approach applied to decision making when information is limited. This ‘commonsense’ approach reflects the values and beliefs that are common to the organisation, but that, if too conservative and risk averse, can hamper innovation. Therefore, innovative projects can be eliminated simply on the commonsense beliefs of how and what to innovate.

While the problem of the ‘a priori’ knowledge can be overcome by connecting firms with external suppliers of information, such as universities, scientists,
and final consumers, which decrease the probability of failure; the problem of overcoming the commonsense approach to choices is more difficult. The obvious option to choose is for firms to seek the services of innovative entrepreneurs. Such people have personal characteristics and skills capable of charismatically influencing colleagues and stakeholders in their decisions; they create a degree of tolerance to risk; in doing so, they influence the common beliefs of what and how to innovate.

3. LEARNING HABITS TO BE INNOVATIVE

Habits are the conservative mechanisms of learning. They represent “an attempt to solve a present problem by using a previously successful solution” (Maslow, 1954:272). They are a human proclivity and a natural endowment (Maslow, 1954; Mill, 1970; Veblen, 1913 [1994:39]).

As a human natural proclivity habits are necessary, but this disposition can be reinforced by the ethical values shared within any organisation, or social setting (Hodgson and Knudsen, 2004:35-37). Habits help to form a frame of reference, within which information in learned and actions are prioritized (Tversky and Kahneman, 1986; Becker, 1996). They are also “a means by which social conventions and institutions are formed and preserved”... so that habits are simultaneously “an instrument of adaptation and yet they hinder adaptation” (Maslow, 1954:277) by preserving old traditions.

The frame of reference within which individuals learn to prioritize actions is of particular importance. There are two types of reference frames: inertial and non-inertial. An inertial frame of reference reflects a linear process of learning. In this instance, habitual behaviour reflects a time economizing process on decision-making (Becker, 1996). A non-inertial frame of reference, on the other hand, reflects a more complex process of learning, which is non-linear. In this instance habitual behaviour is reinforced by social ethical beliefs. It reflects “a means by which social conventions and institutions are formed and preserved” (Hodgson et al., 2004:36).

There are very many different interpretations of how individuals prioritize actions. What is common is that the process of prioritizing is learned, and becomes an automatic response to stimuli. In this prioritizing process however, what is purposeful and what is not is also acquired, which suggests that this priority is subject to the influences of norms and expectations shared within the organisation.

The habitual choice of priorities becomes simultaneously a conscious as well as non-deliberative choice (Hodgson, p. 304). However, as a non-deliberative response, habits can become customs and traditions that are difficult to eradicate. They deliver stability, but with the risk that they do not create any prejudice against current arrangements (Collini, 1989:133; Skitovsky, 1997; Veblen, (1994 [1913]).

In the process of learning what is purposeful and what is not is also acquired. This further acquisition sets the individual's moral boundaries of what is
acceptable and rewarded. This is the reason why expectations and values that are shared within organisations can affect the individual's ability to change, and so the motivation to be innovative. Rewards and leaders reinforce types of habits within the organisation.

Individuals can become accustomed to these arrangements, thereby creating 'fixed' habits of thoughts that hamper innovation in the long term. However, as a non-deliberative response, habits can be altered by a system of rewards, which can maintain innovation and creativity in the long term. The role of rewards is investigated in the next section.

4. REWARDS, HABITS AND THE MOTIVATION TO INNOVATE

Rewards play an important role in eliciting the motivation to innovate. The innovation management literature recognizes that innovation in the workplace requires persons who commit themselves with enthusiasm and self-motivation. Innovation and innovations require great cognitive demands and a highly sophisticated work environment.

Rewards alter the processes by which people control their thoughts, feelings, and behaviours, just like coercion does (Deci & Ryan, 1985; 1987; 1999). In particular, rewards which satisfy the needs for self esteem and belongingness, or the non-pecuniary or 'immaterial', have great power over human behaviour. They affect the willingness to commit to various activities.

In management, commitment is defined as a non-instrumental attraction to, and identification with, the goals and values of the organisation. Commitment responds to the non-instrumental system of rewards (Gaertner and Nollen, 2005). These rewards range from security, esteem, opportunities, autonomy, the demands of work (workload, pace), the control of work (autonomy, learning, participation); to the general conditions of living within and outside the workplace (Benavides, Benach and Muntaner, 2002; Kuper et al., 2002).

The culture of the organisation influences the system of rewards and so, the commitment to innovate (Danison and Mishra, 1995; Kerr and Slocum, 2005). This suggests that the needs for self esteem and belongingness can only be satisfied if these organisational values are matched. Organisational needs, however, can differ greatly from the needs of innovative individuals.

In Australia, for example, the common purpose of the organisation is primarily dictated by management cost-minimizing policies (i.e. unitarist approach to management practices)\(^2\). In particular, if work is organised to support high levels of discretion and flexibility there is a positive relationship with job satisfaction, performance and innovation. However, little is known about the effects of decentralization and deregulation of the workplace on the motivation to be innovative.

\(^2\) For a comprehensive definition of this approach, see Bray et al. (2005).
While it is widely accepted that commitment responds to non-pecuniary rewards, and that these rewards satisfy the needs for self-esteem and acceptance (Amabile, 1997), less emphasis is placed on the fact that human behaviour is primarily drawn by these rewards, and that in order to guide commitment to specific types of activities, the incentives do not need to be pecuniary, but they depend crucially on management prerogatives.

5. MANAGEMENT AND THE MOTIVATION TO INNOVATE

The innovation management literature recognizes that innovation in the workplace requires persons who commit themselves with enthusiasm and self-motivation in order to discover new products, processes or ideas (Hans Georg Gemünden, Sören Salomo, Katharina Hölzle; 2007). Studies on the roles and the characteristics associated with these ‘innovators’ focus specifically on the influence that they have on the organisational ‘spirit’ to innovate.

Deregulation of the workplace and increased flexibility are fundamental in increasing both commitment and performance (Daft, 2001; Laschinger et al., 2001). Hage (1999:603), for example, recognized that teamwork, in which employees are responsible for quality control and performance has a “multiplier effect” on the amount of innovation produced.


Studies in management practices emphasise both a supervisory as well as a supportive role of management. Management has to ensure that the satisfaction from work increases organisational performance, commitment and, so, innovation (Spreitzer, 1995). In particular, where work is organised to support high levels of discretion in solving complex problems, firms tend to be more active in terms of in-house innovations, rather than supplier-dominated innovation strategy, which is typical of systems where little discretion is left to the employee (Arundel, Lorenz, Lundvall and Valeyre, 2007).

The adoption of both ‘high performance’ work practices (HPWP) and delegation of authority in decision-making, lead to greater performance and innovation (Colombo, Delmastro and Rabbiosi, 2007). Deregulation and flexibility, however, is also associated with long hours of work and stress. In order to understand the systems of innovation, it is necessary to focus on the way work is organised, on the types of workplace stress, and their impact on learning and innovative thinking.

In fact, little is known about the effects of decentralization of authority, deregulation of the workplace, flexibility, and complexity of tasks on the
motivation to commit time to paid work, the performance expectations of the workplace, and on the motivation to be innovative. Psychological studies on the complexity of work and work commitment, for example, argue that complexity creates stress that negatively affects the ability to plan the allocation of time and skills between activities (Schabracq, Winnubst, Cooper, 2003; Benavides et al., 2002; Wickens, Hollands, 2000:485-6; Kuper et al., 2002). Therefore, while complexity triggers the motivation to innovate, complexity can also negatively affect the motivation to commit and to be innovative.

Stress is usually of two types: “good stress” or eustress, and “bad stress”, or distress; while ‘eustress’ is associated with job satisfaction, which increases the commitment to strive at work, ‘distress’ represents feelings of ‘time pressure’, overwork, failing and not coping (Selye, 1956; Le Fevre, Matheny and Kolt, 2003). Individuals respond to stress in the same manner. They seek to balance the amount of external stimuli with internal responses. To match an increased complexity of tasks (i.e. multi-tasks jobs), a greater cognitive input (time and skills) is required.

This ‘extra’ amount of input, however, needs to be rewarded or the balance between stimuli and responses is negatively affected. The longer individuals are involved in these high psychological demands at work, the more an imbalance between the motivation to commit and its ‘non-pecuniary’ rewards for self-esteem and social acceptance is created (Kuper et al., 2002).

An imbalance between rewards disrupts creativity and narrows the process of thinking in decision making (Wickens & Hollands, 2000:485-6); it negatively affects the ability to plan the allocation of time and skills between activities, both within and outside the workplace (Ajzen, 1985; 1991; Claessens et. al, 2004); and it creates a psychological dependence to the type of rewards of self-esteem and acceptance (Kasl and Cooper, 1995).

Overexposure to stimuli of a complex workplace creates an imbalance of rewards which affects innovation in two ways: it narrows the process of thinking, and it creates dependence and tolerance to the expectations of the organisation. In the long term, dependence and tolerance negatively affect the culture of the organisation and so, innovation.

6. THE CONCEPTUAL FRAMEWORK

The process of innovation is currently analyzed within a ‘spectrum’ of two extremes. Innovation, whether technological or social, evolves as a ‘continuous’ or a ‘radical’ type, depending on the ‘situational conditioning’ of individuals. Continuous innovation is the result of small, but nevertheless important, changes within the system, while a ‘radical’ type of innovation brings about a ‘disruptive’, but necessary, changes of the pre-existing system (Courvisanos, 2007).

This spectrum encapsulates all types of innovation within systems of social and political institutions; and it emphasizes that extreme systems, such as
highly constrained or highly free systems, hamper innovation. Innovation is also a natural proclivity and these systems guide the natural proclivity to innovate. The process itself becomes an embedded cultural and social belief of what and how to innovate in terms of habits of thoughts and of behaviour. Therefore, to identify and categorize the ways in which individuals and the environment affect innovation the role of habits is introduced.

Innovation is a process of learning how and what to innovate, and it is subject to the system of rewards that characterize a rigid (closed) or an open flexible system. Their rewards system guide habits of behaviour. Habits are adaptive towards the centre of the spectrum. The centre represents a balance of rewards. However, habits become customs and traditions, or fixed, towards the extremes.

The framework shows that habits to innovate are adaptive in between highly constrained and highly free systems. The non-deliberative characteristic of habits, however, is highly affected at the extremes of the spectrum, where the aims and investments are guided by ‘centralized’ government directives, on one extreme, and ‘stakeholders’ objectives, on the other extreme.

At the extremes, the ‘fixity’ of investment, management and workplace policies, influence the beliefs about the types of rewards, and so the priorities of actions for innovation. The extremes represent specialized norms and regulations, which, in the long term negatively affect the process of change.
Framework

<table>
<thead>
<tr>
<th>Regulated Centralized System</th>
<th>Deregulated Decentralized System</th>
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<tr>
<td>Hard Innovation prevails</td>
<td>Soft Innovation prevails</td>
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<tr>
<td><strong>Routine</strong></td>
<td><strong>Complexity</strong></td>
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Balance between Complexity/Routine

*Positive Stress*

*High Motivation*

Adaptive habits

Innovation

- **Overexposure** to routine: Negative stress
- **Fixed Habits**: Loss of Motivation

- **Overexposure** to complexity: Negative stress
- **Fixed Habits**: Loss of Motivation
6.1 Application of the Framework

The framework categorizes types of rewards by social and/or organisational systems. It explains that there are both positive and negative outcomes on learning to be innovative from the systems of rewards.

Hard innovation, or organised Research & Development (R&D), is fostered primarily in regulated, centralized systems. These systems promote activities that are science based, and are characterized by strategic investments in high-risk/high-return radical innovation (Ettlie & Rubenstein, 1987), or low-risk/low-return incremental innovation (Chiesa 2001).

Systems of this type improve certain areas of innovation but can not maintain innovation in the long term. The reasons for limited innovation are to be found in the degree of control in assessing the riskiness of projects (Mansfield, 1968: 62, and Reeves, 1958). On the other hand, soft innovation is fostered primarily in deregulated decentralized systems. Innovation is promoted with activities aimed at exchanging information between firms, high skilled employees (engineers), 'specialized suppliers', and the final users (Fagerberg, Mowery, Nelson, 2005).

Hard innovation has been fostered in highly regulated systems; while soft innovation has developed in deregulated and more flexible environments. However, history shows that decentralized and deregulated economic systems, cannot maintain innovation in the long term. In both systems there is very little protection to the risk of failure (Gerschenkron, 1962).

In centralized economies innovation is funded primarily by the government. In decentralized economies, projects are financed by many financial institutions; but they too require the assessment of the risks associated with new projects. In decentralized economies firms need to raise capital from the stock market (Holmstrom, 1989), rather than from the government, however, both systems are subject to the availability of capital, information, and the administrative formalities that affect the priorities of the firm in terms of the types of projects to invest in.

In centralized systems, the formalities lead individuals to comply with government directives and priorities about what to innovate. Very little effort and commitment is required from managers and individuals to be innovative themselves. There is, thus, a similarity between centralized and decentralized systems. Management and potential innovators need to comply with directives, whether government or stakeholders directives, in order to gain financial support (Hayek, 1945; Berliner, 1976; Kornai, 1980; Deardon, Ickes, and Samuelson, 1990).

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Footnote 1: For example, in the early 1960s the USSR achieved great success in launching the first unmanned satellite and the first manned space capsule; while in the 1980s, in contrast, they failed to develop computers which were the core of the "Star Wars" program (Qian and Xu, 1998)
In both systems, innovators need to overcome administrative barriers, and a greater degree of motivation is required. Fundamentally both systems face the inherent uncertainty of innovation that leads "the vast majority of attempts at innovation" to fail (Rosenberg, 1994). Therefore, the secret of success is the willingness to let projects fail. Innovation defined only in terms of scientific knowledge limits the measures of 'riskiness' of projects in both systems.

In both systems, it is the availability of capital and of information that affect the priorities of the firm in the choice of projects. The lack of, and the limitations to, acquisition of capital and information discourage the undertaking of long-term risky innovation projects. Therefore, even in decentralized systems, large firms may still favour routine projects rather than innovative projects. The internal evaluation of routine projects is relatively easier.

Recently, to overcome this problem large corporations are seeking to innovate by employing innovative business leaders. Innovative entrepreneurs are able to motivate the internal workforce to be innovative; they influence the work culture in order to accept challenges and risks; they create a degree of tolerance to risk both within the workplace and amongst stakeholders. Innovative entrepreneurs have the ability to influence the priorities of what and how to innovate.

Subject to the definition of innovation, management and industrial relations policies can be introduced to create new opportunities to innovate. Innovation represents a process of learning; but learning is affected by the structure of rewards within each organisation. Therefore, workplace practices, management policies, education and government policies affect the system of rewards, and so, learning; thereby contributing to, or harnessing the, creation and diffusion of innovation. The system of rewards help to create a culture of common values and beliefs in every economic, social and political organisation, and innovation, as a learning process, is intertwined with these values in terms of how and what to learn to innovate.

6.2 Management Practices and Innovative Labour

The crucial issue with respect to learning is that change in knowledge underlies inter-temporal and international shifts in production functions. In this view, the learning process represents the acquisition of knowledge as a product of experience, but this production of knowledge is based on a non-routine problem-solving experience (Arrow, 1962:157).

These non-routine activities produce the characteristics of autonomous workers, and are displayed in any activities individuals are involved in. The higher the education and broader the individual experiences, the greater the capability to self-awareness and growth. It means that the individual not only shows intelligence and knowledge, but also creativity, individuality, and sees more relationships in what they know. Individuals do not just 'regurgitate knowledge', and apply the skills learned in the past, but they also seek for their potentials in any social situation (Herzberg, 1968: 57-70). Routine
activities produce a different type of learning, and thus, of human capital and labour characteristics.

From recent management studies, it is clear that innovation demands entrepreneurial action (Gemünden H. G., Salomo S., Hölzle K., 2007). Innovative entrepreneurs possess the skills that foster the commitment of companies and individuals to be innovative and to innovate. To discover new products, processes or ideas, the workplace demands skills that are common to highly committed workers; but these skills need to be maintained in order to promote the motivation to innovate in the long term.

Generally, high-skilled labour is employed as functional labour. The functional characteristics of labour are analysed by various managerial theories. Post-Fordist theories, exemplified by the work of Piore and Sabel (1984), Walton (1985), Mathews (1989b), advocate flexible specialization, which concentrates more on high skilled, motivated and committed labour for introducing new technology. In this sense, flexible functional specialisation makes the firm’s production process more responsive to rapid changes in the market; moreover, it is based on ‘niche markets’ rather than ‘mass markets’. Neo-Fordist theories (Burgess & Macdonald, 1990b; Fieldes & Bramble, 1992; Campbell, 1993) emphasise the importance of flexible production, but with a more negative view of the effects on individuals.

Another type of managerial theory, the ‘managerialist’ or ‘neo-managerialist’ typified by the very influential work of Atkinson (1984, 1987; Atkinson & Gregory, 1986; Van der Velde & Van den Berg, 2003), refers to functional flexibility as the ability of the firm to utilize labour in various ways; also called labour ‘employability’. Functional flexibility is achieved with the willingness and the ability of employee to undertake various tasks (Van der Velde & Van den Berg, 2003).

In Australia functional flexibility was formally implemented with the award restructuring of the late 1980s, driven by both employers’ and employees’ needs. The general belief was that more autonomy and less routine at work would increase labour productivity, and thus, increase the firm’s productivity and global competitiveness. However, since 1996, functional flexibility has been primarily driven by the firm’s needs and it is defined in terms of the firm’s “freedom with which an individual worker's employment position may be changed, or their tasks, duties, responsibilities and so on may be added to or varied by managerial discretion” (Fetter and Mitchell, 2004:4). This is a more unitarist ‘managerialist’ approach to the utilization of labour resources and is consistent with the view of mainstream economics.

This process of award restructuring was revamped in 1996 with a strong emphasis on employers’ prerogatives, which affected the way functional flexibility at work was fostered. The evidence is that functional flexibility not only requires employees’ commitment for greater capability to adapt to new and wider range of tasks, but with less training, longer hours of work, and higher levels of employee stress; this is within a general economic
environment of job precariousness and insecurity (Burgess and Campbell, 1998; Campbell, 2002; Peetz et al., 2003).

There are a number of important issues stemming from these changes that impede the promised fruitful workplace outcomes for employees and for the economy. Job classifications have been reduced, work tasks have been defined very broadly, and there are flimsy definitions and guidelines for employees' training (Bray, et al., 2005:57-58)4.

Less training, longer hours of work, higher levels of employee stress, combined with job precariousness, casualisation and outsourcing, affect the culture of the workplace. The demands of work (workload, pace), the control of work (autonomy, learning, participation), and the general conditions of people’s lives (Benavides, Benach and Muntaner, 2002), affect the motivation to be innovative.

The commitment to innovation does not only respond to pecuniary incentives, but to a corollary of environmental situations, such as training, participation, health and safety, information, and challenging tasks. This makes the work experience a continuous psychological growth, a place for creativity and individuality which improves technological change (Herzberg, 1968; Maslow, 1954). This is precisely why work and the employment relationship underwent a process of transformation to become more ‘humanised’ and democratic in the 1970s and 1980s.

There are risks associated with physical and mental stress for both types of labour, high and low skills (Kuper, Sing-Manoux, Siegrist, Marmot, 2002; Australian Institute of Family Studies, 2005), which place great doubts on the idea of commonality and reciprocity of interests believed by the unitarist approach. Of particular importance is the risk of employees' over-commitment (Kuper, Sing-Manoux, Siegrist, Marmot, 2002; D’Souza, Strazdins, Lim, Broom, Rodgers, 2003).

The high psychological demands from employees (commitment to innovate) are overloaded by their psychological and physical health, as well as the amount and quality of domestic activities (Kuper et al., 2002). The longer individuals are involved in subordinated but high psychological demands activities at work, the more an imbalance exists between the motivation to innovate and learn compared to the rewards that are created.

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4 Recent research (Bray et al., 2005:252) suggests that unless employees are engaged in senior positions, they are unlikely to have a say over their work. Furthermore, the amount of on-the-job training had not changed since the 1980s (Borland, Chapman and Rimmer, 1992; Pickersgill and Arkovska, 2000). What is also important is the nature, or the reasons why training should be implemented. In Australia the evidence is of limited and clustered practices, but greater training is associated with functional flexibility, or high-skilled and high-committed labour (Harley, 1995; Hall, 2002).
Several sources of motivation can be distinguished: the demands of the job (extrinsic), individual motivations (intrinsic), the characteristics of the job, and whether there is social support. The imbalance between high motivation, high demands and low rewards in terms of intrinsic motivations (or low control) hampers effort and creativity (Wickens & Hollands, 2000:485-6). Psychological (and social) empirical studies clearly show that there is a point of saturation from which the motivation to strive or to innovate is ‘polluted’ by the over-commitment for the desire for esteem and approval. This emotional distress disrupts creativity and narrows the process of thinking in decision making (Wickens & Hollands, 2000:485-6).

It is also important to note that functional flexibility within the unitarist approach to human resource management fits a one-way communication structure within the organisation. Even if there exists a network of information, which is based on the assumption that individuals share the firm’s goal of profit maximization (Carter, 1995), a one-way communication structure reinforces a system of rewards that affects the health and welfare of labour and their motivation to innovate in the long-term. Therefore, the ideology behind policies shaping the industrial relations, management and the education system, affect learning and motivations, and thus the preferences and characteristics of individuals to be innovative community members, and innovative labour resource.

Studies on innovation emphasize a need for an alignment of priorities between government, firms, industrial relations and the education system. However, this alignment must also consider how the culture of the organisation influences the system of rewards and so, the commitment of individuals and of the firm to innovate (Danison and Mishra, 1995; Kerr and Slocum, 2005).

The culture influences the process of assimilation and processing of rewards. Individuals form a ‘frame of reference’ (Tversky and Kahneman, 1993 [1990]). This cognitive frame is important in order to balance external stimuli (work demands and rewards) with the internal (to the individual) high-intrinsic effort (and its rewards). Greater stimuli may require a ‘stretching’ of this frame, which leads to distress.

The culture of the organisation alters the frame of reference, and with it, the individual’s psychological motivation to innovate. It means that if there is an imbalance between high motivation, high-cognitive demands (eustress), and low intrinsic rewards (feelings of overwork, distress), effort and creativity are hampered.

The motivation to innovate determines the ability of firms to innovate in the long term. To understand innovation, it is necessary to focus on the way work is organised and how people interact and learn in workplace. The current discrepancy in the theoretical framework creates a workplace culture and habits of thought that tolerate long hours of work and high performance,
which are difficult to eradicate (even for managers), but which hamper severely innovation in the long term.

Stress can be seen to impact both negatively as well as positively on the learning experiences to adapt and to innovate. The length of exposure to each type of stress affects innovative thinking and habits of behaviour. Therefore, management policies need to maintain positive stress, but also to limit hours of complex work, to sustain healthy (flexible) habits of behaviour and of thoughts in the long term.

7. CONCLUSION

This paper extends the literature on innovation management and human resource management. It argues for the need to consider habits as an important factor in determining the commitment to innovate and the outcome of innovation.

Innovation reflects a process of learning. Learning is affected by the system of rewards within each organisation; therefore, workplace practices, management policies, and government policies affect the system of rewards, and so, learning; thereby contributing to, or harnessing the, creation and diffusion of innovation.

The system of rewards help to create a culture of common values and beliefs in every economic, social and political organisation, and innovation, as a learning process, is intertwined with these values in terms of how and what to learn to innovate. It can be said that innovation is about understanding how the priorities of what needs to be learned and how to apply it, in order to innovate, are transmitted, and so it shifts the analysis of innovation on habits of thoughts and of behaviour acquired in the organisation, and on the role of the innovative entrepreneur and its motivation to innovate.

In considering the importance of habits some interesting features about the process of learning and of innovation come to the fore. Habits of behaviour and of thoughts affect the priority of what needs to be learned. Habits help to adapt (Maslow, 1954). They are maintained and reinforced via a system of rewards. However, rewards influence the process of learning, as they perpetuate values and beliefs of what to learn; and so, habits can also hinder adaptation and innovation.

This paper opens up research questions which should focus on the understanding of how learning in the workplace creates habits of behaviour, and so, on how to implement best management practices to create a system of rewards that can greatly influence innovative behaviour. Habits are at the very foundation of innovation. Habits however, embody a double-edged outcome, as habits lead to innovation, habits can also hinder innovation. Habits help to adapt and to innovate, but they can easily be overloaded by an increased pressure from organisational stimuli; and so, habits become customs and traditions which are difficult to eradicate.
In the light of the Australian experience, management policies within a high cognitive workplace environment (high-skills jobs), have been implemented with a clear emphasis on flexibility, performance, minimization of production costs, and eradication of workplace conflict, via deregulations of management norms and workplace laws (Macdonald, Campbell, Burgess, 2001). This system of rewards creates habits and priorities of actions that in the long run would hamper innovation. This system does not acknowledge the importance of the psychological motivation to innovate. This motivation requires a balance of rewards, between the pecuniary and non-pecuniary, which has not been implemented yet.
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